

# Critical Release Notice

**Publication number: 297-5161-022**  
**Publication release: Standard 11.05**

The content of this customer NTP supports the  
SN07 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the baseline NTP and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the baseline NTP remains unchanged and is valid for the current release.

## Bookmark Color Legend

**Black:** Applies to new or modified content for the baseline NTP that is valid through the current release.

**Red:** Applies to new or modified content for NA017 that is valid through the current release.

**Blue:** Applies to new or modified content for NA018 (SN05 DMS) that is valid through the current release.

**Green:** Applies to new or modified content for SN06 (DMS) that is valid through the current release.

**Purple:** Applies to new or modified content for SN07 (DMS) that is valid through the current release.

### *Attention!*

*Adobe® Acrobat® Reader™ 5.0 or higher is required to view bookmarks in color.*

## Publication History

### August 2005

Standard release 11.05 for software release SN07 (DMS).

#### Volume 1

Modified Chapter 20, new section 20.5, for CR Q00986216-01.

### December 2004

Standard release 11.04 for software release SN07 (DMS).

#### Volume 1

Modified Chapter 2 for CR Q0823552-02.

#### Volume 2

Modified Chapter 40 and Chapter 43 for CR Q0823552-02.

### September 2004

Standard release 11.03. This issue is valid for software release SN07 (DMS), although no changes have been made for SN07 (DMS) features.

Changes with respect to standard release 11.02 are as follows:

#### Volume 1

Chapter 4, Agent support modified according to CR Q00893694

#### Volume 2

No changes

#### Volume 3

Chapter 13, OM group AIN modified according to CR Q00765666.

Chapter 14, OM group AINICOFF modified according to CR Q00765666.

Chapter 15, OM group AINICSUB modified according to CR Q00765666.

Chapter 17, OM group AINOGOFF modified according to CRs Q00765666 and Q00527425-04

Chapter 19, OM group AINOGSB2 modified according to CRs Q00765666 and Q00527425-04

Chapter 21, AIN message tracing tool, 21.3 Supported messages and parameters, Table 913 modified according to CR Q00527425-04.

Chapter 23, TSTQUERY tool, 23.3 Supported messages and parameters, Table 933 modified according to CR Q00527425-04.

## **March 2004**

Standard release 11.02 for software release SN06 (DMS). Changes were made to the following sections:

### Volume 1

Chapter 2, Development Summary  
Chapter 3, Call Model  
Chapter 4, Agent support  
Chapter 5, Functional overview  
Chapter 6, Generic SSP procedures  
Chapter 8, Originating call model events  
Chapter 9, Terminating call model triggers  
Chapter 14, STR processing with an SSP resource  
Chapter 16, STR connection to a remote IP  
Chapter 17, Connect\_to\_Resource  
Chapter 19, Error handling  
Chapter 20, Limitations  
Chapter 22, AIN/DMS-100 interactions (A and B)  
Chapter 23, AIN/DMS-100 interactions (C)  
Chapter 24, AIN/DMS-100 interactions (C)

### Volume 2

Chapter 1, AIN/DMS-100 interactions (I to R)  
Chapter 2, AIN/DMS-100 interactions (S to Z)  
Chapter 4, Other interactions  
Chapter 8, Engineering considerations for PRI looparounds  
Chapter 10, Data schema  
Chapter 11, Software optionality control  
Chapter 12, Datafilling for the general office  
Chapter 14, Trigger group provisioning interface  
Chapter 15, Trigger item provisioning interface  
Chapter 39, Trunk Group Trigger  
Chapter 41, Analyze\_Route response  
Chapter 46, Forward\_Call response

## Volume 3

Chapter 6 Billing

Chapter 7 AMA structures and modules

Chapter 17 OM group AINOGOFF

Chapter 19 OM group AINOGSB2

Chapter 21 AIN message tracing tool

Chapter 23 TSTQUERY tool

Chapter 25 Other CI commands for AIN

Chapter 49 Game100

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DMS-100 Family

# Advanced Intelligent Network Service Enablers

Service Implementation Guide Volume 3 of 3

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SN06 (DMS) Standard 11.02 March 2004

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DMS-100 Family

# Advanced Intelligent Network Service Enablers

Service Implementation Guide Volume 3 of 3

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# Contents (Volume 3 of 3)

---

<b>About this document</b>	<b>xxxvii</b>
When to use this document	xxxvii
Electronically stored documents	xxxvii
How to check the version and issue of this document	xxxvii
Structure of this document	xxxvii
Document scope	xxxix
FS and FSS example	xxxix
FS and FSS definitions	xxxix
Document structure and organization	xl
Structure and organization example	xl
References in this document	xl
What precautionary messages mean	xli
How commands, parameters, and responses are represented	xlii
Input prompt (>)	xlii
Commands and fixed parameters	xlii
Variables	xlii
Responses	xlii
<hr/>	
<b>1 Overview of AIN response translations</b>	<b>45</b>
<hr/>	
<b>2 AIN response translations for public agents</b>	<b>47</b>
Datafill public lines and public trunks without simplification	49
Table RCNAME	49
Table RTECHAR	51
Digits used in AIN response translations	62
Table PXLAMAP	63
Table STDPRTCT	67
10-digit dialing in the home numbering plan	70
Route mapping tables	71
Sample TRAVERS for public lines and trunks without simplification	72
Additional data required for AIN response translations in TRAVERS	72
National call - returned number on the same SSP	75
National call - returned number within the user HNP	78
National call - returned number not within the user HNP	80
Subscriber call	82
National carrier call	84
International call	87
International carrier call	88
International operator	90

International carrier operator 92  
National carrier operator 94  
Carrier operator 96  
Bell operating company operator call 98

---

**3 AIN simplified response translations for public agents 101**

Table PXLAMAP 102  
Different digit streams produced by simplification 103  
Triggering agents of type public line 103  
Optional removal of NPA where 1+10-digit dialing is mandatory 106  
Triggering agents of type local or FGC trunk 107  
Triggering agents of type FGD trunks 109  
Table STDPRTCT 112  
PODPATTR Interactions with response translation simplification 115  
Sample TRAVERs for the generic SSP 115  
Additional data required for AIN response processing in  
TRAVERs 115  
National calls 117  
National carrier call 125  
International call 128  
International operator 129  
International carrier operator 131  
National carrier operator 133  
Carrier operator 136  
Carrier cut-through 138  
National carrier call with trunk originator 140  
National call with trunk originator 141  
National carrier call with 4 CIC based FGD trunk originator 142  
National call with LEC carrier and FGD trunk originator 144  
National carrier operator call with 4 CIC based FGD trunk  
originator 146  
National call with for CIC based FGD trunk originator 147  
International carrier call with FGC trunk originator 149

---

**4 AIN response translations for private agents 151**

Datafill for private lines and trunks without simplification 153  
Table RCNAME 153  
Table RTECHAR 155  
Digits used in AIN response translations 165  
Table XLAMAP 166  
Table XLANAME 169  
Table LINEATTR 170  
Table PXLAMAP 171  
Table STDPRTCT 175  
Table HNPACONT.HNPACODE 178  
Route mapping tables 178  
Sample TRAVERs for private lines and trunks (no simplification) 180  
Additional data required for AIN response translations in  
TRAVERs 180  
National call when the number returned is on the same SSP 183

---

National call - returned number returned is in the user HNP 186  
 National carrier call 188

---

## **5 AIN simplified response translations for private agents** **193**

AIN response translations simplification in the private environment 195  
   Option PUB\_NET\_ACC 195  
   Option PUB\_NET\_ACC in table NCOS 196  
   Option PUB\_NET\_ACC in table CUSTHEAD 197  
   Different digit streams produced by simplification 198  
 Residential lines 201  
 Response translations simplification in the public environment for triggering private agents 201  
   Table PXLAMAP 202  
   Optional removal of NPA where 1+10-digit dialing is mandatory 205  
   PODPATTR interactions with response translation simplification 206  
   TRAVER enhancements for AIN response translations simplification 206  
 Sample TRAVERs for private lines and trunks with simplification 207  
   Simplification feature activated in the private environment 207  
   Additional data required for AIN response translations to activate simplification feature in the public environment 215

---

## **6 Billing** **227**

Billing Areas 227  
   Call Type Codes 228  
   Structure record generation 228  
 TCAP related AMA 230  
   Overview 230  
   AMAMeasure parameter 231  
   AMAMeasurement parameter 233  
 Switch-based modules 233  
   Product view 233  
   Indicator module 233  
   ISDN module 234  
   MDR module 234  
   WATS module 234  
 AMA affecting parameters 234  
   Product view 234  
   Completion indicator field 234  
 Default routing AMA 236  
   AMA for default routing 237  
 Send\_To\_Resource AMA 237  
   Send To Resource and Connect To Resource AMA enhancements 241  
 Connect To Resource AMA 248  
 Offer\_Call billing 249  
 Double carrier access record suppression 250  
 Alternate carrier routing 250  
 Collect Information message 251

- Create\_Call message 251
- AMA call scenarios 252
  - AMA records with module code 204 252
  - AMA records for trigger O\_Called\_Party\_Busy 255
  - AMA records for trigger O\_No\_Answer 257
  - AMA records for the T\_Busy event 258
  - AMA records for the T\_No\_Answer event 260
  - AMA records for the Network\_Busy event 263
  - AMA records with completion indicator 009 265
  - AMA records for default routing 268
  - AMA records for Send\_To\_Resource 269
  - Multiple extended TCAP transactions (METT) 271
  - AMA records for the O\_Disconnect, O\_Disconnect\_Called and Timeout events 274

---

**7 AMA structures and modules 275**

- Translation Settable module 030 279
- Service Logic Program Identification module 039 279
- Digits module 040 280
- Account Code/CDAR module 103 280
- Line Number module 307 280

---

**8 Network management 287**

- ACG messages and parameters 287
- ACG control list overflow 288
- Gap intervals 288
- Global restore of a control list 290
  - ACGRESTORE command 291
- Limitations 291

---

**9 Resource monitoring 293**

- Overview 293
  - Monitoring single lines 293
  - Monitoring hunt groups 294
- Messages 295
  - Monitor\_For\_Change SCP request message 295
  - Monitor success SSP response message 298
  - Status\_Reported SSP response message 298
- Monitor\_For\_Change process 298
  - Monitoring single lines 299
  - Monitoring hunt groups 305
    - Events monitored on an idle hunt group 311
    - Events monitored on a busy hunt group 311
  - Handling time out 311
- Multiple monitors 312
- Agent support 312
- Error handling 312
- Limitations and restrictions 312
- Feature interactions 312

---

<b>10</b>	<b>Information revision messages</b>	<b>313</b>
	Update_Request message and processing	313
	Update_Request message and processing	313
	Update_Data message and processing	313
	Update message and processing	314
	Trigger activation and deactivation	315
	MessageWaitingIndicator activation and deactivation	315
	Update_Success message	316
	Application_Error	316
	Failure_Report	317
	Reject_Component	319
	Update Message Examples	319
	Update message interactions	320
	CI commands	321
	AdministrableObject parameter	321
	SSPUserResource	321
	TriggerItemAssignment parameter	322
	ONoAnswerTimer parameter	323
	TNoAnswerTimer parameter	323
	TriggerCriteriaFlag parameter	323
	UserID parameter	324
	Agent support	325
	limitations and restrictions	325
<b>11</b>	<b>Operational measurements for AIN</b>	<b>327</b>
	AIN OM group	327
	Traffic measurements	329
	Maintenance measurements	329
	AINACG OM group	331
	FTROM OM group	331
	OMs that count AIN messages	332
	AINOGOFF OM group	334
	AINOGSUB OM group	335
	AINOGSB2 OM group	337
	AINICOFF OM group	337
	AINICSUB OM group	338
	AINNCR OM group	339
	AIN SSP feature operational measurements	339
	Non-AIN SSP-specific maintenance measurements	340
<b>12</b>	<b>OM group EXT</b>	<b>341</b>
	OM description	341
	Registers	341
	Release history	342
	EUR009	342
	TL010	342
	EUR008	342
	NA009	342
	MSL07	343

---

- EUR006 343
- TOPS07 343
- NA007 343
- NA006 343
- TOPS05 343
- NA005Aa 343
- NA005 343
- NA004 344
- BCS36 344
- BCS35 344
- BCS34 344
- BCS33 344
- BCS32 344
- BCS31 345
- BCS30 345
- BCS29 345
- BCS28 345
- BCS27 345
- BCS26 345
- BCS25 345
- BCS24 345
- BCS23 346
- BCS22 346
- BCS21 346
- BCS20 346

---

**13 OM group AIN**

**347**

- OM description 347
- Registers 347
- Group structure 349
- Related OM groups 349
- Related functional groups 349
- Related functionality codes 350
- Register AINCALL 355
  - Register AINCALL release history 355
  - Related registers 355
  - Related logs 355
  - Extension registers 355
- Register AMACONV 355
  - Register AMACONV release history 355
  - Related registers 355
  - Related logs 355
  - Extension registers 356
- Register AMAMAX 356
  - Register AMAMAX release history 356
  - Related registers 356
  - Related logs 356
  - Extension registers 356
- Register AMASLPID 356
  - Register AMASLPID release history 356

- Related registers 356
- Related logs 357
- Extension registers 357
- Register AUGPEXH 357
  - Register AUGPEXH release history 357
  - Related registers 357
  - Related logs 357
  - Extension registers 357
- Register CCTMOUT 357
  - Register CCTMOUT release history 357
  - Related registers 358
  - Related logs 358
  - Extension registers 358
- Register CIOVFAFQ 358
  - Register CIOVFAFQ release history 358
  - Related registers 358
  - Related logs 358
  - Extension registers 358
- Register CIOVFBFQ 358
  - Register CIOVFBFQ release history 358
  - Related registers 359
  - Related logs 359
  - Extension registers 359
- Register CPFLAFQ 359
  - Register CPFLAFQ release history 359
  - Related registers 359
  - Related logs 359
  - Extension registers 359
- Register CPFLBFQ 359
  - Register CPFLBFQ release history 360
  - Related registers 360
  - Related logs 360
  - Extension registers 360
- Register INTROFF 360
  - Register INTROFF release history 361
  - Related registers 361
  - Related logs 361
  - Extension registers 361
- Register INTROFF2 361
  - Register INTROFF2 release history 361
  - Related registers 361
  - Related logs 361
  - Extension registers 361
- Register INVCMDMG 361
  - Register INVCMDMG release history 362
  - Related registers 362
  - Related logs 362
  - Extension registers 362
- Register INVCMDSE 362
  - Register INVCMDSE release history 362
  - Related registers 362

- Related logs 362
- Extension registers 362
- Register MAXQEXCD 362
  - Register MAXQEXCD release history 363
  - Related registers 363
  - Related logs 363
  - Extension registers 363
- Register RSPTMOUT 363
  - Register RSPTMOUT release history 363
  - Related registers 363
  - Related logs 363
  - Extension registers 364
- Register TIOVFAFQ 364
  - Register TIOVFAFQ release history 364
  - Related registers 364
  - Related logs 364
  - Extension registers 364
- Register TIOVFBFQ 364
  - Register TIOVFBFQ release history 364
  - Related registers 364
  - Related logs 364
  - Extension registers 364
- Register TRIG 365
  - Register TRIG release history 365
  - Related registers 365
  - Related logs 365
  - Extension registers 365
- Register TRIG2 365
  - Register TRIG2 release history 365
  - Related registers 365
  - Related logs 365
  - Extension registers 365
- Release history 365

---

**14 OM group AINICOFF**

**367**

- OM description 367
- Registers 368
- Group structure 368
- Related OM groups 368
- Related functional groups 369
- Related functionality codes 369
- Register IOAR 372
  - Register IOAR release history 373
  - Related registers 373
  - Related logs 373
  - Extension registers 373
- Register IOCON 373
  - Register IOCON release history 373
  - Related registers 373
  - Related logs 373

---

Extension registers	373
Register IOCTR	373
Register IOCTR release history	373
Related registers	373
Related logs	374
Extension registers	374
Register IODISC	374
Register IODISC release history	374
Related registers	374
Related logs	374
Extension registers	374
Register IOSTR	374
Register IOSTR release history	374
Related registers	374
Related logs	375
Extension registers	375
Register IOCRE	375
Register IOCRE release history	375
Related registers	375
Related logs	375
Extension registers	376
Register IOCITR	376
Register IOCITR release history	376
Related registers	376
Related logs	376
Extension registers	376
Register IOSN	376
Register IOSN release history	376
Related registers	376
Related logs	377
Extension registers	377
Register IORRBE	377
Register IORRBE release history	377
Related registers	377
Related logs	377
Extension registers	377
Register IOCLOSI	377
Register IORRBE release history	377
Related registers	377
Related logs	377
Extension registers	377
Register IOCINFO	378
Register IOCINFO release history	378
Related registers	378
Related logs	378
Extension registers	378
Register IOCCALL	378
Register IOCCALL release history	378
Related registers	378
Related logs	378
Extension registers	378

Release history 378  
NA017 378  
NA008 379

---

**15 OM group AINICSUB 381**

OM description 381  
Registers 382  
Group structure 382  
Related OM groups 383  
Related functional groups 383  
Related functionality codes 383  
Register ISAR 388  
    Register ISAR release history 388  
    Related registers 388  
    Related logs 388  
    Extension registers 388  
Register ISCINFO 388  
    Register ISCINFO release history 388  
    Related registers 388  
    Related logs 388  
    Extension registers 388  
Register ISCON 389  
    Register ISCON release history 389  
    Related registers 389  
    Related logs 389  
    Extension registers 389  
Register ISAUTHT 389  
    Register ISAUTHT release history 389  
    Related registers 389  
    Related logs 389  
    Extension registers 389  
Register ISCTR 389  
    Register ISCTR release history 390  
    Related registers 390  
    Related logs 390  
    Extension registers 390  
Register ISFC 390  
    Register ISFC release history 390  
    Related registers 390  
    Related logs 390  
    Extension registers 390  
Register ISDISC 390  
    Register ISDISC release history 390  
    Related registers 390  
    Related logs 391  
    Extension registers 391  
Register ISSTR 391  
    Register ISSTR release history 391  
    Related registers 391  
    Related logs 391

- Extension registers 391
- Register ISCRE 391
  - Register ISCRE release history 392
  - Related registers 392
  - Related logs 392
  - Extension registers 392
- Register ISCITR 392
  - Register ISCITR release history 392
  - Related registers 392
  - Related logs 393
  - Extension registers 393
- Register ISSN 393
  - Register ISSN release history 393
  - Related registers 393
  - Related logs 393
  - Extension registers 393
- Register ISRRBE 393
  - Register ISRRBE release history 394
  - Related registers 394
  - Related logs 394
  - Extension registers 394
- Register ISCLOSI 394
  - Register ISCLOSI release history 394
  - Related registers 394
  - Related logs 394
  - Extension registers 394
- Register ISOFRCL 394
  - Register ISOFRCL release history 394
  - Related registers 394
  - Related logs 395
  - Extension registers 395
- Release history 395
  - NA017 395
  - NA008 395

---

**16 OM group AINNCR 397**

- OM description 397
- Registers 398
- Group structure 398
- Associated OM groups 398
- Associated functional groups 399
- Associated functionality codes 399
- Register NACG 402
  - Register NACG release history 402
  - Associated registers 402
  - Associated logs 402
  - Extension registers 402
- Register NAOVFW 402
  - Register NAOVFW release history 402
  - Associated registers 402

- Associated logs 402
- Extension registers 403
- Register NAGCR 403
  - Register NAGCR release history 403
  - Associated registers 403
  - Associated logs 403
  - Extension registers 403
- Register NAGCRS 403
  - Register NAGCRS release history 403
  - Associated registers 403
  - Associated logs 404
  - Extension registers 404
- Register NUPREQ 404
  - Register NUPREQ release history 404
  - Associated registers 404
  - Associated logs 404
  - Extension registers 404
- Register NUPDAT 404
  - Register NUPDAT release history 404
  - Associated registers 405
  - Associated logs 405
  - Extension registers 405
- Register NMFC 405
  - Register NMFC release history 405
  - Associated registers 405
  - Associated logs 405
  - Extension registers 405
- Register NMSUCC 405
  - Register NMSUCC release history 406
  - Associated registers 406
  - Associated logs 406
  - Extension registers 406
- Register NSREP 406
  - Register NSREP release history 406
  - Associated registers 406
  - Associated logs 406
  - Extension registers 406
- Register NUPD 406
  - Register NUPD release history 406
  - Associated registers 406
  - Associated logs 407
  - Extension registers 407
- Register NUSUCC 407
  - Register NUSUCC release history 407
  - Associated registers 407
  - Associated logs 407
  - Extension registers 407
- Release history 407

---

OM description	409
Registers	410
Group structure	410
Associated OM groups	410
Associated functional groups	411
Associated functionality codes	411
Register TOIASDS	415
Register TOIASDS release history	416
Associated registers	416
Associated logs	416
Extension registers	416
Register TOIAN11	416
Register TOIAN11 release history	416
Associated registers	416
Associated logs	416
Extension registers	416
Register EONB	416
Register EONB release history	416
Associated registers	416
Associated logs	417
Extension registers	417
Register EOOCB	417
Register EOOCB release history	417
Associated registers	417
Associated logs	417
Extension registers	417
Register EOONA	417
Register EOONA release history	417
Associated registers	418
Associated logs	418
Extension registers	418
Register EOOANS	418
Register EOOANS release history	418
Associated registers	418
Associated logs	418
Extension registers	418
Register IOTN	418
Register IOTN release history	418
Associated registers	418
Associated logs	419
Extension registers	419
Register IOCCLR	419
Register IOCCLR release history	419
Associated register	419
Associated logs	419
Extension registers	419
Register IOCIFR	419
Register IOCIFR release history	419
Associated registers	419
Associated logs	420
Extension registers	420

- Register IORCLR 420
  - Register IORCLR release history 420
  - Associated registers 420
  - Associated logs 420
  - Extension registers 420
- Register IOCLOSO 421
  - Register IOCLOSO release history 421
  - Associated registers 421
  - Associated logs 421
  - Extension registers 421
- Register EOODCING 421
  - Register EOODCING release history 421
  - Associated registers 421
  - Associated logs 421
  - Extension registers 421
- Register EOODCLED 422
  - Register EOODCLED release history 422
  - Associated registers 422
  - Associated logs 422
  - Extension registers 422
- Register EOTOUT 422
  - Register EOTOUT release history 422
  - Associated registers 422
  - Associated logs 422
  - Extension registers 422
- Release history 423
  - NA017 423
  - NA008 423

---

**18 OM group AINOGSUB**

**425**

- OM description 425
- Registers 426
- Group structure 427
- Related OM groups 427
- Related functional groups 428
- Related functionality codes 428
- Register TSOAOHI 436
  - Register TSOAOHI release history 436
  - Related registers 436
  - Related logs 436
  - Extension registers 436
- Register TSICOHD 436
  - Register TSICOHD release history 436
  - Related registers 436
  - Related logs 436
  - Extension registers 436
- Register TSICSIT 436
  - Register TSICSIT release history 437
  - Related registers 437
  - Related logs 437

---

Extension registers	437
Register TSIAPFC	437
Register TSIAPFC release history	437
Related registers	437
Related logs	437
Extension registers	437
Register TSIASFC	437
Register TSIASFC release history	437
Related registers	437
Related logs	438
Extension registers	438
Register TSIACDP	438
Register TSIACDP release history	438
Related registers	438
Related logs	438
Extension registers	438
Register TSNBAFR	438
Register TSNBAFR release history	438
Related registers	438
Related logs	438
Extension registers	438
Register ESNB	439
Register ESNB release history	439
Related registers	439
Related logs	439
Extension registers	439
Register TSOBCEB	439
Register TSOBCEB release history	439
Related registers	439
Related logs	439
Extension registers	439
Register ESOCB	439
Register ESOCB release history	440
Related registers	440
Related logs	440
Extension registers	440
Register TSONANA	440
Register TSONANA release history	440
Related registers	440
Related logs	440
Extension registers	440
Register ESODCING	440
Register ESODCING release history	440
Associated registers	441
Associated logs	441
Extension registers	441
Register ESODCLED	441
Register ESODCLED release history	441
Associated registers	441
Associated logs	441
Extension registers	441

- Register ESOMTOUT 441
  - Register ESOMTOUT release history 441
  - Related registers 441
  - Related logs 442
  - Extension registers 442
- Register ESONA 442
  - Register ESONA release history 442
  - Related registers 442
  - Related logs 442
  - Extension registers 442
- Register ESOANS 442
  - Register ESOANS release history 442
  - Related registers 443
  - Related logs 443
  - Extension registers 443
- Register TSTATTA 443
  - Register TSTATTA release history 443
  - Related registers 443
  - Related logs 443
  - Extension registers 443
- Register ESTBSY 443
  - Register ESTBSY release history 443
  - Related registers 443
  - Related logs 444
  - Extension registers 444
- Register ESTNA 444
  - Register ESTNA release history 444
  - Related registers 444
  - Related logs 444
  - Extension registers 444
- Register ISCIFR 444
  - Register ISCIFR release history 444
  - Related registers 444
  - Related logs 445
  - Extension registers 445
- Register ISRCLR 445
  - Register ISRCLR release history 445
  - Related registers 445
  - Related logs 445
  - Extension registers 446
- Register ISCLOSO 446
  - Register ISCLOSO release history 446
  - Related registers 446
  - Related logs 446
  - Extension registers 446
- Register ISTN 446
  - Register ISTN release history 446
  - Related registers 446
  - Related logs 447
  - Extension registers 447
- Register TSTBSY 447

---

- Register TSTBSY release history 447
- Related registers 447
- Related logs 447
- Extension registers 447
- Register TSTNA 447
  - Register TSTNA release history 447
  - Related registers 447
  - Related logs 447
  - Extension registers 447
- Register ESTANS 448
  - Register ESTANS release history 448
  - Related registers 448
  - Related logs 448
  - Extension registers 448
- Register TSICPRIB 448
  - Register TSICPRIB release history 448
  - Related registers 448
  - Related logs 448
  - Extension registers 448
- Register TSIA1PLS 448
  - Register TSIA1PLS release history 448
  - Related registers 449
  - Related logs 449
  - Extension registers 449
- Register TSIASPCR 449
  - Register TSIASPCR release history 449
  - Related registers 449
  - Related logs 449
  - Extension registers 449
- Register TSIAINT 449
  - Register TSIAINT release history 449
  - Related registers 449
  - Related logs 449
  - Extension registers 449
- Register TSIAOPSV 450
  - Register TSIAOPSV release history 450
  - Related registers 450
  - Related logs 450
  - Extension registers 450
- Release history 450
  - NA017 450
  - NA008 450

---

<b>19</b>	<b>OM group AINOGSB2</b>	<b>451</b>
	OM description 451	
	Registers 452	
	Group structure 452	
	Associated OM groups 452	
	Associated functional groups 453	
	Associated functionality codes 453	

- Register ISCCLR 455
  - Register ISCCLR release history 455
  - Associated registers 455
  - Associated logs 455
  - Extension registers 455
- Register ESTMTOUT 455
  - Register ESTMTOUT release history 455
  - Associated registers 455
  - Associated logs 455
  - Extension registers 455
- Release history 456
  - NA017 456
  - NA016 456

---

**20 OM group FTROM 457**

- OM description 457
- Registers 457
- Group structure 457
- Associated OM groups 458
- Associated functional groups 458
- Associated functionality codes 458
- Register FTRHI 460
  - Register FTRHI release history 460
  - Associated registers 460
  - Associated logs 460
  - Extension registers 460
  - Validation formula 460
- Register FTRSEIZ 460
  - Register FTRSEIZ release history 460
  - Associated registers 460
  - Associated logs 460
  - Extension registers 460
  - Validation formula 460
- Release history 461

---

**21 AIN message tracing tool 463**

- Using TOOLSUP to access AINTRACE 463
- AINTRACE commands 464
  - HELP command 465
  - STATUS command 465
  - SELECT command 465
  - REMOVE command 469
  - START command 472
  - STOP command 472
  - FORMAT command 472
  - QUIT command 473
- Supported messages and parameters 473
  - SOC idle warning 478
- Viewing AINT 700 logs using the LOGUTIL tool 478
- AINTRACE example 1 479

---

 Limitations 481

---

**22 Translation verification tool for AIN 483**

- Limitations 485
- Restrictions 486
- TRAVER command 486
- Equal access translation 486
- MF inter-toll trunk translation 486
- AIN response translation simplification 489
  - Parameter DIGCONV 494
  - Parameters FGD and CIC3 495
- Option AINCHG 496
- Option AINMQG 496
  - AccessCode 501
  - BearerCapability 501
  - CallingPartyBGID 502
  - CalledPartyID 506
  - CallingPartyID 507
  - Carrier 507
  - CarrierID 509
  - ChargeNumber 510
  - ChargePartyStationType 511
  - CollectedAddressInfo 513
  - CollectedDigits 514
  - LATA 515
  - NetworkSpecificFacilities 515
  - Prefix 517
  - TriggerCriteriaType 517
  - UserID 518
  - VerticalServiceCode 519
- TRAVER example 1 520
- TRAVER example 2 522
- TRAVER example 3 522
- TRAVER example 4 523
- Option AINRES 524
  - TRAVER for AIN Service Enablers 525
    - Collect\_Information response message 526
  - TRAVER and the DMS trigger item interface 539
  - TRAVER and SFC and PFC triggers 541
    - TRAVER and the specific feature code trigger 542
    - TRAVER and the public feature code trigger 546
    - Example with option AINDENY 549
  - TRAVER and the OFCPFC trigger 550
    - Traver OFCPFC office wide subscription 551
    - Traver Example with AINDENY option 553
    - Traver for an IBN agent 556
  - TRAVER and SDS escape code implementation 557
  - TRAVER and prefix triggers 560
    - TRAVER examples for prefix triggers 561
  - TRAVER example with AINCHG option 561

TRAVER examples with AINMQG option	563
TRAVER examples with AINRES option	565
AINRES option and the trigger item provisioning interface	565
Analyze Route	565
Forward Call	567
Continue	569
Authorize Termination	571
Send To Resource	571
TERMATT	571
TRAVER example of routing to an IP	573
TRAVER examples for prefix triggers	575
TRAVER example for trigger Specified_Carrier	576
TRAVER example for the One_Plus_Prefix trigger	581
TRAVER example for the International trigger	585
TRAVER example for the Operator_Services trigger (1 of 2)	589
TRAVER example for the Operator_Services trigger (2 of 2)	592
TRAVER example when the SOC option is idle	595
TRAVER example for triggering from ISUP IAM parameters	598
TRAVER example for triggering from AIN response parameters	602
TRAVER Example: STRATTRS table	609
TRAVER for Dynamically controlled routing with AIN	611
TRAVER for parameter CarrierUsage	617
TRAVER for STR response with Destination Address	620
Example 1: Response Processing with POTS agent as originator	620
Example 2: Response Processing with Trunk agent as originator	621
Example 3: Response Processing with VFG-IBN originator	623
Example 5: Response Processing with carrier in STR message	625
Example 6: Response Processing when AIN00304 SOC is IDLE	627
Response Processing for missing attributes	629
Example 8: Response Processing for Analyze_Route response	630
Example 9: Response Processing for invalid Destination address	633

---

<b>23</b>	<b>TSTQUERY tool</b>	<b>635</b>
	Directory description	635
	Limitations	636
	Supported messages and parameters	636
	Using TSTQUERY	650
	TSTQUERY menu commands	652
	Input from a file	657
	Interactions with ACG	657
	Response delay	658
	Error message	658
	TSTQUERY processing of messages	658
	Send_Notification	660
	Send_To_Resource	660
	Request_Report_BCM_Event	661
	ACG	661

---

<b>24</b>	<b>AIN Scope Change tool (AINSCT)</b>	<b>663</b>
	Directory description	663

---

Functional Overview 663  
 Using the Scope Change tool (AINSCT) 666  
 Supported commands 666  
     ANALYZE command 666  
     CLEAR command 676  
     CONVERT command 676  
     HELP command 689  
 Supported messages and parameters 690  
     Warning message for AINTITT tool 690  
 Limitations 691

---

**25 Other CI commands for AIN 693**

Query commands 693  
 Display of office wide AIN trigger group subscription 694  
 Display of customer group AIN trigger group subscription 695  
 Samples of queries 696  
 Line query tool support for the DMS trigger item interface 700  
     Query commands 702  
 MAKEAMA command 703  
 AMADUMP and CALLDUMP commands 703  
 AINTCPCI commands 704  
 AINMKRES tool 704  
 AINCI command interpreter directory 705  
     Trigger activation-state administration for the trigger group provisioning interface 705  
     Automatic Code Gapping commands 711  
 CALLTRAK tool 712  
     When to use CALLTRAK 712  
     CALLTRAK commands 712  
     Restrictions and limitations 712  
 DISPCALL tool 713  
     When to use DISPCALL 714  
     Commands 714  
     How to access DISPCALL 715  
     Notes for the use of DISPCALL 716  
     Restrictions and limitations 718  
 ACGRESTORE 719  
     ACGRESTORE syntax 719  
     ACGRESTORE responses 719  
 UPDCI increment 722  
     When to use UPDCI 722  
     Commands 722  
 XPMIST 724  
 QAIN 724  
     QAIN DN <directory number> 725  
     QAIN LEN <line equipment number> 727  
     QAIN CUSGRP <customer group> 729  
     QAIN TRK <trunk group> 731  
     QAIN OFC 731

<b>26</b>	<b>Trouble locating for AIN</b>	<b>733</b>
	Advanced trouble locating procedures task list	733
	Verify datafill using TRAVER	736
	AINTRACE utility	736
	C7TU test utility	736
	Error detection	736
	Protocol error handling	737
	Application error handling	738
	Error detection at the decoded SCP	739
	Protocol errors	739
	Application errors	739
	Reporting to the SCP or adjunct	741
	Protocol errors	741
	Application errors	741
	Caller abandon information	742
	AIN advanced trouble locating procedures	742
	Task list	742
	Calls to AIN trigger do not complete	743
	Application	743
	Definition	744
	Common procedures	744
	Action	744
<b>27</b>	<b>Logs for AIN</b>	<b>749</b>
<b>28</b>	<b>AUD579</b>	<b>751</b>
	Explanation	751
	Format	751
	Example	751
	Field descriptions	752
	Action	752
	Associated OM registers	752
	Additional information	752
<b>29</b>	<b>AIN300</b>	<b>753</b>
	Explanation	753
	Format	753
	Example	753
	Field descriptions	754
	Action	754
	Associated OM registers	754
	Additional information	754
<b>30</b>	<b>AIN301</b>	<b>755</b>
	Explanation	755
	Format	755
	Example	755
	Field descriptions	756

Action 756  
 Associated OM registers 756  
 Additional information 756

---

**31 AIN302 757**

Explanation 757  
 Format 757  
 Example 757  
 Field descriptions 758  
 Action 758  
 Associated OM registers 758  
 Additional information 758

---

**32 AIN303 759**

Explanation 759  
 Format 759  
 Example 759  
 Field descriptions 760  
 Action 760  
 Associated OM registers 760  
 Additional information 760

---

**33 AIN304 761**

Explanation 761  
 Format 761  
 Example 761  
 Field descriptions 761  
 Action 762  
 Associated OM registers 762  
 Additional information 762

---

**34 AIN500 763**

Explanation 763  
 Format 763  
 Example 763  
 Field descriptions 764  
 Action 764  
 Associated OM registers 764  
 Additional information 764

---

**35 AIN501 765**

Explanation 765  
 Format 765  
 Example 765  
 Field descriptions 766  
 Action 766  
 Associated OM registers 766  
 Additional information 766

<b>36</b>	<b>AIN510</b>	<b>767</b>
	Explanation 767	
	Format 767	
	Example 767	
	Field descriptions 767	
	Action 768	
	Associated OM registers 768	
	Additional information 768	
<b>37</b>	<b>AIN511</b>	<b>769</b>
	Explanation 769	
	Format 769	
	Example 769	
	Field descriptions 769	
	Action 770	
	Associated OM registers 770	
	Additional information 770	
<b>38</b>	<b>AIN600</b>	<b>771</b>
	Explanation 771	
	Format 771	
	Example 771	
	Field descriptions 772	
	Action 772	
	Explanation 772	
	Format 773	
	Example 773	
	Field descriptions 773	
	Action 774	
	Associated OM registers 774	
	Release history 774	
	NA017 774	
<b>39</b>	<b>AIN601</b>	<b>775</b>
	Explanation 775	
	Format 775	
	Example 775	
	Field descriptions 776	
	Action 777	
	Associated OM registers 777	
	Release history 777	
	Na017 777	
<b>40</b>	<b>AIN602</b>	<b>779</b>
	Explanation 779	
	Format 779	
	Example 779	
	Field descriptions 780	

---

	Action	781	
	Associated OM registers	781	
<b>41</b>	<b>AIN610</b>		<b>783</b>
	Explanation	783	
	Format	783	
	Example	783	
	Field descriptions	784	
	Action	784	
	Associated OM registers	784	
	Additional information	784	
<b>42</b>	<b>AIN611</b>		<b>785</b>
	Explanation	785	
	Format	785	
	Example	785	
	Field descriptions	786	
	Action	786	
	Associated OM registers	786	
	Additional information	786	
<b>43</b>	<b>AIN612</b>		<b>787</b>
	Explanation	787	
	Format	787	
	Example	787	
	Field descriptions	788	
	Action	789	
	Associated OM registers	789	
	Additional information	789	
<b>44</b>	<b>AIN700</b>		<b>791</b>
	Explanation	791	
	Format	791	
	Examples	794	
	T_Busy query and Offer_Call response	794	
	ACG	800	
	Update query and Update_success response	803	
	Create_Call	807	
	Field descriptions	810	
	Action	811	
	Associated OM registers	811	
	Release history	811	
	NA017	811	
<b>45</b>	<b>AUD650</b>		<b>813</b>
	Explanation	813	
	Format	813	
	Example	813	
	Field descriptions	814	

---

	Action 814	
	Associated OM registers 815	
	Additional information 815	
<b>46</b>	<b>AUD651</b>	<b>817</b>
	Explanation 817	
	Format 817	
	Example 817	
	Action 817	
	Associated OM registers 818	
	Additional information 818	
<b>47</b>	<b>DFIL109</b>	<b>819</b>
	Explanation 819	
	Format 819	
	Example 819	
	Field descriptions 819	
	Action 819	
	Associated OM registers 820	
	Additional information 820	
<b>48</b>	<b>DFIL320</b>	<b>821</b>
	Explanation 821	
	Format 821	
	Example 821	
	Field descriptions 822	
	Action 822	
	Related OM registers 822	
<b>50</b>	<b>Product support</b>	<b>827</b>
	General 827	
	Customer acceptance 827	
	<b>List of terms</b>	<b>829</b>
	Bibliography 881	
	<b>Bibliography</b>	<b>881</b>

---

# Master Table of Contents

---

## Contents (Volume 1 of 3)

---

<b>1</b>	<b>Product overview</b>	<b>45</b>
<b>2</b>	<b>Development summary</b>	<b>47</b>
<b>3</b>	<b>Call model</b>	<b>115</b>
<b>4</b>	<b>Agent support</b>	<b>127</b>
<b>5</b>	<b>Functional overview</b>	<b>181</b>
<b>6</b>	<b>Generic SSP procedures</b>	<b>197</b>
<b>7</b>	<b>Originating call model triggers</b>	<b>339</b>
<b>8</b>	<b>Originating call model events</b>	<b>383</b>
<b>9</b>	<b>Terminating call model triggers</b>	<b>457</b>
<b>10</b>	<b>Terminating call model events</b>	<b>471</b>
<b>11</b>	<b>Participant interactions</b>	<b>479</b>
<b>12</b>	<b>Generic SCP-SSP interactions for Send_To_Resource</b>	<b>491</b>
<b>13</b>	<b>Generic SSP-IP interactions for Send_To_Resource</b>	<b>503</b>
<b>14</b>	<b>STR processing with an SSP resource</b>	<b>519</b>
<b>15</b>	<b>STR connection to a local IP</b>	<b>549</b>
<b>16</b>	<b>STR connection to a remote IP</b>	<b>577</b>

---

<b>17</b>	<b>Connect_To_Resource</b>	<b>613</b>
<b>18</b>	<b>Toll-free service</b>	<b>629</b>
<b>19</b>	<b>Error handling</b>	<b>647</b>
<b>20</b>	<b>Limitations</b>	<b>671</b>
<b>21</b>	<b>AIN interactions introduction</b>	<b>717</b>
<b>22</b>	<b>AIN/DMS-100 interactions (A and B)</b>	<b>741</b>
<b>23</b>	<b>AIN/DMS-100 interactions (C)</b>	<b>797</b>
<b>24</b>	<b>AIN/DMS-100 interactions (D to H)</b>	<b>957</b>
	<b>List of terms</b>	<b>1071</b>

## **Contents (Volume 2 of 3)**

---

<b>1</b>	<b>AIN/DMS-100 interactions (I to R)</b>	<b>41</b>
<b>2</b>	<b>AIN/DMS-100 interactions (S to Z)</b>	<b>175</b>
<b>3</b>	<b>Attendant console interactions</b>	<b>269</b>
<b>4</b>	<b>Other interactions</b>	<b>275</b>
<b>5</b>	<b>Hardware description</b>	<b>309</b>
<b>6</b>	<b>SSP engineering</b>	<b>311</b>
<b>7</b>	<b>Message requirements</b>	<b>317</b>
<b>8</b>	<b>Engineering considerations for PRI looparounds</b>	<b>319</b>
<b>9</b>	<b>Provisioning overview</b>	<b>335</b>
<b>10</b>	<b>Data schema</b>	<b>345</b>
<b>11</b>	<b>Software optionality control</b>	<b>401</b>

---

<b>12</b>	<b>Datafilling for the general office</b>	<b>455</b>
<b>13</b>	<b>SS7 datafill</b>	<b>487</b>
<b>14</b>	<b>Trigger group provisioning interface</b>	<b>493</b>
<b>15</b>	<b>Trigger item provisioning interface</b>	<b>511</b>
<b>16</b>	<b>SERVORD guidelines</b>	<b>551</b>
<b>17</b>	<b>Provisioning assumptions</b>	<b>575</b>
<b>18</b>	<b>Off-Hook_Immediate trigger</b>	<b>577</b>
<b>19</b>	<b>Off-Hook_Delay trigger</b>	<b>593</b>
<b>20</b>	<b>Channel_Setup_PRI trigger</b>	<b>639</b>
<b>21</b>	<b>Shared_Interoffice_Trunk trigger</b>	<b>651</b>
<b>22</b>	<b>Specific_Feature_Code trigger</b>	<b>671</b>
<b>23</b>	<b>Public_Feature_Code trigger</b>	<b>687</b>
<b>24</b>	<b>Office_Public_Feature_Code trigger</b>	<b>707</b>
<b>25</b>	<b>Customized_Dialing_Plan trigger</b>	<b>715</b>
<b>26.</b>	<b>Specified_Carrier trigger</b>	<b>745</b>
<b>27.</b>	<b>One_Plus_Prefix trigger</b>	<b>749</b>
<b>28</b>	<b>International trigger</b>	<b>753</b>
<b>29</b>	<b>Operator_Services trigger</b>	<b>757</b>
<b>30</b>	<b>Specific_Digit_String trigger</b>	<b>763</b>
<b>31</b>	<b>N11 trigger</b>	<b>803</b>
<b>32</b>	<b>Automatic_Flexible_Routing trigger</b>	<b>831</b>
<b>33</b>	<b>O_Called_Party_Busy trigger</b>	<b>865</b>

---

<b>34</b>	<b>O_No_Answer trigger</b>	<b>875</b>
<b>35</b>	<b>Termination_Attempt trigger</b>	<b>887</b>
<b>36</b>	<b>T_Busy trigger</b>	<b>911</b>
<b>37</b>	<b>T_No_Answer trigger</b>	<b>915</b>
<b>38</b>	<b>Term_Resource_Available trigger</b>	<b>919</b>
<b>39</b>	<b>Trunk Group Trigger</b>	<b>929</b>
<b>40</b>	<b>Datafilling for responses</b>	<b>955</b>
<b>41</b>	<b>Analyze_Route response</b>	<b>957</b>
<b>42</b>	<b>Collect_Information message</b>	<b>995</b>
<b>43</b>	<b>Continue response</b>	<b>1003</b>
<b>44</b>	<b>Create_Call</b>	<b>1011</b>
<b>45</b>	<b>Authorize_Termination response</b>	<b>1029</b>
<b>46</b>	<b>Forward_Call response</b>	<b>1033</b>
<b>47</b>	<b>Disconnect response</b>	<b>1039</b>
<b>48</b>	<b>Send_To_Resource response</b>	<b>1043</b>
<b>49</b>	<b>Cancel Resource response</b>	<b>1059</b>
<b>50.</b>	<b>Offer_Call response</b>	<b>1061</b>
<b>51</b>	<b>Datafilling for toll-free service</b>	<b>1071</b>
<b>52</b>	<b>Provisioning for post-response translations</b>	<b>1101</b>
<b>53</b>	<b>Options for offices supporting only 7-digit dialing for home numbering plan</b>	<b>1105</b>
<b>54</b>	<b>AIN O_CPB and O_NOA trigger screening</b>	<b>1113</b>

---

---

List of terms	1129
---------------	------

## Contents (Volume 3 of 3)

---

1	Overview of AIN response translations	45
2	AIN response translations for public agents	47
3	AIN simplified response translations for public agents	101
4	AIN response translations for private agents	151
5	AIN simplified response translations for private agents	193
6	Billing	227
7	AMA structures and modules	275
8	Network management	287
9	Resource monitoring	293
10	Information revision messages	313
11	Operational measurements for AIN	327
12	OM group EXT	341
13	OM group AIN	347
14	OM group AINICOFF	367
15	OM group AINICSUB	381
16	OM group AINNCR	397
17	OM group AINOGOFF	409
18	OM group AINOFSUB	425
19	OM group AINOFSB2	451

---

<b>20</b>	<b>OM group FTROM</b>	<b>457</b>
<b>21</b>	<b>AIN message tracing tool</b>	<b>463</b>
<b>22</b>	<b>Translation verification tool for AIN</b>	<b>483</b>
<b>23</b>	<b>TSTQUERY tool</b>	<b>635</b>
<b>24</b>	<b>AIN Scope Change tool (AINSCT)</b>	<b>663</b>
<b>25</b>	<b>Other CI commands for AIN</b>	<b>693</b>
<b>26</b>	<b>Trouble locating for AIN</b>	<b>733</b>
<b>27</b>	<b>Logs for AIN</b>	<b>749</b>
<b>28</b>	<b>AUD579</b>	<b>751</b>
<b>29</b>	<b>AIN300</b>	<b>753</b>
<b>30</b>	<b>AIN301</b>	<b>755</b>
<b>31</b>	<b>AIN302</b>	<b>757</b>
<b>32</b>	<b>AIN303</b>	<b>759</b>
<b>33</b>	<b>AIN304</b>	<b>761</b>
<b>34</b>	<b>AIN500</b>	<b>763</b>
<b>35</b>	<b>AIN501</b>	<b>765</b>
<b>36</b>	<b>AIN510</b>	<b>767</b>
<b>37</b>	<b>AIN511</b>	<b>769</b>
<b>38</b>	<b>AIN600</b>	<b>771</b>
<b>39</b>	<b>AIN601</b>	<b>775</b>
<b>40</b>	<b>AIN602</b>	<b>779</b>
<b>41</b>	<b>AIN610</b>	<b>783</b>

---

---

<b>42</b>	<b>AIN611</b>	<b>785</b>
<b>43</b>	<b>AIN612</b>	<b>787</b>
<b>44</b>	<b>AIN700</b>	<b>791</b>
<b>45</b>	<b>AUD650</b>	<b>813</b>
<b>46</b>	<b>AUD651</b>	<b>817</b>
<b>47</b>	<b>DFIL109</b>	<b>819</b>
<b>48</b>	<b>DFIL320</b>	<b>821</b>
<b>49</b>	<b>GAME100</b>	<b>823</b>
<b>50</b>	<b>Product support</b>	<b>827</b>
	<b>List of terms</b>	<b>829</b>
	<b>Bibliography</b>	<b>881</b>

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# About this document

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## When to use this document

This document is the primary source of information for the DMS-100 SSP AIN Service Enablers product.

The document is a response to a customer request that Nortel Networks consolidate descriptive information into one document. This document maintains the nature of the documents most frequently used in the past, especially those related to provisioning the AIN Service Enablers SSP for triggers, responses, and post-response translations.

## Electronically stored documents

For each electronically stored version of this document, there is one electronic master copy that is accessible to all approved users. All other copies, hard or soft, are considered uncontrolled.

## How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the next software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but released again in the same software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine the version of this document that applies to the software in your office and how documentation for your product is organized, check the release information in *Product Documentation Directory*, NTP 297-8991-001.

## Structure of this document

The document is structured as follows:

**Part 1: Introduction.** This part provides an overview of the AIN Service Enablers product, including the call model and agent support. This part also provides a product developments summary since NA007.

**Part 2 Functional Description:** This part provides a functional overview of:

- AIN Service Enablers
- the generic SSP procedures
- supported triggers and events
- the Send\_To\_Resource interface to the Intelligent Peripheral (STR-IP)
- SCP messaging
- use of AIN Service Enablers for toll-free service

**Part 3: Interactions.** This part lists and describes general trigger and event interactions, and AIN Service Enablers interactions with AIN Essentials, STR-IP, toll-free service, and Automatic Code Gapping (AGC).

**Part 4: Planning and Engineering.** This part describes AIN hardware requirements and outlines the technical specification such as standards, performance measurements, capacity allocation, messaging requirements, and error handling.

**Part 5: Provisioning.** This part contains the provisioning information that was formerly in the Provisioning Cookbook and the Response Translations Guide. These documents were incorporated into the same format for this document. The chapters in this section provide examples of trigger, response, and post-response translations datafill.

**Part 6: Billing.** This part describes Automatic Message Accounting (AMA) as it applies to AIN and illustrates the module codes.

**Part 7: Operations, administration and maintenance.** This part describes OMs and logs that are supported by AIN Service Enablers, and also describes the network management feature called Automatic Call Gapping. Several chapters in this part provide information on the command interface (CI) tools for this product.

**Part 8: Requirements and support.** This part presents the mapping of AIN Service Enablers to the Bellcore specifications, and describes some elements of product support.

**Part 9: Terms and references.** This part contains the terms and references for this document.

## Document scope

This document describes AIN Service Enablers in terms of Functional Sets (FS) and Functional Subsets (FSS).

### FS and FSS example

The following example illustrates how FS and FSS definitions help describe AIN Service Enablers functionality.

The Network\_Busy Event FS represents the function of a particular event, the Network\_Busy (NB) event, and consists of the following FSSs:

- NB Event Detection and Processing FSS, to let the SSP detect the event
- Network\_Busy Event Request Message and Processing FSS, to let the SSP generate a query message to the SCP
- Generic Analyze\_Route Message and Processing FSS, to let the SSP process one of the possible responses from the SCP
- Disconnect Message and Processing FSS, to let the SSP process another of the possible responses from the SCP

Notice that the NB Event Detection and Processing FSS is specific to the FS. It provides an integral unit of AIN functionality that enables a unique service-related feature.

Other FSSs, such as the Generic Analyze\_Route Message and Processing FSS and the Disconnect Message and Processing FSS, are used by other FSs.

### FS and FSS definitions

FSs and FSSs are groups of functionally associated requirements for the Service Switching Point (SSP), the SSP/SCP interface, and the SSP/IP interface. The elements of an FSS or FSSs contribute to a common purpose or action (functionality). FS and FSS definitions comply with Bellcore documents GR-1298, GR-1299 and GR-1129, as well as toll-free service document GR-2892.

An FSS possesses an integral unit of AIN functionality that either enables a unique service-related feature on an SSP, or provides a common base for other functional groups. Each FSS is a group of specifically related Bellcore requirements.

An FS consists of several FSSs and represents a stand-alone function, such as an event, or a building-block used to create a stand-alone function, such as a generic message processing.

## Document structure and organization

Major sections or chapter titles in this document comply with the FS that is being implemented. Subsections comply to the FSSs within that FS. Subsections can also contain additional information that is not included in the FSSs.

## Structure and organization example

In keeping with FS definitions, this document describes events in two chapters; one for the originating call model and one for the terminating call model.

Section 8.3 , “Network\_Busy event,” on page 383 describes the Network\_Busy event, which implements the Network\_Busy Event FS. Chapter 8 contains one section for each event it describes. Since each event implements an FS, the chapter has a section for each FS.

The Network\_Busy event section contains six subsections:

- Arming the Network\_Busy event
- NB event detection and processing
- Network\_Busy event request message and processing
- Analyze\_Route message and processing
- Disconnect message and processing
- Send\_To\_Resource message and processing

Each subsection represents either an FSS that makes up the FS, or additional information.

## References in this document

The following documents are referred to in this document:

- 297-1001-455, *Office Parameters Reference Manual (volumes 1, 2)*
- 297-1001-825, *DMS-100 Glossary*
- 297-1411-350, *E911 Emergency Service*
- 297-1421-010, *Subscriber Services Product Guide*
- 297-2051-104, *MDC SMDI Setup and Operation*
- 297-2401-360, *ISDN Primary Rate Interface Translation Guide*
- 297-5161-021, *Advanced Intelligent Network Essentials Service Implementation Guide*
- 297-5161-510, *AIN Release 0.1 SSP Complete Maintenance Guide*
- 297-8003-350, *North American DMS-100 Translations Guide*

- 297-8003-808, *North American DMS-100 Service Order Reference Manual*
- 297-8003-814, *North American DMS-100 Operational Measurements Reference Manual*
- 297-8003-840, *North American DMS-100 Log Reports Reference Manual*
- 297-8003-855, *NA DMS-100 Office Parameters Reference Manual*
- 297-8981-021, *DMS-100/200 LRN-LNP Service Implementation Guide*

## What precautionary messages mean

The types of precautionary messages used in Nortel Networks documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of precautionary messages follow.

**ATTENTION** Information needed to perform a task

### **ATTENTION**

When the unused DS-3 ports are not de-provisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

**CAUTION** Possibility of service interruption or degradation



### **CAUTION**

Possible loss of service  
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service is lost when you remove a card from the active unit.

**DANGER**

Possibility of personal injury



**DANGER**

**Risk of electrocution**

Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high voltage lines. Until the fuses are removed, the high voltage lines are active, and you risk being electrocuted.

## How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

### Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

### Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

### Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl\_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

### Responses

Responses correspond to the MAP display and are shown in a different way:

FP 3 Busy CTRL 0: Command request has been submitted.

FP 3 Busy CTRL 0: Command passed.

The following excerpt from a procedure shows the command syntax used in this document:

Busy the CTRL on the inactive plane by typing the following

**>BSY CTRL ctrl\_no**

and then press the Enter key.

*where*

ctrl\_no is the number of the CTRL (0 or 1)

*Example of a MAP response:*

```
FP 3 Busy CTRL 0: Command request has been submitted.  
FP 3 Busy CTRL 0: Command passed
```



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# 1 Overview of AIN response translations

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Service providers can implement AIN response translations using either the established (legacy) translations methods or simplified translations.

The purpose of the overall AIN response translation simplification effort is to reduce the high cost of ownership associated with response translation for the AIN platform. Simplification addresses both the public side of response translation and public network access support for private line and trunk agents.

The following points describe the information available for both legacy and simplified AIN response translations:

- Chapter 2: “AIN response translations for public agents” on page 47 describes legacy AIN response translations for agents that are either public lines or public trunks.
- Chapter 3: “AIN simplified response translations for public agents” on page 101 describes AIN simplified response translations for public agents.
- Chapter 4: “AIN response translations for private agents” on page 151 describes legacy AIN response translations for private trunk and line agents.
- Chapter 5: “AIN simplified response translations for private agents” on page 193 describes AIN simplified response translations for private trunk and line agents.



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## 2 AIN response translations for public agents

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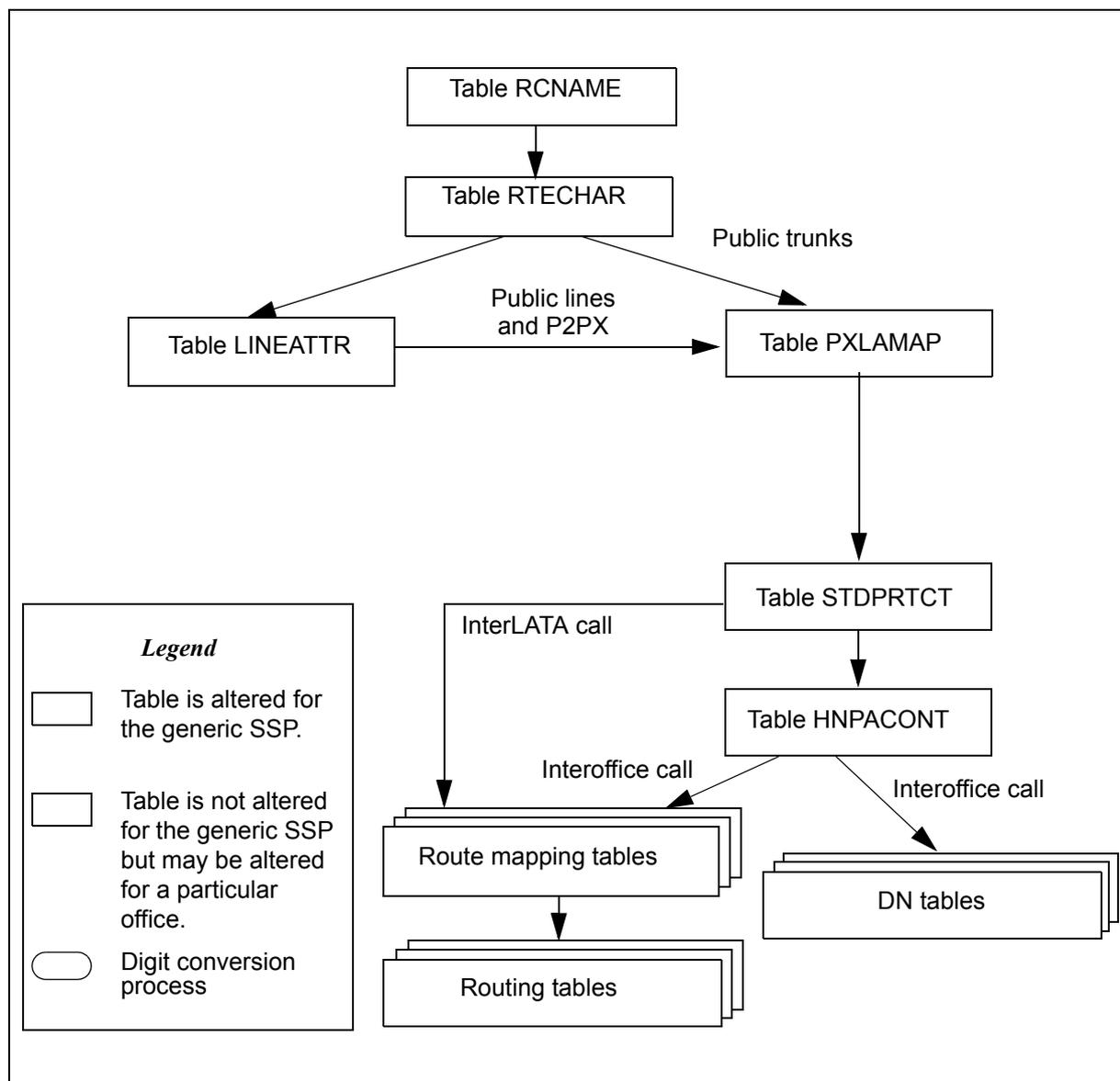
**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

This chapter describes the additional datafill required for AIN response translations when triggering agents are public lines or public trunks.

Figure 1 on page 48 outlines the different tables needed for AIN response translations for public agents and the relationship between these tables.

Figure 1 AIN table relationships for public agents - without simplification



The generic SSP referenced in Figure 1 has the following characteristics:

- The generic SSP is an equal-access end office (EAE0). An EAE0 was selected because it requires more data than tandem office. Tandem offices can also use this document because the data required is generally a subset of the EAE0 data.
- The generic SSP supports calls from a network access point (NAP); that is, the generic SSP supports incoming public trunks using EAMF signaling or Transit Network Selection (TNS) for Signaling System Number 7 (SS7) facilities. This implies that the datafill is present to support 0ZZXXX calls.

- The generic SSP does not have routing based on bearer capability (package NTX767 or NTX768). This assumption was made to simplify the datafill explanations. Bearer capability is detailed in sections on modification of generic SSP data.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls. If the AIN services do not support all call types, the data for the unsupported call type is not required.
- The generic SSP supports the private lines and private trunks. Though not explicitly stated, the office also supports public lines and trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only triggering at a Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports only one public dialing plan used in AIN response translation. The generic SSP does not span LATA boundaries.
- The generic SSP does not require class of service screening during AIN response translation.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers. The network supports 10-digit dialing from public trunks.
- As of NA003, the SSP supports a 7-digit subscriber number in the CalledPartyID returned by the SCP, as well as national and international numbers in the CalledPartyID.
- The generic SSP supports overriding line attributes when an agent triggers on SDS and receives an Analyze\_Route response message or uses default routing. Overriding line attributes are used during response processing in place of the originator's line attributes, allowing the customer to overcome the toll restrictions imposed by the originator's line attributes. See Section 30.2.3 "Step 3: Datafilling for line attribute response processing" on page 767 to provision overriding line attributes for a trigger item. See Section 30.3.4 "Step 4: Datafilling table PODPATTR (optional)" on page 788 to provision overriding line attributes for a trigger group.

## 2.1 Datafill public lines and public trunks without simplification

This section details the additional datafill required to support AIN response translations without activating the simplification feature.

### 2.1.1 Table RCNAME

Translation and routing of AIN responses is based on attributes found in the intelligent information elements (herein referred to as routing characteristics). Prior to translation, these attributes are mapped onto tables RCNAME and RTECHAR.

Table RCNAME (routing characteristic name) contains a list of names that are associated with a group of routing characteristics in Table RTECHAR.

Once an alphanumeric entry is placed into table RCNAME, that alphanumeric can be used as an RCNAME key in any of the following:

- translation mapping tables (such as table XLAMAP and table PXLAMAP)
- route mapping tables (such as subtable RTEMAP, table OFRTMAP, and table IBNMAP)
- Table RTECHAR

*Note:* Though there are other tables that contain RCNAME, they are not documented here because they are not relevant to AIN response processing.

The routing characteristic tables should be datafilled in the following order:

1. Table RCNAME
2. The translation mapping tables and the routing mapping tables
3. Table RTECHAR

**ATTENTION**

Table RTECHAR should be datafilled after table RCNAME, the translation mapping tables, and the routing mapping tables. Failure to datafill in the order listed above results in call failure for calls using previous routing characteristics that correspond to an old RCNAME.

### 2.1.1.1 Recommended datafill for table RCNAME

The required data for Table RCNAME for AIN response processing depends on the additional entries required for table RTECHAR as described in Section 2.1.2.1 “Routing characteristics” on page 51.

Table 1 shows the data that would be present for a generic SSP. Details on the associated routing characteristics are provided in the following chapter.

**Table 1 Generic SSP data**

Type of access	RCNAME
National call	NACALL
National carrier call	NACAR
International call	INCALL
International carrier call	INCAR

**Table 1 Generic SSP data (Continued)**

Subscriber Call	SUBCALL
Subscriber Carrier Call	SUBCAR
International operator	INOPER
International carrier operator	INCAROP
National carrier operator	NACAROP
Carrier operator	CAROP
Bell operating company operator call	BOCOP

**2.1.1.2 Modifying generic RCNAME data for office or AIN service**

Modification of table RCNAME depends on the modification of table RTECHAR. See Section 2.1.2.5 “Modifying generic RTECHAR data for an office or AIN service” on page 60.

**2.1.2 Table RTECHAR**

Table RTECHAR (routing characteristics) allows the DMS to translate and route on attributes found in intelligent information elements. The attributes (herein referred to as characteristics) that are applicable to AIN during response processing are described in this chapter.

This chapter describes table RTECHAR under the following headings:

- Routing characteristics
- Combining routing characteristics
- Recommended datafill to support AIN response processing

**2.1.2.1 Routing characteristics**

There are four routing characteristic types:

- Bearer capability
- Called party number
- Operator System Access
- Transit Network Selection

**2.1.2.1.1 Bearer capability** The bearer capability (BC) determines the type of transmission service accessible to the user. The BC of the call is not altered by AIN response processing. Thus, the BC routing characteristic is maintained.

Before querying the SCP, the BC is maintained while processing the SCP response. Table 2 contains examples of Bearer Capabilities that are supported for AIN.

**Table 2 Bearer capability characteristics**

Bearer capability (as per TR-NWT-001285)	Characteristic
Speech	(BC SPEECH)
3.1 kHz audio	(BC 3_1KHZ)
56kbps	(BC 56KDATA)
64kbps	(BC 64KDATA)

*Note:* Bearer capability is used as a routing characteristic only if the DMS has package NTX767 or NTX768.

**2.1.2.1.2 Called party number** The called party number (CDN) type indicates the intended use of the corresponding digits. AIN response processing currently supports the following CDN types:

- NIL indicates that either digits are not present or that the type of number is indeterministic for digits that are present.
- National (NA) indicates a number in either the 10-digit public format or N11 format.
- International (IN) indicates that the number is an international 7- to 12-digits.
- Subscriber (L) indicates that a number is in 7-digit public format.

*Note:* AIN response processing currently does not support a private network (NET) number or a private abbreviated (ABBR) number.

The CalledPartyID parameter must use the AINDigits parameter format. Parameter AINDigits contains the “nature of number” field. It is this field that is used to identify the CDN characteristic. See TR-NWT-001285, *Switching Control Point Interface*.

Table 3 illustrates the characteristics of the “nature of number” field.

**Table 3 Characteristics of the nature of number field**

Nature of number	Characteristic
National (significant) number/ National (significant) number, operator requested	(CDN NA)

**Table 3 Characteristics of the nature of number field (Continued)**

Nature of number	Characteristic
International number/ International number, operator requested	(CDN IN)
Subscriber number/ Subscriber number, operator requested	(CDN L)
No address present, operator requested	(CDN NIL)
No address present, cut-through call to carrier.	(CDN NIL)
<b>Note:</b> The 950+ Nature of Number Called Party numbers are 7-digits numbers datafilled as Subscriber CDN type. However, the call is routed as national number.	

**2.1.2.1.3 Operator system access** The operator system access (OSA) indicates the required operator by type of access:

- Public/Principle (PUBP) access is used to direct the call to an operator when there is no carrier parameter specified in the response. Note that the operator this call is being routed to may either be the local exchange carrier (LEC) operator or the carrier operator, depending on the nature of the call and the translation set up.
- Public/Principle (PUBP) access is used to direct the call to an operator when the carrier that will be used in translation is a LEC. Note that the operator this call is being routed to may either be the LEC operator or the carrier operator, depending on the nature of the call and the translation setup.
- Public/Alternate (PUBA) access is used to direct the call to a carrier operator when the carrier that will be used in translation is NOT an LEC.

**Note:** Private/Principle access, which is used to direct calls to a private network attendant system or a private branch exchange (PBX), is not supported by AIN.

AIN uses the CalledPartyID parameter (“nature of number” field) to indicate that an operator is required. The type of operator that is required depends on the following:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- If the carrier that will be used in the translation is not an LEC (identified by 0110), then the carrier operator is required.

- If the carrier that will be used in translation is an LEC, then the PUBP operator is required.
- If there was no carrier parameter presented in the response, then the PUBP operator is required.

Table 4 shows the characteristics of each type of operator.

**Table 4 Type of operator characteristics**

Type of operator	Characteristic
Operator (also referred to as the public/principle operator)	(OSA PUBP)
Carrier operator (also referred to as the public/alternate operator)	(OSA PUBA)

**2.1.2.1.4 Transit network selection** Transit network selection (TNS) is used in interswitch calls to indicate the type of facility that the user wants to select:

- Nationally-Standardized (NA) indicates a call in the public network using public carriers.
- User-Specified Network indicates a call in the private environment using private facilities.

*Note:* AIN supports only Nationally-Standardized (NA).

In AIN the presence of TNS is determined in the following manner:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- If the carrier that is used in the translations is not an LEC (identified by 0110), the transit network selection of NA is required.
- If the carrier that will be used in translation is an LEC, then the transit network selection is not required.
- If there is no carrier parameter specified in the response, then the transit network selection is not required.

Table 5 shows the type of network characteristics.

**Table 5 Type of network characteristics**

Type of network	Characteristic
Nationally Standardized	(TNS NA)

### 2.1.2.2 Combining routing characteristics

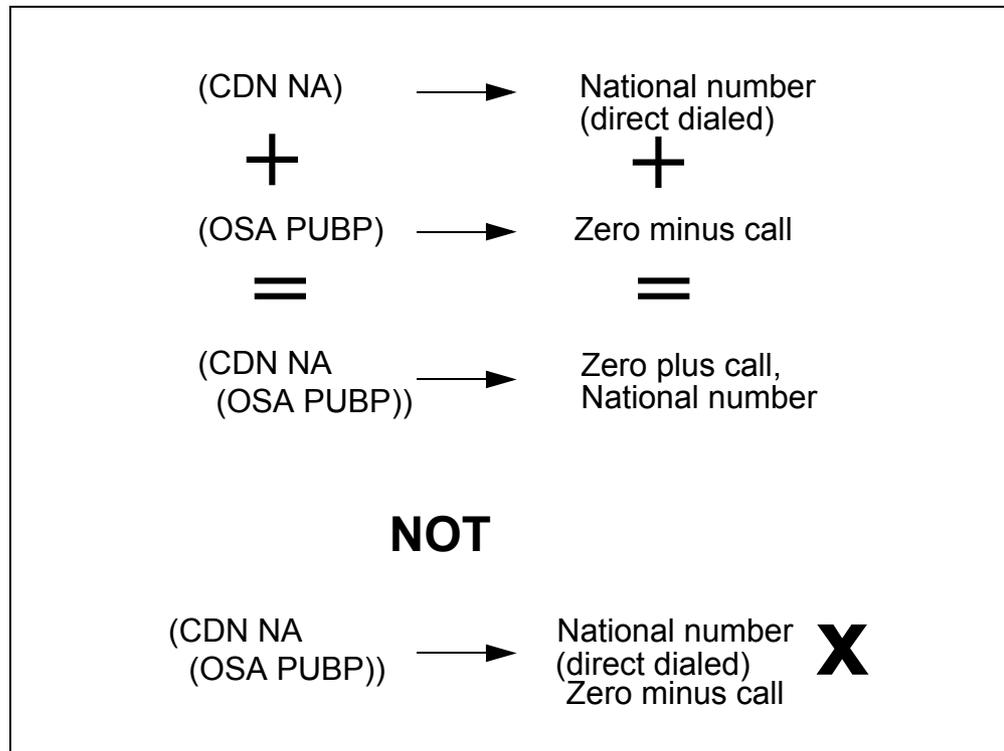
A call can have one or more routing characteristics. The combination of several characteristics usually introduces a different call type rather than individual characteristics.

For example,

- A called party number of NA with no other routing characteristics translates as a 10-digit national number.
- An operator system access with no other routing characteristics translates as a zero minus call. The operator enters the number the user wants to call.
- When a called party number is present in conjunction with an operator system access, the call translates as a zero plus call. The call routes to an operator, but the operator does not need to enter the number as it has already been provided.
- The call does not translate as a zero minus, national number because there is no such call type.

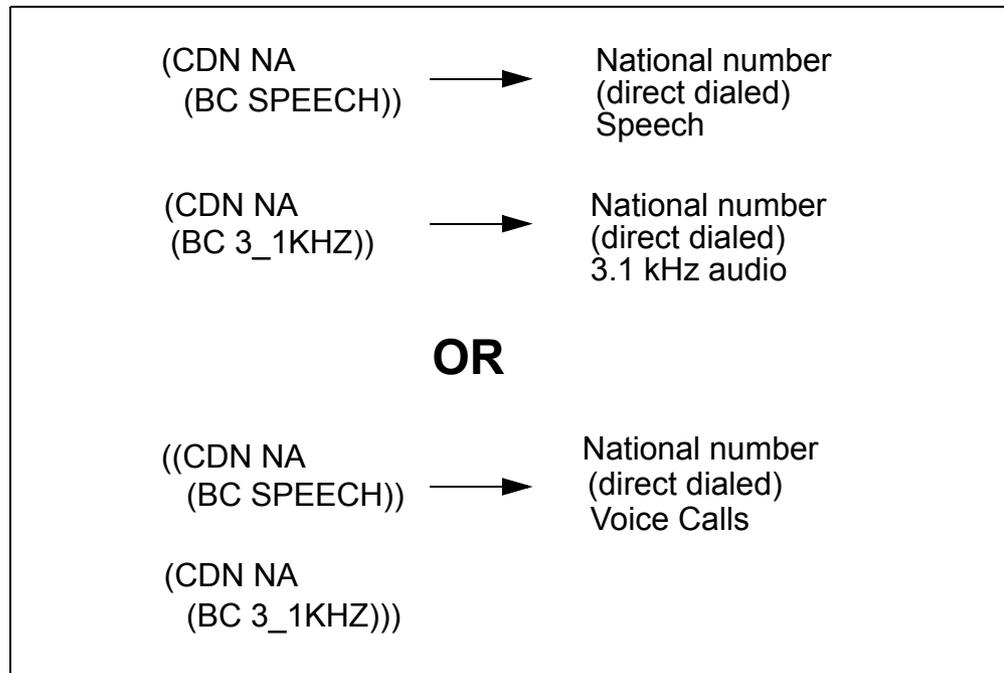
Figure 2 on page 56 illustrates this example.

**Figure 2 Example #1: combining routing characteristics**



In some instances, different combinations could be treated identically. It is up to the operating company to determine whether or not the differential factor identifies a new call type.

Figure 3 on page 57 shows another possible combination.

**Figure 3 Example #2: combining routing characteristics**

Though both methods are correct, the one shown in Figure 3 is preferred because it minimizes datafill in the tables that use RCNAME.

### 2.1.2.3 Routing characteristic combinations supported by AIN response processing

Table 6 on page 58 illustrates the possible routing characteristic combinations determined from an AIN response. Each bearer capability is compatible with all combinations and is not shown here for simplicity.

**Table 6 Combinations supported by AIN response processing**

Type of access	Routing characteristic combinations		
National call	(CDN NA)		
National carrier call	(CDN NA)		(TNS NA)
Subscriber call	(CDN L)		
Subscriber carrier call	(CDN L)		(TNS NA)
International call	(CDN IN)		
International carrier call	(CDN IN)		(TNS NA)
International operator	(CDN IN)	(OSA PUBP)	
International carrier operator	(CDN IN)	(OSA PUBA)	(TNS NA)
National carrier operator	(CDN NA)	(OSA PUBA)	(TNS NA)
Carrier operator		(OSA PUBA)	(TNS NA)
BOC operator—zero minus call		(OSA PUBP)	
BOC operator—zero plus national call	(CDN NA)	(OSA PUBP)	
BOC operator—zero plus subscriber call	(CDN L)	(OSA PUBP)	

### 2.1.2.4 Recommended datafill to support AIN response processing

Datafill is highly influenced by office and AIN services. This section first documents generic RTECHAR data and, then, documents how to modify the generic RTECHAR data based on office and AIN services.



#### **CAUTION**

##### **Incorrect translations possible**

Missing datafill in table RTECHAR can produce incorrect translations.

A tuple in table RTECHAR represents the routing characteristics returned in an Analyze\_Route, Forward\_Call, or Send\_To\_Resource to an IP and the routing characteristic (BC) that is signaled in from the originating agent and used during response translations. When a tuple does not exist in table RTECHAR with the same routing characteristics as those used during

response processing, an RCNAME cannot be derived and the response cannot be translated correctly. A DFIL log (DFIL320) is generated to indicate a missing tuple.

The generic RTECHAR datafill provided in the examples is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports calls from a network access point (NAP); that is, this SSP supports incoming public trunks using EAMF signaling or TNS for SS7 facilities.
- The generic SSP does not have routing services based on bearer capability (package NTX767 or NTX768).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

Table 7 on page 59 illustrates the RCNAMES and routing characteristic combinations for various access types.

**Table 7 Routing characteristic combinations by access type**

Type of access	RCNAME	Routing characteristic combination
National call	NACALL	(CDN NA \$) \$
National carrier call	NACAR	(CDN NA (TNS NA) \$) \$
Subscriber call	SUBCALL	(CDN L) \$)
Subscriber carrier call	SUBCAR	(CDN L (TNS NA) \$) \$
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PY\$) (OSA PUBP \$) \$

### 2.1.2.5 Modifying generic RTECHAR data for an office or AIN service

The generic RTECHAR data is a superset of AIN functionality with the exception of bearer capability. Some of the routing characteristic combinations can be further grouped to minimize the datafill in the associated mapping tables.

The following subsections describe in detail the modification of generic RTECHAR data depending on the office type or AIN service.

**2.1.2.5.1 Offices that do not support a NAP** For offices that do not support calls from a NAP, it is possible to group national calls (NACALL) and national carrier calls (NACAR). Similarly, international calls (INCALL) and international carrier calls (INCAR) could also be grouped.

Table 8 on page 60 shows routing characteristic combination for offices that do not support a NAP.

**Table 8 Combinations for non-NAP supporting offices**

Type of access	RCNAME	Routing characteristic combination
National call & national carrier call	NACALL	(CDN NA \$) (CDN NA (TNS NA) \$) \$
Subscriber call & Subscriber carrier call	SUBCALL	(CDN L \$) (CDN L (TNS NA) \$) \$
International call & international carrier call	INCALL	(CDN IN \$) (CDN IN (TNS NA) \$) \$

The datafill in Table 8 would replace the NACALL, NACAR, INCALL, and INCAR entries in generic RTECHAR data. All other entries specified in generic RTECHAR data remain unaltered.

**2.1.2.5.2 Offices that support bearer capability routing** If the office supports bearer capability routing (package NTX767 or NTX768), Bearer Capability must also be datafilled in Table RTECHAR. The following is an example of how a national call entry would expand based on Bearer Capability.

Table 9 illustrates some combinations for national call entries.

**Table 9 Combinations for national call entries**

Type of access	RCNAME	Routing characteristic combinations
National call (Voice call)	NACALL	(CDN NA \$) (CDN NA (BC 3_1KHZ) \$) \$

**Table 9 Combinations for national call entries**

Type of access	RCNAME	Routing characteristic combinations
National call (56 kbps)	NA56K	(CDN NA (BC 56KDATA) \$) \$
National call (64 kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

*Note:* The 56 kbps calls are separated from the 64 kbps calls because PTS trunks support 56 kbps calls but do not support 64 kbps calls. Each entry in generic RTECHAR would need to be expanded in a way similar to the national call.

**2.1.2.5.3 AIN services that do not allow international numbers**

If the AIN services do not allow an international number in the response, then the tuples in Table 10 on page 61 may be removed from generic RTECHAR datafill.

**Table 10 Combinations for services that do not support international numbers**

Type of access	RCNAME	Routing characteristics and combinations
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$

All other entries in generic RTECHAR data would remain unaltered.

**2.1.2.5.4 AIN services that do not allow operator numbers** If the AIN services do not allow operator calls in the response, the tuples in Table 11 may be removed from generic RTECHAR datafill.

**Table 11 Combinations for services that do not allow operator numbers**

Type of access	RCNAME	Routing characteristic combinations
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$

**Table 11 Combinations for services that do not allow operator numbers**

Type of access	RCNAME	Routing characteristic combinations
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PUBP) \$) (OSA PUBP \$) \$

All other entries in generic RTECHAR data would remain unaltered.

### 2.1.3 Digits used in AIN response translations

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing processing should take place to translate the digits and route the call. Depending on the nature of the response, digits to translate can have different format.

Table 12 on page 62 summarizes the digits used in response translations for various carrier and called party number combinations. The maximum number of digits supported is 18.

**Table 12 Digits used in AIN translation**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
No address present, operator requested	0D	XXX	10XXX	0XXX
National number, operator requested	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number, operator requested	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number, operator requested	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
National number	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number	7D	XXXX	101XXXX+(7)D	XXXX+(7)D
International number	7-15D	XXXX	101XXXX+(7-12)D	XXXX+(7-12)D
No address present, operator requested	0D	XXXX	101XXXX	XXXX

**Table 12 Digits used in AIN translation (Continued)**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number, operator requested	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number, operator requested	7D	XXXX	101XXXX+(7)D	
International number, operator requested	7-15D	XXXX	101XXXX+(7-12)D	
National number	10D	Not present	(10)D	
Subscriber number	7D	Not present	(7)D	
International number	7-15D	Not present	(7-12)D	
No address present, operator requested	0D	Not present	0	
National number, operator requested	10D	Not present	(10D)	
Subscriber number, operator requested	7D	Not present	(7)D	
International number, operator requested	7-15D	Not present	(7-12)D	
950+ Call	7D	Not present	(7)D	
Carrier cut-through	Not present	XXX	10XXX	N/A
Carrier cut-through	Not present	XXXX	101XXXX	N/A

#### 2.1.4 Table PXLAMAP

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing functions should take place to translate the digits and route the call. The digits coming into the SCP response are not in a format that can reuse the originator's public pretranslator (digits could be in 10D format whereas local dialing supports only 7D format, no international access code is prefixed for international

calls). Table PXLAMAP (pretranslator mapping) is used to map to new pretranslators into the public environment to allow the DMS to translate differently given a RCNAME and a pretranslator.

Table PXLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new pretranslator name.
- The POSITION selector provides access to a routing position if there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The PREFIX selector activates the Response Translations Simplification. Digit conversion process is used in conjunction with the XLA selector to specify an exception pretranslator.

*Note 1:* This selector can be used only if the Response Translations Simplification feature is active.

*Note 2:* If no tuple is present for an RCNAME and an STDPRTNM the Response Translations Simplification digit conversion process is activated by default.

AIN response processing supports only the XLA and PREFIX selectors.

#### **2.1.4.1 Recommended datafill to support AIN response processing**

The generic PXLAMAP datafill provided here is based on the following:

- The service switching point (SSP) is an equal-access end office (EAEO).
- This office supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The pretranslator names to be mapped are derived from the following:
  - All public line attributes for AIN supported agents
  - All public trunk groups for AIN supported agents
  - All private LINEATTRs that are used in AIN response processing, as defined in Section 4.1.6 “Table LINEATTR” on page 170.

The RCNAMES used in Table 13 are from the generic RTECHAR example. If an office modified table RTECHAR data, the following example should be modified accordingly.

**Table 13 Recommended PXLAMAP datafill**

RCNAME	XLANAME (Note)	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA ICOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA CAOP) \$
BOCOP	P621	(XLA NAOP) \$
NACALL	PTRK	(XLA NAT) \$
SUBCALL	PTRK	(XLA NAT) \$
NACAR	PTRK	(XLA NAPC) \$
SUBCAR	PTRK	(XLA NAPC) \$
INCALL	PTRK	(XLA INT) \$
INCAR	PTRK	(XLA NAPC) \$
<b>Note:</b> Assume P621 is the public translator for a public line and PTRK is the pretranslator for a public trunk.		

Though it is not necessary to separate the national and national carrier calls for lines, it is necessary to separate them for public trunks. Details of the new translator names and their function are provided in the next chapter.

The above entries for P621 need to be duplicated for each line pretranslator name. The new pretranslator names would be reused for each line pretranslator

because there is only one dialing plan. Similarly, duplication of the PTRK entries would be required for public trunks.

The new pretranslator names (for example, NAT) would need to be datafilled in table STDPRTCT before datafilling table PXLAMAP.

#### **2.1.4.2 Modifying generic table PXLAMAP data for office or AIN service**

If the AIN services do not support international or operator calls, the tuples with RCNAMEs reflecting these call types are required.

If the office supports only individual or customer group triggers, table PXLAMAP would require only the pretranslator for each subscribed agent. For office-based triggers, every pretranslator of each agent would be required.

**2.1.4.2.1 Datafill for multiple public dialing plans** If there is more than one dialing plan, additional new pretranslators would be required to support the additional dialing plans.

*Note:* The number of new pretranslators depends on several factors.

The example in Table 14 depicts sample datafill for two lines in different LATAs. Assume that the international carriers are the same for both LATAs.

**Table 14 Sample datafill for two lines in different LATAs**

<b>RCNAME</b>	<b>XLANAME</b>	<b>Data</b>
NACALL	P621	(XLA NAT) \$
NACALL	P622	(XLA NAT2) \$
NACAR	P621	(XLA NAT) \$
NACAR	P622	(XLA NAT2) \$
INCALL	P621	(XLA INT) \$
INCALL	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$

*Note:* The same pretranslator can be used for all international calls. Different pretranslators are used for national calls to differentiate among inter-LATA and intra-LATA calls.

**2.1.4.2.2 Mapping RCNAMEs to reuse pretranslators** The generic datafill shows seven new pretranslators for a line originator. Depending on the office, these can be further reduced to four pretranslators. The main difference is that the generic datafill allows a different carrier operator to be selected based on whether the 10XXX was dialed. If different carrier operators are not required, the generic datafill can be modified as in Table 15 for the a line originator.

**Table 15 Modified generic datafill**

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA IOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA NCOP) \$
BOCOP	P621	(XLA NCOP) \$
NACALL	PTRK	(XLA NAT) \$

### 2.1.5 Table STDPRTCT

Table STDPRTCT and its subtable STDPRT are the main tables used in translating different call types. In the past, different call types were identified through unique digits datafilled in a standard pretranslator.

#### 2.1.5.1 Recommended datafill for tables STDPRTCT and STDPRTCT.STDPRT

Any new pretranslator to map to in table PXLAMAP should be defined in table STDPRTCT before.

The generic STDPRTCT datafill provided in Table 16 on page 68 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The datafill used in the previous STDPRTCT example is used as reference material.

The RCNAMES used in Table 16 on page 68 are from the generic RTECHAR example. If an office modifies table RTECHAR data, the following example should be modified accordingly.

**Table 16 Generic STDPRTCT datafill**

STDPRTCT	
NAT	(1) (1234) ... (national calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national calls. 10488 10488 EA DD 5 T NA 488 Y OFRT 700 5 15 N
	9501542 9501542 FGB DD 0 C542 Y OFR3 542 7 7
	... other carriers ... (similar datafill as pretranslators for carrier, NA call)
	2 410 N DD 0 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	412 510 N DD 0 NA
	... other N11 ... ... Note that the standard North American entries are interleaved.
	The following entry is required for home area codes that do not require billing. 613 613 N NP 0 NA

**Table 16 Generic STDPRTCT datafill (Continued)**

<b>STDPRTCT</b>	
INT	(1) (123) .... (international calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 recursive translator for international calls. 10488 10488 EA DD 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (same datafill as pretranslators for carrier, IN call)
	The entry below is similar to the P621 translator for international direct dialed calls. 2 9 N DD 0 IN
NAOP	(1) (122) ... (national operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for national operator calls. 2 9 P OA 0 NA TOPS
IOP	(1) (12) ... (international operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for international operator calls. 2 9 P OA 0 IN TOPS
NCOP	(1) (127) ... (national carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national carrier operator call. 10488 10488 EA OA 5 T NA 488 Y OFRT 700 5 15 N
	... other carriers... (similar datafill as pretranslators for carrier)
CAOP	(1) (127) ... (operator carrier call—no address present)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for “00” carrier operator call. 10488 10488 EA OA 5 T NO 488 Y OFRT 700 5 5 N
	... other carriers ... (similar datafill as pretranslators for carrier, “00” operator call)

**Table 16 Generic STDPRTCT datafill (Continued)**

<b>STDPRTCT</b>	
ICOP	(1) (125) ... (international carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for international operator calls. 10488 10488 EA OA 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (similar datafill as pretranslators for carrier, IN operator call)
NAPC	(1) (125) ... (NAP or access carrier call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the PTRK 0ZZ XXX call. 488 488 ET DD 3 MCI Y OFRT 900 3 15
	... other carriers ... (similar datafill OZZ XXX call)

### 2.1.5.2 Modifying generic STDPRTCT data for an office or an AIN service

Most switches do not differentiate between carrier operator–no address and national carrier operator within STDPRTCT. If your office does not need to differentiate, only one of NCOP or CAOP needs to be datafilled.

Some AIN services may not need to support operator calls, and so the operator pretranslators may not be required.

### 2.1.6 10-digit dialing in the home numbering plan

Table HNPACONT and its subtable HNPACODE is probably the most straightforward to datafill for AIN response processing. In most instances, the tuples are already present.

The entry in table HNPACONT and subtable HNPACODE allows for 10-digit dialing of a number in the home numbering plan.

The generic HNPACONT datafill provided in Table 17 is based on the fact that the generic SSP does not currently support dialing of the home NPA.

**Table 17 Generic datafill example**

HNPACONT
----------

**Table 17 Generic datafill example**

613	984 1 (270) (1) (84) (0)
	Subtable HNPACODE
	613 613 HNPA 0

**CAUTION**

**Other table changes are required if 10-digit HNPA dialing is not supported in the network.**

The previous example allows for 10-digit translation of a home numbering plan number (HNPA). If other switches in the network cannot support 10-digit dialing, then additional entries in the routing table are required to delete the HNPA.

**2.1.7 Route mapping tables**

The route mapping tables direct the call to a new route based on the RCNAME and a route derived by translations.

**2.1.7.1 Recommended datafill to support AIN response processing**

Additional datafill for the route mapping tables is not required in the generic SSP because it already meets the following conditions:

- The generic SSP does not have routing based on bearer capability.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers.

However, when routing based on BC is supported or 10-digit outpulsing of home numbering plan numbers is not supported, datafill is required for an office or an AIN service.

**2.1.7.2 Routing based on bearer capability**

The route mapping tables are currently used for routing based on bearer capability. Normally, the route derived from translations causes the use of standard facilities, which support mainly voice communication. For some data calls, ISUP or ISDN facilities are required. Route mapping tables allow the DMS to map the standard facilities to the intelligent signaling facilities for data bearer capability.

As AIN uses other characteristics in conjunction with BC, the RCNAME that is derived from the response will probably not be the same as the RCNAME derived initially.

**2.1.7.2.1 Example 1** BC64K would be used initially; NA64K would be used to translate and route the AIN response, as in Table 18.

**Table 18 Datafill for example 1**

Type of access	RCNAME	Routing characteristic combinations
64kbps call	BC64K	(BC 64KDATA \$) \$
National Call (64kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

**2.1.7.2.2 Example 2** If BC64K is datafilled in a route mapping table to select intelligent signaling facilities, the same tuple would need to be datafilled for NA64K as in Table 19.

**Table 19 Datafill for example 2**

RCNAME	INDEX	NEW INDEX
BC64K	10	510
The following entry would be required:		
NA64K	10	510

### 2.1.7.3 Routing without 10-digit dialing of home numbering plan numbers

See Chapter 52:“Options for offices supporting only 7-digit dialing for home numbering plan” for details on the use of the RX selector.

## 2.2 Sample TRAVERs for public lines and trunks without simplification

This section contains TRAVER examples of various call types during AIN response translations without activating the Response Translations Simplification feature.

### 2.2.1 Additional data required for AIN response translations in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response translations in a generic SSP, as shown in Figure 4.

**Figure 4 Table RCNAME**

```

TABLE RCNAME
. NACALL
. NACAR
. SUBCALL
. SUBCAR
. INCALL
. INCAR
. INOPER
. INCAROP
. NACAROP
. SUBCAROP
. CAROP
. BOCOP

```

For the generic SSP, Figure 5 on page 73 shows the entries for table RTECHAR.

**Figure 5 Table RTECHAR**

```

TABLE RTECHAR
. NACALL (CDN NA $) $
. NACAR (CDN NA (TNS NA) $) $
. SUBCALL (CDN L $) $
. SUBCAR (CDN L (TNS NA) $ $)
. INCALL (CDN IN $) $
. INCAR (CDN IN (TNS NA) $) $
. INOPER (CDN IN (OSA PUBP) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $ $)
. CAROP (OSA PUBA (TNS NA) $) $
. BOCOP (CDN NA (OSA PUBP) $) (CDN L (OSA PUBP $) (CDN (OSA PUBP $) $)

```

If the SSP supports routing based on bearer capability, the above RTECHAR entries would be modified, as shown in Figure 6.

**Figure 6 Table RTECHAR modified**

```
TABLE RTECHAR
. NACALL (CDN NA $) (CDN NA (BC 3_1KHZ) $) $
. NACAR (CDN NA (TNS NA) $) (CDN NA (TNS NA) (BC 3_1KHZ) $) $
. SUBCALL (CDN L $) (CDN L (BC3_1KHZ) $) $
. SUBCAR (CDN L $) (CDN L BC3_1KHZ $) $
. INCALL (CDN IN $) (CDN IN (BC 3_1KHZ) $) $
. INCAR (CDN IN (TNS NA) $) (CDN IN (TNS NA) (BC 3_1KHZ) $) $
. INOPER (CDN IN (OSA PUBP) $) (CDN IN (OSA PUBP) (BC 3_1KHZ) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $)
(CDN IN (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $)
(CDN NA (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $)
(CDN L (OSA PUBA) (TNS NA) (BC3_1KHZ)) $
. CAROP (OSA PUBA (TNS NA) $) (OSA PUBA (TNS NA) (BC 3_1KHZ) $) $
. BOCOP (CDN NA (OSA PUBP) $) (OSA PUBP $) (CDN L (OSA PUBP) $)
(CDN NA (OSA PUBP) (BC 3_1KHZ) $) (CDN L (OSA PUBP) (BC3_1KHZ) $)
(OSA PUBP (BC 3_1KHZ) $)$
```

The entries shown in Figure 7 on page 74 map the RCNAME and pretranslator to obtain a new pretranslator based on call type.

**Figure 7 Table PXLAMAP**

```
TABLE PXLAMAP
. NACALL P722 ( XLA NAT)$
. NACALL P622 ( XLA NAT)$
. NACAR P722 ( XLA NAT)$
. SUBCALL P722 (XLA NAT)$
. SUBCALL P622 (XLA NAT)$
. SUBCAR P722 (XLA NAT)$
. INCALL P622 ( XLA INT)$
. INCAR P622 ( XLA INT)$
. INCAROP P622 ( XLA ICOP)$
. NACAROP P622 ( XLA NCOP)$
. SUBCAROP P622 (XLA NCOP)$
```

The new entries are pretranslators, as shown in Figure 8.

**Figure 8 Table STDPRTCT**

```

TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T NA MCI Y OFRT 963 3 15 N
. 613 613 N NP 0 NA
. 819 819 N DD 0 NA
INT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T IN MCI Y OFRT 700 5 25 Y
. 10488 10488 EA DD 5 T IN ITT Y OFRT 900 5 20 N
. 2 9 N DD 0 IN
INCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA OA 5 T IN MCI Y OFRT 700 6 25 Y
NCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

The entry shown in Figure 9 allows for 10-digit dialing of home numbering plan.

**Figure 9 Table HNPACONT**

```

TABLE HNPACONT
613 20 15 ( 0) ( 1) ( 0) ( 0) 0
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

### 2.2.2 National call - returned number on the same SSP

The command line assumes that the originator is an IBN line 613 622 1243 and the CalledPartyID = National Number 6136221243. TRAVER 10 provides a sample TRAVER output for a national call, when the returned number is on the same SSP.

**Figure 10 TRAVER for a national call (returned number on the same SSP)**

```

>traver 1 6136221243 n cdn na 6136221243 ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$) $
TABLE IBNLINES
HOST 01 0 00 02 0 DT STN IBN 6221243 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND

```

**Figure 10 TRAVER for a national call (returned number on the same SSP) (Continued)**

```

TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 314) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

**Figure 10 TRAYER for a national call (returned number on the same SSP) (Continued)**

```

. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 L HOST 01 0 00 02
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAYER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136221243          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO

```

**Figure 10 TRAVER for a national call (returned number on the same SSP) (Continued)**

```

2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.3 National call - returned number within the user HNP**

The command line assumes that the originator is an IBN line 6136221243 and the CalledPartyID = National Number 6134257320. TRAVER 11 provides a sample TRAVER output for a national call, when the returned number is in the user HNP.

**Figure 11 TRAVER for a national call (returned number in the user HNP)**

```

>traver 1 6136221243 n cdn na 6134257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$)$
TABLE IBNLINES
HOST 01 0 00 02 0 DT STN IBN 6221243 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
(NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $

```

**Figure 11 TRAVER for a national call (returned number in the user HNP) (Continued)**

```

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 314) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 425 425 HRTE 425
. SUBTABLE RTEMAR
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 425 N D OCTNI2DTCI08 3 722 N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTRTAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP

```

**Figure 11 TRAVER for a national call (returned number in the user HNP) (Continued)**

```

OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OCTNI2DTCI08          N CDN  E164  NA  7224257320 NIL_NSF  BC
SPEECH
Outpulsing on this route is modified by the following options:
(DNIS)

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 2.2.4 National call - returned number not within the user HNP

The command line assumes that the originator is an 1FR line 613 622 1243 and the CalledPartyID = National Number 8197226992. TRAVER 12 provides a sample TRAVER output for a national call, when the returned number is not in the user HNP.

**Figure 12 TRAVER for a national call (returned number not in the user HNP)**

```

>traver 1 6136221243 n cdn na 8197226992 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$) $
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P622_0 NSCR 613 P622 NONE N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS

```

**Figure 12 TRAVER for a national call (returned number not in the user HNP) (Continued)**

```

TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. CDNPUB P622 ( XLA NAT)$
TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 819 819 N DD 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 819 819 FRTE 150
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 150 N D OTMF2 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL

```

**Figure 12 TRAVER for a national call (returned number not in the user HNP) (Continued)**

```
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OTMF2                8197226992          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

### 2.2.5 Subscriber call

The command line assumes that the originator is an 1FR line 6136221243 and the CalledPartyID = Subscriber Number 4257320. TRAVER 13 provides a sample TRAVER output for a subscriber call.

**Figure 13 Sample TRAVER output for a subscriber call**

```
>traver 1 6136221243 n cdn 1 4257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P622_0 NSCR 613 P622 NONE N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P622 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
```

**Figure 13 Sample TRAVER output for a subscriber call (Continued)**

```

BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 42 510 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 09 09
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

```

**Figure 13 Sample TRAVER output for a subscriber call (Continued)**

```

1 LINE                6134257320                ST
TREATMENT ROUTES.   TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 2.2.6 National carrier call

The command line assumes that the originator is an IBN line 6137223211, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 14 provides a sample TRAVER output for a national carrier call.

**Figure 14 Sample TRAVER output for a national carrier call**

```

>traver 1 6137223211 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$)$
TABLE IBNLINES
HOST 01 0 00 01 0 DT STN IBN 7223211 COMKODAK 0 0 613 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
        (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)

```

**Figure 14 Sample TRAVER output for a national carrier call (Continued)**

```

(EA GTE Y 9) $ $) $ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 900 5 20 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 4 9 EA DD 0 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE

```

**Figure 14 Sample TRAVER output for a national carrier call (Continued)**

```

. 416 416 HNP A 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP A results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
EA:Local override does not apply to this call.
TABLE LATA XLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
900 CND EA INTNL SK 3
S D OGEAITT
N D ISUPOGITT 0 N N
CND ALWAYS SK 2
N D OGEAITT 15 D179 N
N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT 4162581234 ST
2 ISUPOGITT 4162581234 ST

```

**Figure 14 Sample TRAVER output for a national carrier call (Continued)**

```

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.7 International call**

The command line assumes that the originator is an 1FR line 6136212112 and the CalledPartyID = International 8527146926. TRAVER 15 provides a sample TRAVER output for and international call.

**Figure 15 Sample TRAVER output for an international call**

```

>traver 1 6136212112 n cdn in 8527146926 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. INTPUB P621 ( XLA INT)$
TABLE STDPRTCT
INT ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N DD 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATN

```

**Figure 15 Sample TRAVER output for an international call (Continued)**

```

TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  64 N D TOPOGNY 3 N N
    N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY                7146926          ST
2 TERMBX01               7146926          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 2.2.8 International carrier call

The command line assumes that the originator is an 1FR line 6136212112, the CalledPartyID = International 8527146926, and the PrimaryCarrierID = 0488. TRAVER 16 provides a sample TRAVER output for an international carrier call.

**Figure 16 Sample TRAVER output for an international carrier call**

```

>traver 1 6136212112 n cdn in 8527146926 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

```

**Figure 16 Sample TRAVER output for an international carrier call (Continued)**

```

TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. INTPUB P621 ( XLA INT)$
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. . N D ISUPITEAOG 0 D077 N
. . CND ALWAYS SK 1
. . N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. INTPUB PEAL ( XLA INT)$
TABLE STDPRTCT
INT ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N DD 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

**Figure 16 Sample TRAVER output for an international carrier call (Continued)**

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  64 N D TOPOGNY 3 N N
    N D TERMBX01 3 N N
EXIT TABLE OFRT
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

TREATMENT ROUTES.  TREATMENT IS: VACT
1 VCA
2 *OFLO
3 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 2.2.9 International operator

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = International, Operator Requested 8527146926. TRAVER 17 provides a sample TRAVER output for and international operator.

**Figure 17 Sample TRAVER output for an international operator**

```

>traver 1 6136212112 n cdn in 8527146926 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAPPUB (OSA PUBP $) (OSA PUBP (CDN NA)$) (OSA PUBP (CDN IN)$) ( BC
3_1KHZ (OSA PUBP)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE LINEATTR

```

**Figure 17** Sample TRAVER output for an international operator

```

0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. OSAPPUB P621 ( XLA IOP)$
TABLE STDPRTCT
IOP ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 8 9 N OA 0 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

```

**Figure 17** Sample TRAVER output for an international operator

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY                7146926                ST
2 TERMBX01              7146926                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.10 International carrier operator**

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = International, Operator Requested 8527146926, and the PrimaryCarrierID = 0488. TRAVER 18 provides a sample TRAVER output for an international carrier operator.

**Figure 18** Sample TRAVER output for an international carrier operator

```

>traver 1 6136212112 n cdn in 8527146926 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. OSAAPUB P621 ( XLA IOP)$
TABLE STDPRTCT

```

**Figure 18 Sample TRAVER output for an international carrier operator (Continued)**

```

IOP ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T IN ITT Y OFRT 64 6 25 Y
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 64 N D TOPOGNY 3 N N
. . N D TERMBX01 3 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 64 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY 7146926 ST

```

**Figure 18 Sample TRAVER output for an international carrier operator (Continued)**

```

2 TERMBX01                7146926                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.11 National carrier operator**

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National, Operator Requested 4162581234, and the PrimaryCarrierID = 0488. TRAVER 19 provides a sample TRAVER output for a national carrier operator.

**Figure 19 Sample TRAVER output for a national carrier operator**

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. OSAAPUB P621 ( XLA NCOP)$
TABLE STDPRTCT
NCOP ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

**Figure 19 Sample TRAVER output for a national carrier operator (Continued)**

```

. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . . 963 CND EA INTNL SK 3
. . . N D AINISUPITEAOG3 0 D077 N
. . . N D AINMFITEAOG 10 D077 N
. . . CND ALWAYS SK 2
. . . N D AINISUPITEAOG3 0 D177 N
. . . N D AINMFITEAOG 10 D177 N
. . . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL OA N OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. 416 416 T OFRT 609
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
609 N D TSPSTO 0 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO

```

**Figure 19 Sample TRAVER output for a national carrier operator (Continued)**

```

ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   963 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  963 CND EA INTNL SK 3
      N D AINISUPITEAOG3 0 D077 N
      N D AINMFITEAOG 10 D077 N
      CND ALWAYS SK 2
      N D AINISUPITEAOG3 0 D177 N
      N D AINMFITEAOG 10 D177 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 AINISUPITEAOG3          D0774162581234      ST
2 AINMFITEAOG            D077                  ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.12 Carrier operator**

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = Operator Requested 8527146926, and the PrimaryCarrierID = 0488. TRAVER 20 provides a sample TRAVER output for a carrier operator.

**Figure 20 Sample TRAVER output for a carrier operator**

```

>traver l 6136212112 n tns na cic 0488 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3

```

**Figure 20 Sample TRAVER output for a carrier operator (Continued)**

```

TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. OSAAPUB P621 ( XLA NCOP)$
TABLE STDPRTCT
NCOP ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 963 CND EA INTNL SK 3
. . N D AINISUPITEAOG3 0 D077 N
. . N D AINMFITEAOG 10 D077 N
. . CND ALWAYS SK 2
. . N D AINISUPITEAOG3 0 D177 N
. . N D AINMFITEAOG 10 D177 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
EA:Local override does not apply to this call.
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
TABLE EASAC
NOT ENOUGH DIGITS FOR SAC CALL

```

**Figure 20 Sample TRAVER output for a carrier operator (Continued)**

```

OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   963 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
 963 CND EA INTNL SK 3
     N D AINISUPITEAOG3 0 D077 N
     N D AINMFITEAOG 10 D077 N
     CND ALWAYS SK 2
     N D AINISUPITEAOG3 0 D177 N
     N D AINMFITEAOG 10 D177 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 AINISUPITEAOG3          D077          ST
2 AINMFITEAOG            D077          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**2.2.13 Bell operating company operator call**

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = no address present, operator requested. TRAVER 21 provides a sample TRAVER output for a Bell operating company, operator call.

**Figure 21 Sample TRAVER output for a Bell operating company operator call**

```

>traver 1 6136212112 n cdn na 0 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA

```

**Figure 21 Sample TRAVER output for a Bell operating company operator call (Continued)**

```

L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
ZERO MINUS POS FROM TABLE XLAPLAN
TABLE POSITION
TSPS T OFRT 106
TABLE OFRT
106 N D LNTOPSO 1 N N
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

POSITION ROUTES.  POSITION IS: TSPS
1 LNTOPSO          N          ST3P

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```



---

## 3 AIN simplified response translations for public agents

---

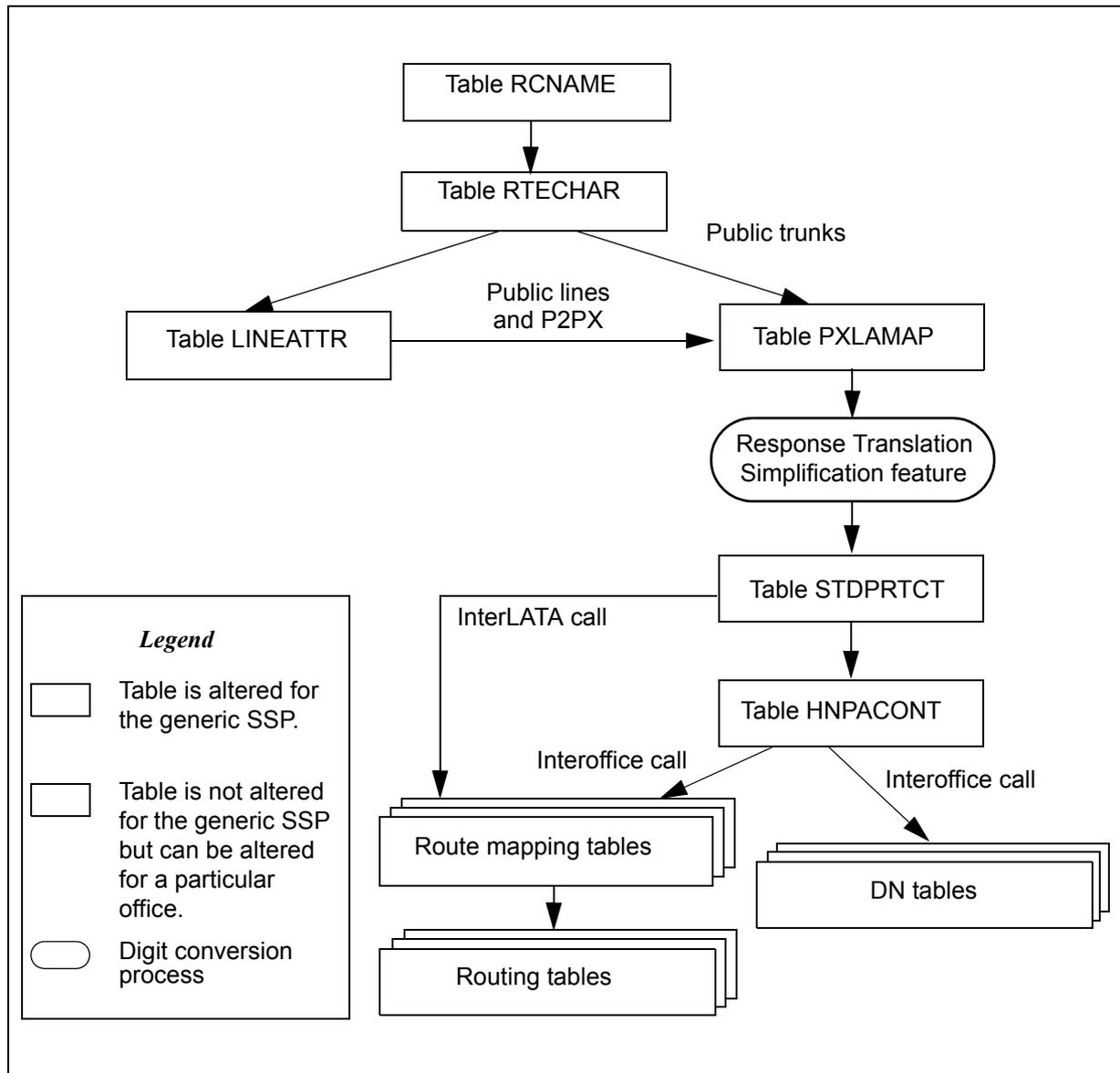
**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

The response translations simplification feature reduces the amount of datafill required to support AIN response translation. This feature is used to convert SCP Analyze Route or Forward Call response into a digit format that can reuse the triggering agent's translation datafill. See Table 42 on page 165.

Figure 22 outlines the different tables needed for AIN simplified response translations for public agents and the relationship between these tables.

Figure 22 AIN table relationships for public agent - with simplification



### 3.1 Table PXLAMAP

When the feature SOC AIN00026 is ON, AIN Response Translations Simplification is activated from table PXLAMAP under either of the following conditions:

- No tuple is present for the triggering agent's pretranslator and the RCNAME derived from the SCP response.
- A tuple is present for the triggering agent's pretranslator and the RCNAME derived from the SCP response, with the PREFIX selector present.

In the case where there is no tuple in PXLAMAP, the feature is invoked to convert the digits into a format that can reuse the datafill contained in the originator's pretranslator.

When the converted digits cannot reuse the datafill contained in the originator's pretranslator, a new pretranslator must be defined to handle this exception. This exception pretranslator can in most cases can be shared among several AIN response translations calltypes, minimizing the number of exception translators required. When the exception pretranslator is to be used, tuples must be defined in table PXLAMAP with the PREFIX and XLA selectors to direct call processing to use the exception pretranslator.

When response translations simplification is active, translations must be setup as described in Chapter 2: "AIN response translations for public agents" on page 47 . In particular, CDN L calls with OSA components do not trigger at the Operator\_Services trigger unless such translations are in place.

Travers for SCP responses with subscriberNumberOperatedRequested called party numbers and PRI Setup messages with a CDN L information element (when the response translations simplification feature is active) indicate that the number has undergone ISDN digit conversion, but there is no change in the digits.

## **3.2 Different digit streams produced by simplification**

The Response Translations Simplification feature works under the following assumptions:

- The digits in the response for national number and national number operator requested are 10D. When the response contains a subscriber number (7D), digits conversion is not performed.
- For incoming local or FGC trunks, it is assumed that the originating trunk's translations are based on 10D translation.

### **3.2.1 Triggering agents of type public line**

For all call types, except National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK), the conversion rules are based on existing dial plan conventions:

- "0" is prefixed for national number operator requested
- "011" are prefixed for international number
- "01" are prefixed for international number operator requested
- "10XXX" or "101XXXX" are prefixed for carrier access

Table 20 summarizes the digits used in translation after being converted by the Response Translations Simplification feature when the triggering agent is a public line and when call types are other than National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK).

**Table 20 Digits used in translation after simplification**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	10XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	101XXXX+01+(7-15)D	IN	PUBA	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator						

For National Direct Dial (where CDN=NA & TNS=UNK & OSA=UNK) and National Carrier Direct Dial (where CDN=NA & TNS=NA & OSA=UNK) SCP responses, the conversion of the 10D number into a format for dialing is based on existing translation datafill in tables LCASCRCN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the dialing plan of the originator.

When carrier ID is returned in the response, carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and carrier access digits are prefixed.

For the Local Exchange (LEC) carrier (carrier ID = 0110), no carrier access digits are prefixed. In this case, digit conversion is carried out as if no carrier ID were present.

The National Number conversion process is based on the following logic:

1. Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
  - Indexing HNPACODE with the 10D called number results in VCT HNPI.
  - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
2. Table LCASCRCN datafill is used to determine when a call is local or toll.
  - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
  - When NPA is not found but the NPA of the originator is equal to the NPA of the called number, a check occurs to see when the called NXX is datafilled in subtable LCASCR. When this event occurs, the call is local. This check handles the case where a 7D local dialing plan exists within an NPA, and the NPA is not datafilled in LCASCRCN.
  - Otherwise, it is toll.
3. Using PFXFOR10 of table LCASCRCN and the local/toll result from step 2, the called number is modified as follows:

Table 21 summarizes the digits used in translation after conversion when the triggering agent is a public line and for calltypes where (CDN=NA) or (CDN=NA & TNS=NA).

**Table 21 Translation digits after conversion - triggering agent is a public line**

Digits after step 1	Local or Toll	PFX FOR10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID=LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Local	N	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	N	Not Applicable	1+7D	10XXX+1+(7)D	101XXXX+1+(7)D
10D	Local	Y	N	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Local	Y	Y	7D	10XXX+7D	101XXXX+7D
10D	Local	N	Not Applicable	10D	10XXX+(10)D	101XXXX+(10)D
10D	Toll	Y	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Toll	N	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D

### 3.2.2 Optional removal of NPA where 1+10-digit dialing is mandatory

Where CDN=NA, AIN Response Translation Simplification removes the NPA of the called number if all of the following conditions are true:

- SOC AIN00026 is ON.
- The call is local.
- Option PFXFOR10 is TRUE in Table LCASRCRN or Table LCAINFO.
- The NPA of the SCP number is the same as the originator's NPA.

Removal of NPA represents a problem in areas where 1+10-digit dialing is mandatory for toll and local calls. The removal of NPA results in a 7-digit number, and the call is sent to treatment. This is an undesirable effect.

Removal of NPA is made optional by the addition of field STRIPNPA in Table LCASRCRN and Table LCAINFO. When STRIPNPA is set to N, the NPA

remains. When it is set to ‘Y’, the NPA is removed. This is illustrated in Table 22, and the applicable conditions are shown in bold:

**Table 22 Digit Conversion with STRIPNPA**

Digits after Step 1 (HNPA CONT)	Local/Toll	PFXFOR10	Originator's NPA = Called NPA	STRIPNPA	Result
7D	Local	Y	Not Applicable	Not Applicable	7D
7D	Local	N	Not Applicable	Not Applicable	7D
7D	Toll	Y	Not Applicable	Not Applicable	7D
7D	Toll	N	Not Applicable	Not Applicable	1+7D
10D	Local	Y	N	Not Applicable	1+10D
<b>10D</b>	<b>Local</b>	<b>Y</b>	<b>Y</b>	<b>N</b>	<b>10D</b>
<b>10D</b>	<b>Local</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>7D</b>
10D	Local	N	Not Applicable	Not Applicable	10D
10D	Toll	Y	Not Applicable	Not Applicable	1+10D
10D	Toll	N	Not Applicable	Not Applicable	1+10D

### 3.2.3 Triggering agents of type local or FGC trunk

For incoming local or FGC trunks, assume that the translations of the originating trunk are based on 10D translation.

*Note:* When the response results from a trigger that has overriding line attributes for post-query processing datafilled (LARP or PODPATTR), the conversion rules in Table 23 do not apply. Instead, the feature uses the conversion rules for public lines.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and digit conversion is carried out as specified in Table 23.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled similar to the case when no carrier ID is specified in the response.

Table 23 summarizes the digits used in translation after conversion by the Response Translations Simplification feature when the triggering agent is a local or FGC trunk.

**Table 23 Translation digits after simplification - local and FGC trunk triggering agents**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	Not present	10D	NA	NIL	NIL
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
National number	10D	0110	10D	NA	NIL	NA
National number	10D	0XXX	0XXX+10D	NA	NIL	NA
International number	7-15D	0XXX	0XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	0XXX+00	NIL	PUBA	NA
National number, operator requested	10D	0XXX	0XXX+0+10D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	0XXX+0+(7-15)D	IN	PUBA	NA
National number	10D	XXXX	XXXX+10D	NA	NIL	NA
International number	7-15D	XXXX	XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	XXXX00-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	XXXX+01+(7-15)D	IN	PUBA	NA

**Table 23 Translation digits after simplification - local and FGC trunk triggering agents (Contin-**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator						

### 3.2.4 Triggering agents of type FGD trunks

For triggering FGD trunks, conversion depends on whether a carrier ID is present in the response. When no carrier ID is present, the feature converts the called digits as specified in Table 26. When a carrier ID is present, a 0ZZ or 1NX code must be determined in order to reuse the FGD translations that are based on 0ZZ+(X)XXX or 1NX+(X)XXX. There are four options NSC0ZZ, NSC1NX, NSCOP0ZZ, and NSCOP1NX defined in tables OCCSRV and NSCDEFS. Table OCCSRV, indexed by carrier ID, provides these options on a per carrier basis. Whereas, table NSCDEFS provides these options as defaults. These options are used to datafill the 0ZZ or 1NX digits that are used by this feature to prefix in front of the carrier ID returned in the response.

When the carrier specified in the response has the 0ZZ/1NX option datafilled in table OCCSRV, digit conversion uses that information; otherwise, the 0ZZ/1NX option is taken from table NSCDEFS. In addition, the conversion depends on whether the incoming FGD trunk is based on a 3-digit CIC or a 4-digit CIC.

The operating telephone company (OTC) carrier is treated as a valid carrier ID and digit conversion is carried out as specified in Table 889.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled similar to the case when no carrier ID is specified in the response.

#### 3.2.4.1 Table OCCSRV

Table OCCSRV was introduced in NA09 to enhance the FGD digit conversion component of the AIN Response Translations Simplification feature. This table provides the capability to define 0ZZ/1NX codes on a per calltype basis for each carrier.

The key for table OCCSRV is carrier name. Four options can be datafilled for a given carrier:

- Option NSC0ZZ is created to specify the 0ZZ digits for National calls.
- Option NSCOP0ZZ is created to specify the 0ZZ digits for National Operator assist calls.

- Option NSC1NX is created to specify the 1NX digits for International calls.
- Option NSCOP1NX is created to specify the 1NX digits for International Operator assist calls.

### 3.2.4.2 Recommended datafill for table OCCSRV to support simplification

Table 24 provides an example of table OCCSRV datafill.

*Note:* NSC0ZZ, NSCOP0ZZ, NSC1NX and NSCOP1NX must be datafilled before activation of response translations simplification for trunks using FGD signalling.

**Table 24 Example of table OCCSRV datafill**

KEY	OPTIONS			
ATT	(NSC0ZZ 088)	(NSCOP0ZZ 044)	(NSC1NX 155)	(NSCOP1NX 166) \$

### 3.2.4.3 Table NSCDEFS

The following options in Table NSCDEFS are used by the AIN Response Translations Simplification feature to determine the 0ZZ/1NX codes, when the options are not datafilled for the carrier ID in table OCCSRV:

- NSCOP0ZZ - to specify the 0ZZ digits for National Operator assist calls.
- NSCOP1NX - to specify the 1NX digits for International Operator assist calls.
- NSC0ZZ - to specify the 0ZZ digits for National calls.
- NSC1NX- to specify the 1NX digits for International calls.

### 3.2.4.4 Recommended datafill for table NSCDEFS

Table 25 provides an example of table NSCDEFS datafill.

*Note:* NSC0ZZ, NSCOP0ZZ, NSC1NX and NSCOP1NX must be datafilled before activation of response translations simplification for trunks using FGD signalling.

**Table 25 Example of table NSCDEFS datafill**

NSC CODE	TIME OUT	OPTIONS			
AIN	3	(NSC0ZZ 077)	(NSCOP0ZZ 033)	(NSC1NX 144)	(NSCOP1NX 177) \$

### 3.2.4.5 Digits used in translation when triggering agents are FGD trunks

Table 26 summarizes the digits used in translation after digit conversion by the AIN Response Translations Simplification feature when the originating agent is an FGD trunk based on a 4-digit CIC. The four options NSC0ZZ, NSC1NX, NSCOP0ZZ, and NSCOP1NX are the ones defined in Table 24 on page 110.

**Note:** When the response results from a trigger that has overriding line attributes for post-query processing datafilled (LARP or PODPATTR), the conversion rules in Table 26 do not apply. Instead, the feature uses the conversion rules for public lines.

**Table 26 Digits produced for FGD trunk triggering agents based on 4-digit CIC**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	0110	1+10D	NA	NIL	NA
National number	10D	0XXX	0880XXX+10D	NA	NIL	NA
International number	7-15D	0XXX	1550XXX+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	0440XXX	NIL	PUBA	NA
National number, operator requested	10D	0XXX	0440XXX+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	1660XXX+(7-15)D	IN	PUBA	NA
National number	10D	XXXX	088XXXX+10D	NA	NIL	NA
International number	7-15D	XXXX	155XXXX+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	044XXXX	NIL	PUBA	NA
National number, operator requested	10D	XXXX	044XXXX+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	166XXXX+(7-15)D	IN	PUBA	NA
Legend IN -- International NA - National NIL -Not present PUBA - Carrier operator PUBP - Public operator						

Table 27 summarizes the digits used in translation after conversion by the Response Translations Simplification feature when the originating agent is an FGD trunk and no carrier ID is specified in the response.

**Table 27 Digits produced for FGD trunk agents - no carrier specified in the response**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations	CDN	OSA	TNS
National number	10D	Not present	1+10D	NA	NIL	NIL
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
Legend IN -- International NA - National NIL -Not present PUBA - Carrier operator PUBP - Public operator						

**Note:** For these calltypes it is recommended that a exception pretranslator be defined. Mapping tuples with the PREFIX and XLA selectors in table PXLAMAP must be added for the above calltypes in order to direct response translations to the exception pretranslator.

### 3.2.5 Table STDPRTCT

The digit streams produced by the AIN Response Translations Simplification feature cannot reuse the originator's translation datafill in all the cases. New pretranslators must be defined to handle the exceptions. The following subsections describe the exceptions for the different types of triggering agents involved with the Response Translations Simplification feature.

#### 3.2.5.1 Triggering agents of type public lines

For triggering agents of type public lines, the digit streams produced by the AIN Response Translations Simplification feature for the different routing characteristics can directly reuse the originator's pretranslator in most cases. In these cases no mapping tuples are required for the triggering public lines in table PXLAMAP.

### 3.2.5.2 Triggering agents of type local or FGC trunks

For incoming local or FGC trunks, it is assumed that the originating trunk's translations are based on 10D translation. When 7D translation is used, a new pretranslator that handles 10D translation for public trunks must be defined. This new pretranslator is then associated with the different call types according to the originator's trunk pretranslator in table PXLAMAP.

In the case where 10D translation is used, the datafill required to support all of the call types defined in Table 23 (except National Number without Carrier ID) usually do not exist in the translation datafill for local trunks. When the National Number without Carrier ID call type can reuse the trunk translation datafill, then all other call types can be datafilled in a single exception pretranslator. In this case, table PXLAMAP would have tuples corresponding to the RCNAMES (other than NACALL) with PREFIX and XLA selectors to direct response translations to use the exception pretranslator.

The tuples described in Table 28 are used to handle the exceptions for local or FGC trunk originating agents when the Response Translations Simplification feature is active.

**Table 28 Recommended PXLAMAP datafill for local or FGC trunks**

NACAR	PTRK	(XLA EXP1) \$	PREFIX
INCALL	PTRK	(XLA EXP1) \$	PREFIX
INCAR	PTRK	(XLA EXP1) \$	PREFIX
Note: Assume PTRK is the pretranslator for a public trunk.			

Table 29 on page 113 defines the new pretranslator that handles exceptions produced by the Response Translations Simplification feature when the originating agent is a local or FGC trunk.

**Table 29 New pretranslator for exceptions for local or FGC trunks**

EXP1	(1) (1234) ... Pretranslator to handle exception cases produced by Response Translations Simplification feature
	Subtable STDPRT
	448 448 ET DD 3 MCI Y OFRT 900 3 3
	... other carriers ... (similar datafill as pretranslators for carriers)

When the National Number without Carrier ID call type cannot reuse the trunk translation datafill, then two exception pretranslators must be datafilled for:

- non-carrier call types
- carrier call types

This is because the carrier digit pattern XXX cannot exist with 10D in the same pretranslator. Datafilling exception pretranslators allows grouping of local or FGC trunks to use one set of response translations datafill.

### 3.2.5.3 Triggering agents of type FGD trunks

When a carrier ID is returned from the SCP response, the AIN Response Translations Simplification feature needs to determine a 0ZZ or 1NX code in order to reuse the FGD translation datafill in table STDPRTCT.

Based on the calltype of the response National, National Operator, International, International Operator the corresponding 0ZZ/1NX option is searched for. Table OCCSRV is check first to see when a NSC/1NX option is datafilled for the calltype for the carrier ID. When a tuple is found for the carrier ID, and it contains the desired 0ZZ/1NX option for the calltype, the 0ZZ/1NX digits specified in the option are used by the feature.

When nothing is found in table OCCSRV, the 0ZZ/1NX digits are obtained from table NSCDEFS.

Table 30 on page 114 describes an example of datafill in the pretranslator of the triggering trunk that are reused for response translations with the prefixed 0ZZ/1NX digits.

**Table 30 Additional datafill for new options NSCOP0ZZ and NSCOP1NX in table NSCDEFS**

PTRK	(1) (1234) ... Pretranslator for tandem or NAP call
	Subtable STDPRT
	088488 088488 ET DD 6 MCI Y OFRT 900 6 6
	... other carriers ...
	044448 044448 ET OA MCI Y OFRT 900 6 6
	... other carriers ...
	166448 166488 ET IN MCI OFRT 901 6 6
	... other carriers ...
	2 9 N DD 1 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	... other N11 ...

Responses without Carrier ID or with LEC carrier cannot be translated by the same translator containing FGD 0ZZXXX or 1NXXXX type translation datafill. 1+10D, 0+10D, or 011+(7-15)D is likely to conflict with 0ZZXXX and 1NXXXX datafill. Use an exception pretranslator for translation of responses with no Carrier ID or with LEC carrier. Because the digits produced

are in the same format as the digits produced when triggering agent is a public line, the exception pretranslator is similar to a line pretranslator.

### 3.2.6 PODPATTR Interactions with response translation simplification

When a line or trunk agent encounters an SDS trigger with a corresponding entry in table PODPATTR and the SCP returns an Analyze\_Route response with an InterLATA toll CalledPartyID and no carrier is present, the trigger's PIC (datafilled in PODPATTR) is used to route the call. When the trigger has no PIC, the office default carrier is used. In the previous scenarios, digit conversion is performed before a carrier is determined by translations. After a carrier has been determined, the original RCNAME along with the trigger's pretranslator from PODPATTR is used to index table PXLAMAP to derive a new pretranslator. When a tuple is not found, the trigger's pretranslator is used. Since digit conversion is performed before a carrier is determined, the result of digit conversion is 1+10D in accordance with requirements for response translation simplification.

## 3.3 Sample TRAVERs for the generic SSP

This section contains TRAVER examples of AIN response processing with various call types when the Response Translations Simplification feature is activated.

### 3.3.1 Additional data required for AIN response processing in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response processing in a generic SSP. Figure 23 on page 115 shows the entries for table RCNAME.

**Figure 23 Table RCNAME**

TABLE RCNAME
. IXCDDNA
. IXCDDIN
. IXCOANA
. IXCOAIN
. LECNA
. LECIN
. LECOA
. LECOANA
. LECOAIN
. SUBCAROP
. IXCOA

For the generic SSP, Figure 24 shows the entries for table RTECHAR.

**Figure 24 Table RTECHAR**

```

TABLE RTECHAR
IXCDDNA (CDN NA (TNS NA) $) (BC 3_1KHZ (CDN NA) (TNS NA) $)$
IXCDDIN(CDN IN (TNS NA) $) (BC 3_1KHZ (CDN IN) (TNS NA) $)$
IXCOANA(OSA PUBA (CDN NA) (TNS NA) $)
      (BC 3_1KHZ (OSA PUBA) (CDN NA) (TNS NA) $)$
IXCOAIN(OSA PUBA (CDN IN) (TNS NA) $)
      (BC 3_1KHZ (OSA PUBA) (CDN IN) (TNS NA) $)$
LECNA(CDN NA $) (BC 3_1KHZ (CDN NA) $)$
LECIN(CDN IN $) (BC 3_1KHZ (CDN IN) $)$
LECOA(OSA PUBP $) (BC 3_1KHZ (OSA PUBP) $)$
LECOANA(OSA PUBP (CDN NA) $) (BC 3_1KHZ (OSA PUBP) (CDN NA) $)$
LECOAIN(OSA PUBP (CDN IN) $) (BC 3_1KHZ (OSA PUBP) (CDN IN) $)$
IXCOA(OSA PUBA (TNS NA) $) (BC 3_1KHZ (OSA PUBA) (TNS NA) $)$

```

Figure 25 shows the entries for table PXLAMAP for triggering agents that require exception pretranslators. The triggering agents that do not require exception pretranslators, do not require any datafill in table PXLAMAP.

**Figure 25 Table PXLAMAP**

```

TABLE PXLAMAP
. IXCDDNA PUB ( XLA PUBXCAR) ( PREFIX )$
. LECIN PUB ( XLA PBXNOCAR) ( PREFIX )$
. LECOAIN PUB ( XLA PBXNOCAR) ( PREFIX )$
. IXCOAIN PUB ( XLA PUBXCAR) ( PREFIX )$
. IXCOANA PUB ( XLA PUBXCAR) ( PREFIX )$
. IXCOA PUB ( XLA PUBXCAR) ( PREFIX )$

```

Figure 26 shows the new pretranslator used in the TRAVER examples described in this chapter.

**Figure 26 Table STDPRTCT**

```

TABLE STDPRTCT
PUBXCAR ( 1) ( 0) 1
. SUBTABLE STDPRT
. 52204 52209 ET NP 4 SPR Y OFRT 898 5 24
.
PBXNOCAR ( 1) ( 0) 2
. SUBTABLE STDPRT
. 14 179776 N DD 1 NA
.

```

Figure 27 shows the entries for table OCCSRV.

**Figure 27 Table OCCSRV**

```
TABLE OCCSRV
ATT (NSCOZZ 088) (NSCOP0ZZ 099) (NSC1NX 144) (NSC1NX 166)
```

Figure 28 shows the entries for table NSCDEFS.

**Figure 28 Table NSCDEFS**

```
TABLE NSCDEFS
AIN 3 (NSCOZZ 077) (NSCOP0ZZ 033) (NSC1NX 144) (NSC1NX 177)
```

### 3.3.2 National calls

This section discusses the following four national call scenarios:

- National call where conversion produces 10D number
- National call where conversion produces 1+10D number
- National call where conversion produces 7D number
- National call where conversion produces 1+7D number

#### 3.3.2.1 National call where conversion produces 10D number

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 4164801234. TRAVER 29 provides a sample TRAVER output for a national call, where a conversion produces a 10D number.

**Figure 29 Sample TRAVER output for a national call (convert to 10D number)**

```
>traver l 6136212112 n cdn na 6137223211 aires r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
```

**Figure 29 Sample TRAVER output for a national call (convert to 10D number) (Continued)**

```
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6137223211
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 722 722 DN 613 722
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 3211 L HOST 01 0 00 01
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 722 722
TABLE PFXTREAT
```

**Figure 29 Sample TRAVER output for a national call (convert to 10D number) (Continued)**

```

OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6137223211          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.2.2 National call where conversion produces 1+10D numbers**

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 4164801234. TRAVER 30 provides a sample output for a national call, where a conversion produces 1+10D number.

**Figure 30 Sample TRAVER output for a national call (convert to 1+10D number)**

```

>traver l 6136212112 n cdn na 4164801234 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND

```

**Figure 30 Sample TRAVER output for a national call (convert to 1+10D number) (Continued)**

```
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 14164801234
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 14 16 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 480 480 LRTE 480
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 480 S D ISUPTAC40_30
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
```

**Figure 30 Sample TRAVER output for a national call (convert to 1+10D number) (Continued)**

```

. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPTAC40_30          4164801234          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.2.3 National call where conversion produces 7D number**

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 6136212119. TRAVER 31 provides a sample TRAVER output for a national call, where a conversion produces a 7D number.

**Figure 31 Sample TRAVER output for a national call (convert to 7D number)**

```

>traver 1 6136212112 n cdn na 6136212119 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND

```

**Figure 31 Sample TRAVER output for a national call (convert to 7D number) (Continued)**

```
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6212119
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 2119 P HOST 01 0 19 19 R4
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 621 2119
(PUBLIC (NONUNIQUE ) )$)$ $
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
```

**Figure 31 Sample TRAVER output for a national call (convert to 7D number) (Continued)**

```

. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136212119          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.2.4 National call where conversion produces 1+7D number**

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 6134257320. TRAVER 32 provides a sample TRAVER output for a national call, where a conversion results in a 1+7D number.

**Figure 32 Sample TRAVER output for a national call (convert to 1+7D number)**

```

>traver 1 6136212112 n cdn na 6134257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR

```

**Figure 32 Sample TRAVER output for a national call (convert to 1+7D number) (Continued)**

```
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 14257320
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 14 16 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 09 09
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
TABLE LATAKLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
```

**Figure 32 Sample TRAVER output for a national call (convert to 1+7D number) (Continued)**

```

OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6134257320          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.3 National carrier call

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National Number 4162581234, and the PrimaryCarrier = 0488. TRAVER 33 provides a sample TRAVER output for a national carrier call.

**Figure 33 Sample TRAVER output for a national carrier call**

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND

```

**Figure 33 Sample TRAVER output for a national carrier call (Continued)**

```
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 1048814162581234
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. .   N D ISUPITEAOG 0 D077 N
. .   CND ALWAYS SK 1
. .   N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PEAL ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
```

**Figure 33 Sample TRAVER output for a national carrier call (Continued)**

```

.      AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
EA:Local override does not apply to this call.
TABLE LATAXLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route  OFRT  907 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  907 CND EA INTNL SK 2
    N D ISUPITEAOG 0 D077 N
    CND ALWAYS SK 1
    N D ISUPITEAOG 0 D123 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITEAOG          D0774162581234      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.4 International call

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID = National Number 8527146926. TRAVER 34 provides a sample TRAVER output for an international call.

**Figure 34 Sample TRAVER output for an international call**

```
>traver 1 6136212112 n cdn in 8527146926 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. INTPUB (CDN IN $) (CDN IN (TNS NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPTS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 0118527146926
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 011 011 N DD 3 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
```

**Figure 34 Sample TRAVER output for an international call (Continued)**

```

EXIT TABLE OFRT
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPOGNY                7146926          ST
2 TERMBX01               7146926          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.5 International operator

The command line assumes that the originator is a 1FR line 6136212112 and the CalledPartyID=International, Operator Requested 8527146926. TRAVER 35 provides a sample TRAVER output for an international operator.

**Figure 35 Sample TRAVER output for an international operator**

```

>traver l 6136212112 n cdn in 8527146926 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAPPUB (OSA PUBP $) (OSA PUBP (CDN NA)$) (OSA PUBP (CDN IN)$) ( BC
3_1KHZ (OSA PUBP)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA

```

**Figure 35 Sample TRAVER output for an international operator (Continued)**

```
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 018527146926
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 018 018 T OA 0 OFRT 64 1 16 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. .   64 N D TOPOGNY 3 N N
. .   N D TERMBX01 3 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LENFEAT
HOST 01 0 10 10 S PIC PIC ITT Y
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
```

**Figure 35 Sample TRAVER output for an international operator (Continued)**

```

1 TOPOGNY                527146926          ST
2 TERMBX01               527146926          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.6 International carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = International, Operator Requested 8527146926, and the PrimaryCarrier = 5220. TRAVER 36 provides a sample TRAVER output for an international carrier operator.

**Figure 36 Sample TRAVER output for an international carrier operator**

```

>traver 1 6136212112 n cdn in 8527146926 tns na cic 5220 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 1015220018527146926
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE

```

**Figure 36 Sample TRAVER output for an international carrier operator (Continued)**

```
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1015 1015 F 0 STUTTER_DIALTONE EAP1
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1015220 1015220 EA DD 7 P PEA6 GTE Y OFRT 898 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 898 CND EA INTNL SK 2
. . N D OGEAITT 6 N N
. . CND ALWAYS SK 1
. . N D OGEAITT 15 D188 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PEA6 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 018 019 EA DD 2 T IN ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
N D TERMBX01 3 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
```

**Figure 36 Sample TRAVER output for an international carrier operator (Continued)**

```

TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   898 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
 898 CND EA INTNL SK 2
      N D OGEAITT 6 N N
      CND ALWAYS SK 1
      N D OGEAITT 15 D188 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT                D188                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.7 National carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = National, Operator Requested 6134257320, and the PrimaryCarrier = 0488. TRAVER 37 provides a sample TRAVER output for a national carrier operator.

**Figure 37 Sample TRAVER output for a national carrier operator**

```

>traver 1 6136212112 n cdn na 4162581234 tns na cic 0488 osa puba ainres
r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3

```

**Figure 37 Sample TRAVER output for a national carrier operator (Continued)**

```

TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 1048804162581234
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. .   N D ISUPITEAOG 0 D077 N
. .   CND ALWAYS SK 1
. .   N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PEAL ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 04 05 EA OA 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N

```

**Figure 37 Sample TRAVER output for a national carrier operator (Continued)**

```

TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D AIN_DUMMY_TRK 0 $ Y
. AFR ROCKINFO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND. DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL OA N OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. 416 416 T OFRT 609
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
609 N D TSPSTO 0 N N
EXIT TABLE OFRT
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route OFRT 907 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
907 CND EA INTNL SK 2
N D ISUPITEAOG 0 D077 N
CND ALWAYS SK 1
N D ISUPITEAOG 0 D123 N

```

**Figure 37 Sample TRAVER output for a national carrier operator (Continued)**

```

TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITEAOG          D0774162581234      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.8 Carrier operator

The command line assumes that the originator is a 1FR line 6136212112, the CalledPartyID = no address present, Operator Requested, and the PrimaryCarrier = 0488. TRAVER 38 provides a sample TRAVER output for a carrier operator response.

**Figure 38 Sample TRAVER output for a carrier operator response**

```

>traver 1 6136212112 n tns na cic 0488 osa puba ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP

```

**Figure 38 Sample TRAVER output for a carrier operator response (Continued)**

```

. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 104880
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. .   N D ISUPITEAOG 0 D077 N
. .   CND ALWAYS SK 1
. .   N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
CARRIER OPERATOR CALL.  LOOKING UP 10XXX/101XXXX-00
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. .   N D ISUPITEAOG 0 D077 N
. .   CND ALWAYS SK 1
. .   N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

**Figure 38 Sample TRAVER output for a carrier operator response (Continued)**

```

. . 00 00 EA OA 1 T NO ITT Y OFRT 879 2 2 N
. . . TABLE OFRTMAP
. . . . Tuple not found. Default to old index.
. . . TABLE OFRT
. . . 879 N D TOPSEAOSSOG 15 D040 N
. . . EXIT TABLE OFRT
USING EQUAL ACCESS (EA) ROUTE OFRT 879 FROM PRETRANSLATION
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
879 N D TOPSEAOSSOG 15 D040 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 TOPSEAOSSOG          N          STP

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.9 Carrier cut-through

TRAVER 39 provides a sample TRAVER output that illustrates a carrier cut-through response. The command line assumes that the CalledPartyID = No address present, cut-through call to carrier, and the PrimaryCarrier = 488.

**Figure 39 Sample TRAVER output for a carrier cut-through**

```

>traver l 6136211311 n tns na cic 488 noa #75 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$) (TNS NA
TABLE LINEATTR
300 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_60 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_60 FR01 613 EAP1 TSPS N $ $
TABLE RATEAREA

```

**Figure 39 Sample TRAVER output for a carrier cut-through (Continued)**

```

L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 10488
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 907 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. .   N D ISUPITEAOG 15 D077 N
. .   CND ALWAYS SK 1
. .   N D ISUPITEAOG 15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N N N N N N N N N N Y N
Y
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 ISUPITEAOG           D077           ST
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.10 National carrier call with trunk originator

The command line assumes that the originator is ISUPITIC and the CalledPartyID = National Number 4166251242. TRAVER 40 provides a sample TRAVER output for a national carrier call with a trunk originator.

**Figure 40 Sample TRAVER output for a national carrier call with a trunk originator**

```

>traver tr ISUPITIC n cdn na 4166251242 tns na unk 5220 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. TNSPUB E800 ( XLA PUBXCAR) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 52204166251242
TABLE STDPRTCT
PUBXCAR ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 52204 52209 ET NP 4 GTE Y OFRT 898 5 24
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 898 CND EA INTNL SK 2
. .   N D OGEAITT 6 N N
. .   CND ALWAYS SK 1
. .   N D OGEAITT 15 D188 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT                1242                ST

```

**Figure 40 Sample TRAVER output for a national carrier call with a trunk originator (Continued)**

```
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

**3.3.11 National call with trunk originator**

The command line assumes that the originator is ISUPITIC and the CalledPartyID = National Number 6136212119. TRAVER 41 provides a sample TRAVER output for a national call with a trunk originator.

**Figure 41 Sample TRAVER output for a national call with a trunk originator**

```
>traver tr ISUPITIC n cdn na 6136212119 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
. Resulting digits are: 6136212119
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:  N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
```

**Figure 41 Sample TRAVER output for a national call with a trunk originator (Continued)**

```

TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 2119 P HOST 01 0 19 19 R4
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 621 2119
(PUBLIC (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136212119          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.12 National carrier call with 4 CIC based FGD trunk originator**

The command line assumes that the originator is a public trunk ISUPITIC, the CalledPartyID = National Number 4166251242, and the PrimaryCarrier = 0488. TRAVER 42 provides a sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator.

**Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator**

```

>traver tr isupitic n cdn na 4162581234 tns na unk 0488 ainres r02 ar fgd b
Warning: Routing characteristics are present.

```

**Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator (Continued)**

```

Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. TABLE OCCINFO
. ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N
N N Y
. TABLE OCCSRV
. TUPLE NOT FOUND
. TABLE NSCDEFS
. AIN 3 ( NSC0ZZ 088) ( NSC1NX 188) ( NSCOP0ZZ 099) ( NSCOP1NX 180)$
. NOTE: ISDN Digit Conversion has been performed:
. Trunk originator of type FGD assumed.
. FGD Trunk Originator"s translations assumes CIC size of 4.
. Resulting digits are: 08804884162581234
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 0880488 0880488 EA DD 7 N ITT Y OFRT 900 7 25 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN

```

**Figure 42 Sample TRAVER output for a national carrier call with a 4 CIC-based FGD trunk originator (Continued)**

```

TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT          4162581234      ST
2 ISUPOGITT       4162581234      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.13 National call with LEC carrier and FGD trunk originator**

The command line assumes that the originator is public trunk ISUPITEAIC, the CalledPartyID = National Number 6136213003, and Carrier ID = 0110 (LEC carrier). TRAVER 43 provides a sample TRAVER output for national call with LEC carrier and a 4 CIC-based FGD trunk originator.

**Figure 43 Sample TRAVER output for national call with LEC carrier and FGD trunk originator**

```

>traver tr isupiteaic n cdn na 6136213003 tns na unk 0110 ainres r02 ar fgd
b
Warning: Routing characteristics are present.
         Originator must be able to send in
         characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$) $
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. CDNPUB E800 ( XLA E800X) ( PREFIX ) $
. NSC0ZZ option must be present in NSCDEFS
. NSCOP0ZZ option must be present in NSCDEFS
. NSC1NX option must be present in NSCDEFS
. NSCOP1NX option must be present in NSCDEFS
. NOTE: ISDN Digit Conversion has been performed:
.   Trunk originator of type FGD assumed.
.   FGD Trunk Originator"s translations assumes CIC size of 4.

```

**Figure 43 Sample TRAVER output for national call with LEC carrier and FGD trunk originator**

```

.      Resulting digits are: 16136213003
TABLE STDPRTCT
E800X ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1613 1613 ET DD 1 SSP N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 321) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 3003 L HOST 00 0 04 05
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP00100 SOC Option is IDLE.
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN N11 Trigger Items as N11 is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136213003          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.14 National carrier operator call with 4 CIC based FGD trunk originator

The command line assumes that the originator is public trunk ISUPITIC, the CalledPartyID = National Number, carrier operator present 4166251242, and the PrimaryCarrier = 0488. TRAVER 44 provides a sample TRAVER output for national carrier operator call with a 4 CIC-based FGD trunk originator.

**Figure 44 Sample TRAVER output for national carrier operator call (4 CIC-based FGD trunk originator)**

```
>traver tr isupitic n cdn na 4162581234 tns na unk 0488 osa puba ainres r02
ar fgd b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. OSAAPUB (OSA PUBA (TNS NA)$) (OSA PUBA (CDN NA) (TNS NA)$) (OSA PUBA
(CDN IN) (TNS NA)$) ( BC 3_1KHZ (OSA PUBA) (TNS NA)$) ( BC 3
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. TABLE OCCINFO
. ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N
N N Y
. TABLE OCCSRV
. TUPLE NOT FOUND
. TABLE NSCDEFS
. AIN 3 ( NSC0ZZ 088) ( NSC1NX 188) ( NSCOP0ZZ 099) ( NSCOP1NX 180)$
. NOTE: ISDN Digit Conversion has been performed:
.     Trunk originator of type FGD assumed.
.     FGD Trunk Originator"s translations assumes CIC size of 4.
.     Resulting digits are: 09904884162581234
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 0990488 0990488 EA OA 6 N ITT Y OFRT 106 7 25 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
```

**Figure 44 Sample TRAVER output for national carrier operator call (4 CIC-based FGD trunk originator) (Continued)**

```

. . 106 N D LNTOPSO 1 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LNTOPSO                4162581234                ST3P

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**3.3.15 National call with for CIC based FGD trunk originator**

The command line assumes that the originator is a public trunk ISUPITIC and the CalledPartyID =National Number 4164631301. TRAVER 45 provides a sample TRAVER output for a national call with a 4 CIC-based FGD trunk originator.

**Figure 45 Sample TRAVER output for a national call (4 CIC-based FGD trunk originator)**

```

>traver tr isupitic n cdn na 4162581234 ainres r02 ar fgd b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. CDNPUB E800 ( XLA PBXNOCAR) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Trunk originator of type FGD assumed.
.   FGD Trunk Originator"s translations assumes CIC size of 4.
.   Resulting digits are: 14162581234

```

**Figure 45 Sample TRAVER output for a national call (4 CIC-based FGD trunk originator) (Contin-**

```

TABLE STDPRTCT
PBXNOCAR ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 14 179776 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITOG 4162581234 ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 3.3.16 International carrier call with FGC trunk originator

TRAVER 46 provides a sample TRAVER output for an international carrier call with an FGC trunk originator. The command line assumes that the originator is a public trunk ISUPITIC, the CalledPartyID = International Number 8527146926, and the PrimaryCarrier = 0488. Charge number digits are provided for the trunk using the AINCHG option.

**Figure 46 International carrier call with FGC trunk originator**

```
>traver tr isupitic n cdn in 8527146926 tns na unk 0488 ain ainchg
6136213009 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) (CDN IN (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS
NA)$) ( BC 3_1KHZ (CDN IN) (TNS NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 04880118527146926
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 0488011 0488011 ET DD 7 ITT Y OFRT 900 5 20
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
852 T 692 9 11 T OFRT 64 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
64 N D TOPOGNY 3 N N
```

**Figure 46 International carrier call with FGC trunk originator (Continued)**

```
      N D TERMBX01 3 N N
EXIT TABLE OFRT
TABLE TRKLATA
ISUPITIC 6136213009 LATA1 N
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N
N Y
Default is to leave route unchanged

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPOGITT           8527146926           ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>
```

---

## 4 AIN response translations for private agents

---

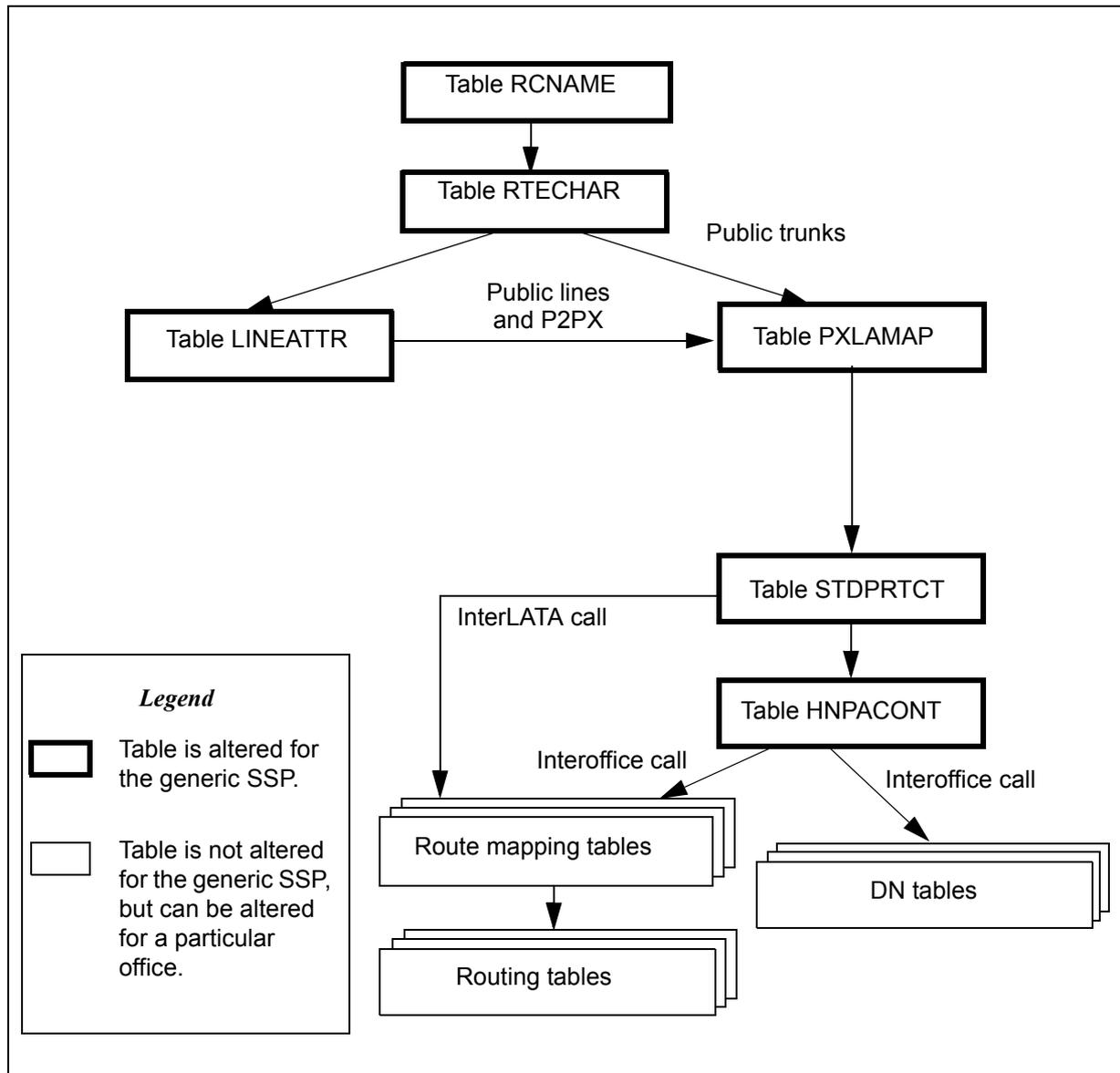
**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) loss. To minimize the number of call failures, alter translations only during low-traffic periods.

This chapter describes the additional datafill required for AIN response translations when triggering agents are public lines or public trunks.

Figure 47 on page 152 outlines the different tables needed for AIN response translations for private agents and the relationship between these tables.

Figure 47 AIN table relationships for public agents - without simplification



The generic SSP referenced in Figure 47 has the following characteristics:

- The generic SSP is an equal-access end office (EAE0). An EAE0 was selected because it requires more data than tandem office. Tandem offices can also use this document because the data required is generally a subset of the EAE0 data.
- The generic SSP supports calls from a network access point (NAP); that is, the generic SSP supports incoming public trunks using EAMF signaling or Transit Network Selection (TNS) for Signaling System Number 7 (SS7) facilities. This implies that the datafill is present to support 0ZZXXX calls.

- The generic SSP does not have routing based on bearer capability (package NTX767 or NTX768). This assumption was made to simplify the datafill explanations. Bearer capability is detailed in sections on modification of generic SSP data.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls. When the AIN services do not support all call types, the data for the unsupported call type is not required.
- The generic SSP supports the private lines and private trunks. Though not explicitly stated, the office also supports public lines and trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only triggering at a Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports only one public dialing plan used in AIN response translation. The generic SSP does not span LATA boundaries.
- The generic SSP does not require class of service screening during AIN response translation.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers. The network supports 10-digit dialing from public trunks.
- As of NA003, the SSP supports a 7-digit subscriber number in the CalledPartyID returned by the SCP, as well as national and international numbers in the CalledPartyID.
- The generic SSP supports overriding line attributes when an agent triggers on SDS and receives an Analyze\_Route response message or uses default routing. Overriding line attributes are used during response processing in place of the originator's line attributes, allowing the customer to overcome the toll restrictions imposed by the originator's line attributes. See Section 30.2.3 "Step 3: Datafilling for line attribute response processing" on page 767 to provision overriding line attributes for a trigger item. See Section 30.3.4 "Step 4: Datafilling table PODPATTR (optional)" on page 788 to provision overriding line attributes for a trigger group.

## 4.1 Datafill for private lines and trunks without simplification

This section details the additional datafill required to support AIN response translations without activating the simplification feature.

### 4.1.1 Table RCNAME

Translation and routing of AIN responses is based on attributes found in the intelligent information elements (herein referred to as routing characteristics). Prior to translation, these attributes are mapped onto tables RCNAME and RTECHAR.

Table RCNAME (routing characteristic name) contains a list of names that are associated with a group of routing characteristics in table RTECHAR.

Once an alphanumeric entry is placed into table RCNAME, that alphanumeric entry can be used as an RCNAME key in any of the following:

- translation mapping tables (such as table XLAMAP and table PXLAMAP)
- route mapping tables (such as subtable RTEMAP, table OFRTMAP, and table IBNMAP)
- table RTECHAR

*Note:* Though there are other tables that contain RCNAME, they are not documented here because they are not relevant to AIN response processing.

The routing characteristic tables should be datafilled in the following order:

1. table RCNAME
2. the translation mapping tables and the routing mapping tables
3. table RTECHAR

**ATTENTION**

Table RCNAME should be datafilled before table RTECHAR, before the translation mapping tables, and before the route mapping tables. Failure to datafill in the order listed above results in a call failure for calls using previous routing characteristics that correspond to an old RCNAME.

#### **4.1.1.1 Recommended RCNAME datafill for AIN response translations**

The required data for Table RCNAME for AIN response processing depends on the additional entries required for table RTECHAR as described in Section 4.1.2 “Table RTECHAR” on page 155.

Table 31 illustrates the data that would be present for a generic SSP. Details on the associated routing characteristics are provided in the following chapter.

**Table 31 Generic SSP data**

Type of access	RCNAME
National call	NACALL
National carrier call	NACAR
International call	INCALL

**Table 31 Generic SSP data (Continued)**

International carrier call	INCAR
Subscriber Call	SUBCALL
Subscriber Carrier Call	SUBCAR
International operator	INOPER
International carrier operator	INCAROP
National carrier operator	NACAROP
Carrier operator	CAROP
Bell operating company operator call	BOCOP

**4.1.1.2 Modifying generic RCNAME data for office or AIN service**

Modification of table RCNAME depends on the modification of table RTECHAR. See Section 4.1.2.5 “Modifying generic RTECHAR data for an office or an AIN service” on page 163.

**4.1.2 Table RTECHAR**

Table RTECHAR (routing characteristics) allows the DMS to translate and route on attributes found in intelligent information elements. The attributes (herein referred to as characteristics) that are applicable to AIN during response processing are described in this chapter.

This chapter describes table RTECHAR under the following headings:

- Routing characteristics
- Combining routing characteristics
- Recommended datafill to support AIN response processing

**4.1.2.1 Routing characteristics**

There are four routing characteristic types:

- Bearer capability
- Called party number
- Operator System Access
- Transit Network Selection

**4.1.2.1.1 Bearer capability** The bearer capability (BC) determines the type of transmission service accessible to the user. The BC of the call is not altered by AIN response processing. Thus, the BC routing characteristic is maintained.

Before querying the SCP, the BC is maintained while processing the SCP response. Table 32 contains examples of Bearer Capabilities that are supported for AIN.

**Table 32 Bearer capability characteristics**

Bearer capability (as per TR-NWT-001285)	Characteristic
Speech	(BC SPEECH)
3.1 kHz audio	(BC 3_1KHZ)
56kbps	(BC 56KDATA)
64kbps	(BC 64KDATA)

**Note:** Bearer capability is used as a routing characteristic only when the DMS has package NTX767 or NTX768.

**4.1.2.1.2 Called party number** The called party number (CDN) type indicates the intended use of the corresponding digits. AIN response processing currently supports the following CDN types:

- NIL indicates that either digits are not present or that the type of number is indeterministic for digits that are present.
- National (NA) indicates a number in either the 10-digit public format or N11 format.
- International (IN) indicates that the number is an international 7- to 12-digits.
- Subscriber (L) indicates that a number is in 7-digit public format.

**Note:** AIN response processing currently does not support a private network (NET) number or a private abbreviated (ABBR) number.

Parameter CalledPartyID must use parameter AINDigits format. Parameter AINDigits contains the “nature of number” field. It is this field that is used to identify the CDN characteristic. See TR-NWT-001285, *Switching Control Point Interface*.

Table 33 illustrates the characteristics of the “nature of number” field.

**Table 33 Characteristics of the nature of number field**

Nature of number	Characteristic
National (significant) number/ National (significant) number, operator requested	(CDN NA)

**Table 33 Characteristics of the nature of number field (Continued)**

Nature of number	Characteristic
International number/ International number, operator requested	(CDN IN)
Subscriber number/ Subscriber number, operator requested	(CDN L)
No address present, operator requested	(CDN NIL)
No address present, cut-through call to carrier.	(CDN NIL)
<b>Note:</b> The 950+ Nature of Number Called Party numbers are 7-digits numbers datafilled as Subscriber CDN type. However, the call is routed as national number.	

**4.1.2.1.3 Operator system access** The operator system access indicates the required operator by type of access:

- Public/Principle (PUBP) access is used to direct the call to an operator when there is no carrier parameter specified in the response. Note that the operator this call is being routed to can either be the local exchange carrier (LEC) operator or the carrier operator, depending on the nature of the call and the translation set up.
- Public/Principle (PUBP) access is used to direct the call to an operator when the carrier that is used in translation is a LEC. Note that the operator this call is being routed to can either be the LEC operator or the carrier operator, depending on the nature of the call and the translation setup.
- Public/Alternate (PUBA) access is used to direct the call to a carrier operator when the carrier that is used in translation is NOT an LEC.

**Note:** Private/Principle access, that is used to direct calls to a private network attendant system or a private branch exchange (PBX), is not supported by AIN.

AIN uses the CalledPartyID parameter (“nature of number” field) to indicate that an operator is required. The type of operator that is required depends on the following:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- When the carrier that is used in the translation is not an LEC (identified by 0110), then the carrier operator is required.

- When the carrier that is used in translation is an LEC, then the PUBP operator is required.
- When there was no carrier parameter presented in the response, then the PUBP operator is required.

Table 34 illustrates the characteristics of each type of operator.

**Table 34 Type of operator characteristics**

Type of operator	Characteristic
Operator (also referred to as the public/principle operator)	(OSA PUBP)
Carrier operator (also referred to as the public/alternate operator)	(OSA PUBA)

**4.1.2.1.4 Transit network selection** Transit network selection (TNS) is used in interswitch calls to indicate the type of facility that the user wants to select:

- Nationally-Standardized (NA) indicates a call in the public network using public carriers.
- User-Specified Network indicates a call in the private environment using private facilities.

*Note:* AIN supports only Nationally-Standardized (NA).

In AIN the presence of TNS is determined in the following manner:

- The SCP can return one or more carriers in the form of PrimaryCarrier, AlternateCarrier, and SecondAlternateCarrier. The SSP translates using each carrier in turn until a facility is selected or the SSP detects that the carrier is busy. Routing characteristics associated with each carrier are selected before the translation of each carrier.
- When the carrier that is used in the translations is not an LEC (identified by 0110), the transit network selection of NA is required.
- When the carrier that is used in translation is an LEC, then the transit network selection is not required.
- When there is no carrier parameter specified in the response, then the transit network selection is not required.

Table 35 illustrates the type of network characteristics.

**Table 35 Type of network characteristics**

Type of network	Characteristic
Nationally Standardized	(TNS NA)

#### 4.1.2.2 Combining routing characteristics

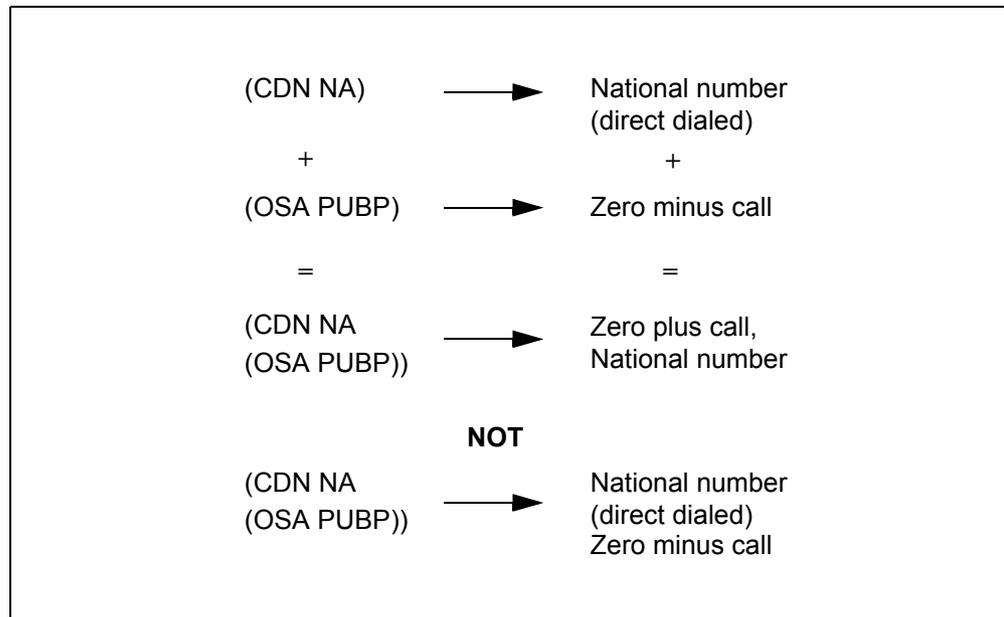
A call can have one or more routing characteristics. The combination of several characteristics usually introduces a different call type rather than individual characteristics.

For example,

- A called party number of NA with no other routing characteristics translates as a 10-digit national number.
- An operator system access with no other routing characteristics translates as a zero minus call. The operator enters the number the user wants to call.
- When a called party number is present in conjunction with an operator system access, the call translates as a zero plus call. The call routes to an operator, but the operator does not need to enter the number as it has already been provided.
- The call does not translate as a zero minus, national number because there is no such call type.

Figure 48 on page 160 illustrates this example.

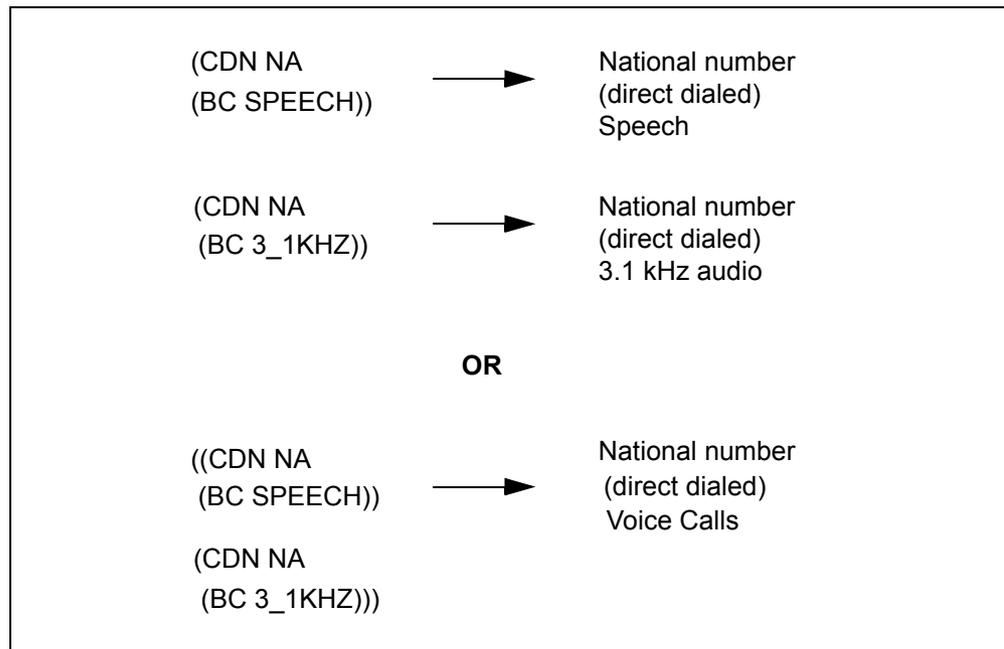
**Figure 48 Example #1: combining routing characteristics**



In some instances, different combinations could be treated identically. It is up to the operating company to determine whether or not the differential factor identifies a new call type.

Figure 49 illustrates another possible combination.

**Figure 49 Example #2: combining routing characteristics**



Though both methods are correct, the one shown in Figure 49 is preferred because it minimizes datafill in the tables that use RCNAME.

**4.1.2.3 Routing characteristic combinations supported by AIN response processing**

Table 36 on page 161 illustrates the possible routing characteristic combinations determined from an AIN response. Each bearer capability is compatible with all combinations and is not shown here for simplicity.

**Table 36 Combinations supported by AIN response processing**

Type of access	Routing characteristic combinations		
National call	(CDN NA)		
National carrier call	(CDN NA)		(TNS NA)
Subscriber call	(CDN L)		
Subscriber carrier call	(CDN L)		(TNS NA)
International call	(CDN IN)		
International carrier call	(CDN IN)		(TNS NA)
International operator	(CDN IN)	(OSA PUBP)	
International carrier operator	(CDN IN)	(OSA PUBA)	(TNS NA)
National carrier operator	(CDN NA)	(OSA PUBA)	(TNS NA)
Carrier operator		(OSA PUBA)	(TNS NA)
BOC operator—zero minus call		(OSA PUBP)	
BOC operator—zero plus national call	(CDN NA)	(OSA PUBP)	
BOC operator—zero plus subscriber call	(CDN L)	(OSA PUBP)	

**4.1.2.4 Recommended datafill to support AIN response processing**

Datafill is highly influenced by office and AIN services. This section first documents generic RTECHAR data and, then, documents how to modify the generic RTECHAR data based on office and AIN services.

	<p><b>CAUTION</b>  <b>Incorrect translations possible</b>                  Missing datafill in table RTECHAR can produce incorrect translations.</p>
---	--

A tuple in table RTECHAR represents the routing characteristics returned in an Analyze\_Route, Forward\_Call, or Send\_To\_Resource to an IP and the

routing characteristic (BC) that is signaled in from the originating agent and used during response translations. When a tuple does not exist in table RTECHAR with the same routing characteristics as those used during response processing, an RCNAME cannot be derived and the response cannot be translated correctly. A DFIL log (DFIL320) is generated to indicate a missing tuple.

The generic RTECHAR datafill provided in the examples is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports calls from a network access point (NAP); that is, this SSP supports incoming public trunks using EAMF signaling or TNS for SS7 facilities.
- The generic SSP does not have routing services based on bearer capability (package NTX767 or NTX768).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

Table 37 illustrates the RCNAMES and routing characteristic combinations for various access types.

**Table 37 Routing characteristic combinations by access type**

Type of access	RCNAME	Routing characteristic combination
National call	NACALL	(CDN NA \$) \$
National carrier call	NACAR	(CDN NA (TNS NA) \$) \$
Subscriber call	SUBCALL	(CDN L) \$
Subscriber carrier call	SUBCAR	(CDN L (TNS NA) \$) \$
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PY\$)) (OSA PUBP \$) \$

**4.1.2.5 Modifying generic RTECHAR data for an office or an AIN service**

The generic RTECHAR data is a superset of AIN functionality with the exception of bearer capability. Some of the routing characteristic combinations can be further grouped to minimize the datafill in the associated mapping tables.

The following subsections describe in detail the modification of generic RTECHAR data depending on the office type or AIN service.

**4.1.2.5.1 Offices that do not support a NAP** For offices that do not support calls from a NAP, it is possible to group national calls (NACALL) and national carrier calls (NACAR). Similarly, international calls (INCALL) and international carrier calls (INCAR) could also be grouped.

Table 38 on page 163 illustrates routing characteristic combination for offices that do not support a NAP.

**Table 38 Combinations for non-NAP supporting offices**

Type of access	RCNAME	Routing characteristic combination
National call & national carrier call	NACALL	(CDN NA \$) (CDN NA (TNS NA) \$) \$
Subscriber call & Subscriber carrier call	SUBCALL	(CDN L \$) (CDN L (TNS NA) \$) \$
International call & international carrier call	INCALL	(CDN IN \$) (CDN IN (TNS NA) \$) \$

The datafill in Table 38 would replace the NACALL, NACAR, INCALL, and INCAR entries in generic RTECHAR data. All other entries specified in generic RTECHAR data remain unaltered.

**4.1.2.5.2 Offices that support bearer capability routing** When the office supports bearer capability routing (package NTX767 or NTX768), bearer capability must also be datafilled in Table RTECHAR. The following is an example of how a national call entry would expand based on Bearer Capability.

Table 39 illustrates some combinations for national call entries.

**Table 39 Combinations for national call entries**

Type of access	RCNAME	Routing characteristic combinations
National call (Voice call)	NACALL	(CDN NA \$) (CDN NA (BC 3_1KHZ) \$) \$

**Table 39 Combinations for national call entries (Continued)**

Type of access	RCNAME	Routing characteristic combinations
National call (56 kbps)	NA56K	(CDN NA (BC 56KDATA) \$) \$
National call (64 kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

*Note:* The 56 kbps calls are separated from the 64 kbps calls because PTS trunks support 56 kbps calls but do not support 64 kbps calls. Each entry in generic RTECHAR would need to be expanded in a way similar to the national call.

#### 4.1.2.5.3 AIN services that do not allow international numbers

When the AIN services do not allow an international number in the response, then the tuples in Table 40 on page 164 can be removed from generic RTECHAR datafill.

**Table 40 Combinations for services that do not support international numbers**

Type of access	RCNAME	Routing characteristics and combinations
International call	INCALL	(CDN IN \$) \$
International carrier call	INCAR	(CDN IN (TNS NA) \$) \$
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$

All other entries in generic RTECHAR data would remain unaltered.

**4.1.2.5.4 AIN services that do not allow operator numbers** When the AIN services do not allow operator calls in the response, the tuples in Table 41 can be removed from generic RTECHAR datafill.

**Table 41 Combinations for services that do not allow operator numbers**

Type of access	RCNAME	Routing characteristic combinations
International operator	INOPER	(CDN IN (OSA PUBP) \$) \$
International carrier operator	INCAROP	(CDN IN (OSA PUBA) (TNS NA) \$) \$
National carrier operator	NACAROP	(CDN NA (OSA PUBA) (TNS NA) \$) \$
Subscriber carrier operator	SUBCAROP	(CDN L (OSA PUBA) (TNS NA) \$) \$
Carrier operator	CAROP	(OSA PUBA (TNS NA) \$) \$

**Table 41 Combinations for services that do not allow operator numbers (Continued)**

Type of access	RCNAME	Routing characteristic combinations
Bell operating company operator call	BOCOP	(CDN NA (OSA PUBP) \$) (CDN L (OSA PUBP) \$) (OSA PUBP \$) \$

All other entries in generic RTECHAR data would remain unaltered.

### 4.1.3 Digits used in AIN response translations

When a public agent triggers and receives an Analyze Route or a Forward call response from the SCP with digits specified, translation and routing processing should take place to translate the digits and route the call. Depending on the nature of the response, digits to translate can have different format.

Table 42 on page 165 summarizes the digits used in response translations for various carrier and called party number combinations. The maximum number of digits supported is 18.

**Table 42 Digits used in AIN translation**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
No address present, operator requested	0D	XXX	10XXX	0XXX
National number, operator requested	10D	XXX	10XXX+(10)D	0XXX+(10)D
Subscriber number, operator requested	7D	XXX	10XXX+(7)D	0XXX+(7)D
International number, operator requested	7-15D	XXX	10XXX+(7-12)D	0XXX+(7-12)D
National number	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number	7D	XXXX	101XXXX+(7)D	XXXX+(7)D
International number	7-15D	XXXX	101XXXX+(7-12)D	XXXX+(7-12)D
No address present, operator requested	0D	XXXX	101XXXX	XXXX

**Table 42 Digits used in AIN translation (Continued)**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits used in translations for an end office	Digits used in translations for an access tandem
National number, operator requested	10D	XXXX	101XXXX+(10)D	XXXX+(10)D
Subscriber number, operator requested	7D	XXXX	101XXXX+(7)D	
International number, operator requested	7-15D	XXXX	101XXXX+(7-12)D	
National number	10D	Not present	(10)D	
Subscriber number	7D	Not present	(7)D	
International number	7-15D	Not present	(7-12)D	
No address present, operator requested	0D	Not present	0	
National number, operator requested	10D	Not present	(10D)	
Subscriber number, operator requested	7D	Not present	(7)D	
International number, operator requested	7-15D	Not present	(7-12)D	
950+ Call	7D	Not present	(7)D	
Carrier cut-through	Not present	XXX	10XXX	N/A
Carrier cut-through	Not present	XXXX	101XXXX	N/A

**4.1.4 Table XLAMAP**

When a private agent triggers and receives an Analyse Route or a Forward call response from the SCP with digits specified, translation and routing functions should take place to translate the digits and route the call. The digits coming into the SCP response are not in a format that can reuse originator's private pretranslator (no public access code is prefixed, could be in 10D format whereas local dialing supports only 7D format, no international access code is

prefixed in case of international calls). See Table 42. Then a new pretranslator should be defined to handle these digits. Table XLAMAP is used to map to a new pretranslator and allow private lines and private trunks on the DMS to translate differently given a RCNAME and a Meridian Digital Centrex (MDC) translator.

Table XLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new translator name.
- The LINEATTR selector provides direct access to a line attribute that does not support equal access. Note that this selector is not supported by the current AIN release.
- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.

*Note:* AIN response translations supports only the XLA selector. The XLA selector specifies a translator that directs the call to the public environment.

**4.1.4.1 Recommended datafill for table XLAMAP to support AIN response translation**

The generic XLAMAP datafill recommended in this section is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports private lines and private trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports triggering at the Public Office Dialing Plan (PODP) trigger for all AIN supported agents.
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.

The RCNAMES used in Table 43 are from the generic RTECHAR example described in Section 4.1.1 and Section 4.1.2. When an office modifies table RTECHAR data, the following example should be modified accordingly.

**Table 43 Generic RTECHAR RCNAME examples**

RCNAME	XLANAME	Data
NACALL	<1st XLA>	(XLA PUBXLA) \$
NACAR	<1st XLA>	(XLA PUBXLA) \$

**Table 43 Generic RTECHAR RCNAME examples (Continued)**

SUBCALL	<1st XLA>	(XLA PUBXLA) \$
SUBCAR	<1st XLA>	(XLA PUBXLA) \$
INCALL	<1st XLA>	(XLA PUBXLA) \$
INCAR	<1st XLA>	(XLA PUBXLA) \$
INOPER	<1st XLA>	(XLA PUBXLA) \$
INCAROP	<1st XLA>	(XLA PUBXLA) \$
NACAROP	<1st XLA>	(XLA PUBXLA) \$
SUBCAROP	<1st XLA>	(XLA PUBXLA) \$
CAROP	<1st XLA>	(XLA PUBXLA) \$
BOCOP	<1st XLA>	(XLA PUBXLA) \$

The <1st XLA> entry in the second column of Table 43 on page 167 refers to the first non nil translator that a private agent encounters. The ordering of translators is as follows:

- table NCOS, option XLAS, translator identified in field PREMCLA
- table CUSTHEAD, translator identified in field PREMCL
- table CUSTHEAD, translator identified in field CUSTCLA

The entries in Table 43 on page 167 need to be duplicated for the first non-nil translator of each private agent.

The new translator name (that is, PUBXLA) can be different for each mapped translator. It is recommended that the number of new translators be limited to one per customer group.

In most offices, the number of new translators is equivalent to the number of public dialing plans the office supports. The number of public dialing plans depends on the number of LATAs and the number of NPA NXX that require different public dialing plan.

#### **4.1.4.2 Modifying generic XLAMAP data for an office or an AIN service**

When the office supports only individual or customer group triggers, table XLAMAP requires only the first translator for each subscribed private agent. For office-based triggers, every first translator of each private agent is required.

When the service does not support international or operator calls, the entries associated with those RCNAMES are not required.

When bearer capability routing is supported, then additional entries associated with the additional RCNAMES are required.

**4.1.5 Table XLANAME**

Table XLANAME is used to define the new pretranslators that direct calls from the private dialing plan to the public dialing plan. These new pretranslators are mapped to through table XLAMAP as described in Section 4.1.4.

**4.1.5.1 Recommended datafill to support AIN response translation**

The generic XLANAME datafill provided in Table 44 on page 169 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports the private lines and private trunks.
- The generic SSP routes all public numbers in the public environment.
- The generic SSP supports only one public dialing plan required for all AIN 0.1 response translation.
- The generic SSP does not support a default carrier per customer group for AIN response translation.

**Table 44 Generic XLANAME datafill**

XLANAME	Data	MAXDIG
PUBXLA	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA NILC Y 0) \$ \$) \$	9

*Note 1:* The following selectors must be present: NET, GEN, LATTR, and EA. These selectors allow equal-access calls to translate.

*Note 2:* For details on the fields in table XLANAME, please refer to NTP 297-2001-451, *Meridian Digital Centrex Customer Data Schema*.

**4.1.5.2 Modifying generic XLANAME data for an office or an AIN service**

When an office does not support the private dialing plan, then the entries in table XLANAME are not required.

Additional entries in table XLANAME are needed for each different public dialing plan that is required in AIN response translation.

When a default carrier per customer group is required, the data in Table 45 is required for each default carrier code.

**Table 45 Data for a default customer group**

XLANAME	Data	MAXDIG
MCIPUB	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA MCI Y 0) \$ \$ ) \$	9
ATTPUB	(NET N N N 0 N NDGT N N GEN (LATTR 500) (EA ATT Y 0) \$ \$ ) \$	9

#### 4.1.6 Table LINEATTR

Table LINEATTR is the starting point of public dialing plan translations for private lines, private trunks, and public lines. This chapter discusses only additions to table LINEATTR with respect to private lines and private trunks for AIN response translation. The public lines use the subscribed line attribute that is associated with the LEN.

##### 4.1.6.1 Recommended datafill to support AIN response translation

The generic LINEATTR datafill provided in Table 46 is based on the following:

- the generic SSP is an equal-access end office (EAEO)
- the generic SSP supports private lines and private trunks
- the generic SSP supports only one public dialing plan for all AIN response translations
- the generic SSP does not require class of service screening during AIN response translations

**Table 46 Recommended datafill**

LNATTIDX	Data
500	IBN NONE NT NSCR 0 613 P621 L613 TSPS 0 NIL NILSFC LATA1 0 NIL NIL 00 N

*Note:* For details on the fields in Table LINEATTR please refer to NTP 297-1001-451, *Customer Data Schema*.

##### 4.1.6.2 Modifying generic LINEATTR data for an office or an AIN service

When an office does not support the private dialing plan, the additional entries in Table LINEATTR are not required.

When class of service screening is required for AIN response translation, the office has two options:

- The office can opt to reuse existing LINEATTRs from the IBN to the public environment. This requires additional data in the translation mapping tables as well.
- The office can add only the LINEATTR entries required for class of service screening.

When there is more than one public dialing plan, additional data is required in table LINEATTR. For example, an office can span two LATAs. In this case, the office requires a minimum of two entries in table LINEATTR, as shown in Table 47.

**Table 47 Modified LINEATTR data**

LNATTIDX	Data
500	IBN NONE NT NSCR 0 613 P621 L613 TSPS 0 NIL NILSFC LATA1 0 NIL NIL 00 N
501	IBN NONE NT NSCR 0 819 P622 L819 TSPS 0 NIL NILSFC LATA2 0 NIL NIL 00 N

*Note:* The additional line attribute allows for different STDPRT entries (for example, P621 and P622). Though this is not required for different originating numbering plan areas (NPA), it usually is required for different LATAs.

#### 4.1.7 Table PXLAMAP

Table XLAMAP is used to map to a new pretranslator to translate digits coming into the SCP response when originator's pretranslator cannot be reused. The new pretranslator allows access to the public environment where digits are translated and routed. However, digits used into the public environment could have a format that cannot use public pretranslators. Then, new pretranslators should be defined to handle such cases. Table PXLAMAP (pretranslator mapping) is used to map to new pretranslators into the public environment to allow the DMS to translate differently given a RCNAME and a pretranslator.

Table PXLAMAP allows the operating company to alter translation through the following methods:

- The XLA selector directs the call to use a new pretranslator name.
- The POSITION selector provides access to a routing position when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.

- The ROUTE selector provides direct access to a route list element when there are no address digits to translate on. Note that this selector is not supported by the current AIN release.
- The PREFIX selector activates the Response Translations Simplification. Digit conversion process is used in conjunction with the XLA selector to specify an exception pretranslator.

**Note 1:** This selector can be used only when the Response Translations Simplification feature is active.

**Note 2:** When no tuple is present for an RCNAME and an STDPRTNM the Response Translations Simplification digit conversion process is activated by default.

AIN response translations supports only the XLA and PREFIX selectors.

#### 4.1.7.1 Recommended datafill for table PXLAMAP to support AIN response translation

The generic PXLAMAP datafill provided here is based on the following:

- The service switching point (SSP) is an equal-access end office (EAEO).
- This office supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The pretranslator names to be mapped are derived from the following:
  - All public line attributes for AIN supported agents
  - All public trunk groups for AIN supported agents
  - All private LINEATTRs that are used in AIN response translation, as defined in Section 4.1.6 “Table LINEATTR” on page 170.

**Table 48 Recommended PXLAMAP datafill**

RCNAME	XLANAME (Note)	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$

**Table 48 Recommended PXLAMAP datafill (Continued)**

RCNAME	XLANAME (Note)	Data
INCAROP	P621	(XLA ICOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA CAOP) \$
BOCOP	P621	(XLA NAOP) \$
NACALL	PTRK	(XLA NAT) \$
SUBCALL	PTRK	(XLA NAT) \$
NACAR	PTRK	(XLA NAPC) \$
SUBCAR	PTRK	(XLA NAPC) \$
INCALL	PTRK	(XLA INT) \$
INCAR	PTRK	(XLA NAPC) \$
Note: Assume P621 is the public translator for a public line and PTRK is the pretranslator for a public trunk.		

Though it is not necessary to separate the national and national carrier calls for lines, it is necessary to separate them for public trunks. Details of the new translator names and their function are provided in the next chapter.

The above entries for P621 need to be duplicated for each line pretranslator name. The new pretranslator names would be reused for each line pretranslator because there is only one dialing plan. Similarly, duplication of the PTRK entries would be required for public trunks.

The new pretranslator names (for example, NAT) would need to be datafilled in table STDPRTCT before datafilling table PXLAMAP.

#### **4.1.7.2 Modifying generic PXLAMAP data for office or AIN service**

When the AIN services do not support international or operator calls, the tuples with RCNAMEs reflecting these call types are required.

When the office supports only individual or customer group triggers, table PXLAMAP would require only the pretranslator for each subscribed agent. For office-based triggers, every pretranslator of each agent would be required.

**4.1.7.2.1 Datafill for multiple public dialing plans** When there is more than one dialing plan, additional new pretranslators would be required to support the additional dialing plans.

*Note:* The number of new pretranslators depends on several factors.

The example in Table 49 depicts sample datafill for two lines in different LATAs. Assume that the international carriers are the same for both LATAs.

**Table 49 Sample datafill for two lines in different LATAs**

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACALL	P622	(XLA NAT2) \$
NACAR	P621	(XLA NAT) \$
NACAR	P622	(XLA NAT2) \$
INCALL	P621	(XLA INT) \$
INCALL	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$
INCAR	P622	(XLA INT) \$

*Note:* The same pretranslator can be used for all international calls. Different pretranslators are used for national calls to differentiate among inter-LATA and intra-LATA calls.

**4.1.7.2.2 Mapping RCNAMEs to reuse pretranslators** The generic datafill illustrates seven new pretranslators for a line originator. Depending on the office, these can be further reduced to four pretranslators. The main difference is that the generic datafill allows a different carrier operator to be selected based on whether the 10XXX was dialed.

When different carrier operators are not required, the generic datafill can be modified as in Table 50 for the a line originator.

**Table 50 Modified generic datafill**

RCNAME	XLANAME	Data
NACALL	P621	(XLA NAT) \$
NACAR	P621	(XLA NAT) \$

**Table 50 Modified generic datafill (Continued)**

<b>RCNAME</b>	<b>XLANAME</b>	<b>Data</b>
SUBCALL	P621	(XLA NAT) \$
SUBCAR	P621	(XLA NAT) \$
INCALL	P621	(XLA INT) \$
INCAR	P621	(XLA INT) \$
INOPER	P621	(XLA IOP) \$
INCAROP	P621	(XLA IOP) \$
NACAROP	P621	(XLA NCOP) \$
SUBCAROP	P621	(XLA NCOP) \$
CAROP	P621	(XLA NCOP) \$
BOCOP	P621	(XLA NCOP) \$
NACALL	PTRK	(XLA NAT) \$

#### 4.1.8 Table STDPRTCT

Table STDPRTCT and its subtable STDPRT are the main tables used in translating different call types. In the past, different call types were identified through unique digits datafilled in a standard pretranslator.

##### 4.1.8.1 Datafill to support AIN response translations without simplification

Any new pretranslator to map to in table PXLAMAP should be defined in table STDPRTCT before.

The generic STDPRTCT datafill provided in Table 51 is based on the following:

- The generic SSP is an equal-access end office (EAEO).
- The generic SSP supports a variety of AIN services that allow all types of national and international calls in the AIN response, including operator and carrier calls.
- The datafill used in the previous STDPRTCT example is used as reference material.

The RCNAMES used in Table 51 are from the generic RTECHAR example. When an office modifies table RTECHAR data, the following example should be modified accordingly.

**Table 51 Generic STDPRTCT datafill**

<b>STDPRTCT</b>	
NAT	(1) (1234) ... (national calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national calls. 10488 10488 EA DD 5 T NA 488 Y OFRT 700 5 15 N
	9501542 9501542 FGB DD 0 C542 Y OFR3 542 7 7
	... other carriers ... (similar datafill as pretranslators for carrier, NA call)
	2 410 N DD 0 NA
	411 411 T NP 0 OFRT 1 3 3 NONE
	412 510 N DD 0 NA
	... other N11 ... ... Note that the standard North American entries are interleaved.
	The following entry is required for home area codes that do not require billing. 613 613 N NP 0 NA
INT	(1) (123) .... (international calls)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 recursive translator for international calls. 10488 10488 EA DD 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (same datafill as pretranslators for carrier, IN call)
	The entry below is similar to the P621 translator for international direct dialed calls. 2 9 N DD 0 IN
NAOP	(1) (122) ... (national operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for national operator calls. 2 9 P OA 0 NA TOPS

**Table 51 Generic STDPRTCT datafill (Continued)**

<b>STDPRTCT</b>	
IOP	(1) (12) ... (international operator call)
	Subtable STDPRT
	The entry below is similar to the P621 translator for international operator calls. 2 9 P OA 0 IN TOPS
NCOP	(1) (127) ... (national carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for national carrier operator call. 10488 10488 EA OA 5 T NA 488 Y OFRT 700 5 15 N
	... other carriers... (similar datafill as pretranslators for carrier)
CAOP	(1) (127) ... (operator carrier call—no address present)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for “00” carrier operator call. 10488 10488 EA OA 5 T NO 488 Y OFRT 700 5 5 N
	... other carriers ... (similar datafill as pretranslators for carrier, “00” operator call)
ICOP	(1) (125) ... (international carrier operator call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the MCI1 translator for international operator calls. 10488 10488 EA OA 5 T IN 488 Y OFRT 701 5 15 N
	... other carriers ... (similar datafill as pretranslators for carrier, IN operator call)
NAPC	(1) (125) ... (NAP or access carrier call)
	Subtable STDPRT
	The entry for the carrier below is similar to the destination provided in the PTRK OZZ XXX call. 488 488 ET DD 3 MCI Y OFRT 900 3 15
	... other carriers ... (similar datafill OZZ XXX call)

#### 4.1.8.2 Modifying generic STDPRTCT data for an office or an AIN service

Most switches do not differentiate between carrier operator–no address and national carrier operator within STDPRTCT. When your office does not need to differentiate, only one of NCOP or CAOP needs to be datafilled.

Some AIN services do not need to support operator calls, and so the operator pretranslators are not required.

#### 4.1.9 Table HNPACONT.HNPACODE

Table HNPACONT and its subtable HNPACODE are probably the most straightforward to datafill for AIN response processing. In most instances, the tuples are already present.

The entry in table HNPACONT and subtable HNPACODE allows for 10-digit dialing of a number in the home numbering plan.

##### 4.1.9.1 Recommended datafill to support AIN response processing

The generic HNPACONT datafill provided in Table 52 is based on the fact that the generic SSP does not currently support dialing of the home NPA.

**Table 52 Generic datafill example**

HNPACONT	
613	984 1 (270) (1) (84) (0)
	Subtable HNPACODE
	613 613 HNPA 0



#### **CAUTION**

**Other table changes are required when 10-digit HNPA dialing is not supported in the network.**

The previous example allows for 10-digit translation of a home numbering plan area (HNPA). When other switches in the network cannot support 10-digit dialing, then additional entries in the routing table are required to delete the HNPA.

#### 4.1.10 Route mapping tables

The route mapping tables direct the call to a new route based on the RCNAME and a route derived by translations.

#### 4.1.10.1 Recommended datafill to support AIN response processing

Additional datafill for the route mapping tables is not required in the generic SSP because it already meets the following conditions:

- The generic SSP does not have routing based on bearer capability.
- The generic SSP supports 10-digit outpulsing of home numbering plan numbers.

However, when routing based on BC is supported or 10-digit outpulsing of home numbering plan numbers is not supported, datafill is required for an office or an AIN service.

#### 4.1.10.2 Routing based on bearer capability

The route mapping tables are currently used for routing based on bearer capability. Normally, the route derived from translations causes the use of standard facilities that support mainly voice communication. For some data calls, ISUP or ISDN facilities are required. Route mapping tables allow the DMS to map the standard facilities to the intelligent signaling facilities for data bearer capability.

As AIN uses other characteristics in conjunction with BC, the RCNAME that is derived from the response will probably not be the same as the RCNAME derived initially.

**4.1.10.2.1 Example 1** BC64K would be used initially; NA64K would be used to translate and route the AIN response, as in Table 53.

**Table 53 Datafill for example 1**

Type of access	RCNAME	Routing characteristic combinations
64kbps call	BC64K	(BC 64KDATA \$) \$
National Call (64kbps)	NA64K	(CDN NA (BC 64KDATA) \$) \$

**4.1.10.2.2 Example 2** When BC64K is datafilled in a route mapping table to select intelligent signaling facilities, the same tuple would need to be datafilled for NA64K as in Table 54.

**Table 54 Datafill for example 2**

RCNAME	INDEX	NEW INDEX
BC64K	10	510

**Table 54 Datafill for example 2 (Continued)**

RCNAME	INDEX	NEW INDEX
The following entry would be required:		
NA64K	10	510

#### 4.1.10.3 Options for offices supporting only 7-digit dialing plan for HNP

See Chapter 53:“Options for offices supporting only 7-digit dialing for home numbering plan”.

## 4.2 Sample TRAVERs for private lines and trunks (no simplification)

This section contains TRAVER examples of various call types during AIN response translations without activating the Response Translations Simplification feature.

### 4.2.1 Additional data required for AIN response translations in TRAVERs

Table RCNAME and table RTECHAR are datafilled as specified in the recommended datafill to support AIN response translations in a generic SSP, as shown in Figure 50 on page 180.

**Figure 50 Table RCNAME**

TABLE RCNAME
. NACALL
. NACAR
. SUBCALL
. SUBCAR
. INCALL
. INCAR
. INOPER
. INCAROP
. NACAROP
. SUBCAROP
. CAROP
. BOCOP

For the generic SSP, Figure 51 on page 181 illustrates the entries for table RTECHAR.

**Figure 51 Table RTECHAR**

```

TABLE RTECHAR
. NACALL (CDN NA $) $
. NACAR (CDN NA (TNS NA) $) $
. SUBCALL (CDN L $) $
. SUBCAR (CDN L (TNS NA) $ $)
. INCALL (CDN IN $) $
. INCAR (CDN IN (TNS NA) $) $
. INOPER (CDN IN (OSA PUBP) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $ $)
. CAROP (OSA PUBA (TNS NA) $) $
. BOCOP (CDN NA (OSA PUBP) $) (CDN L (OSA PUBP $) (CDN (OSA PUBP $) $)

```

When the SSP supports routing based on bearer capability, the above RTECHAR entries would be modified, as shown in Figure 52.

**Figure 52 Table RTECHAR modified**

```

TABLE RTECHAR
. NACALL (CDN NA $) (CDN NA (BC 3_1KHZ) $) $
. NACAR (CDN NA (TNS NA) $) (CDN NA (TNS NA) (BC 3_1KHZ) $) $
. SUBCALL (CDN L $) (CDN L (BC3_1KHZ) $) $
. SUBCAR (CDN L $) (CDN L (BC3_1KHZ) $) $
. INCALL (CDN IN $) (CDN IN (BC 3_1KHZ) $) $
. INCAR (CDN IN (TNS NA) $) (CDN IN (TNS NA) (BC 3_1KHZ) $) $
. INOPER (CDN IN (OSA PUBP) $) (CDN IN (OSA PUBP) (BC 3_1KHZ) $) $
. INCAROP (CDN IN (OSA PUBA) (TNS NA) $)
(CDN IN (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. NACAROP (CDN NA (OSA PUBA) (TNS NA) $)
(CDN NA (OSA PUBA) (TNS NA) (BC 3_1KHZ)) $
. SUBCAROP (CDN L (OSA PUBA) (TNS NA) $)
(CDN L (OSA PUBA) (TNS NA) (BC3_1KHZ)) $
. CAROP (OSA PUBA (TNS NA) $) (OSA PUBA (TNS NA) (BC 3_1KHZ) $) $
. BOCOP (CDN NA (OSA PUBP) $) (OSA PUBP $) (CDN L (OSA PUBP) $)
(CDN NA (OSA PUBP) (BC 3_1KHZ) $) (CDN L (OSA PUBP) (BC3_1KHZ) $)
(OSA PUBP (BC 3_1KHZ) $)$

```

In order to simplify the TRAVER examples, only the three entries shown in Figure 53 on page 182 are used. The impact on the IBN environment for other call types is similar to the three call types shown.

**Figure 53 Table XLAMAP**

```
TABLE XLAMAP
. NACALL CESN ( XLA PUBXLA)$
. SUBCALL CESN ( XLA PUBXLA)$
. NACAR CESN ( XLA PUBXLA)$
. SUBCAR CESN (XLA PUBXLA)$
```

There is only one entry in table XLANAME, as shown in Figure 54, because the office supports only one dialing plan.

**Figure 54 Table XLANAME**

```
TABLE XLANAME
PUBXLA
(NET N N N 0 N NDGT N N GEN ( LATTR 500) (EA NILC Y 0) $
```

All public calls from the AIN SCP that originate in the private environment use the new line attribute, as shown in Figure 55.

**Figure 55 Table LINEATTR**

```
TABLE LINEATTR
500 IBN NONE NT FR01 0 613 P722 L613 TSPS 10 NIL NILSFC LATA1 0 NIL NIL 00
```

The entries shown in Figure 56 map the RCNAME and pretranslator to obtain a new pretranslator based on call type.

**Figure 56 Table PXLAMAP**

```
TABLE PXLAMAP
. NACALL P722 ( XLA NAT)$
. NACALL P622 ( XLA NAT)$
. NACAR P722 ( XLA NAT)$
. SUBCALL P722 (XLA NAT)$
. SUBCALL P622 (XLA NAT)$
. SUBCAR P722 (XLA NAT)$
. INCALL P622 ( XLA INT)$
. INCAR P622 ( XLA INT)$
. INCAROP P622 ( XLA ICOP)$
. NACAROP P622 ( XLA NCOP)$
. SUBCAROP P622 (XLA NCOP)$
```

The new entries are pretranslators, as shown in Figure 57 on page 183.

**Figure 57 Table STDPRTCT**

```

TABLE STDPRTCT
NAT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T NA MCI Y OFRT 963 3 15 N
. 613 613 N NP 0 NA
. 819 819 N DD 0 NA
INT ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA DD 5 T IN MCI Y OFRT 700 5 25 Y
. 10488 10488 EA DD 5 T IN ITT Y OFRT 900 5 20 N
. 2 9 N DD 0 IN
INCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10234 10234 EA OA 5 T IN MCI Y OFRT 700 6 25 Y
NCOP ( 1) ( 0) 0
. SUBTABLE STDPRT
. 10488 10488 EA OA 5 T NA ITT Y OFRT 963 5 20 N

```

The entry shown in Figure 58 allows for 10-digit dialing of home numbering plan.

**Figure 58 Table HNPACONT**

```

TABLE HNPACONT
613 20 15 ( 0) ( 1) ( 0) ( 0) 0
. SUBTABLE HNPACODE
. 613 613 HNPA 0

```

#### 4.2.2 National call when the number returned is on the same SSP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 59 provides a sample TRAVER output for a national call with a returned number on the same SSP.

**Figure 59 Sample TRAVER output for a national call (returned number on the same SSP)**

```

>traver l 7226962 n cdn na 6136221243 ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND

```

**Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)**

```

TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $

```

**Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)**

```

. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) $)$ $
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 17) OPTL N N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

```

**Figure 59 Sample TRAVER output for a national call (returned number on the same SSP) (Continued)**

```

1 LINE                6136221243                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**4.2.3 National call - returned number returned is in the user HNP**

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320.

TRAVER 60 provides a sample TRAVER output for a national call, when the returned number is in the user HNP.

**Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP)**

```

>traver 1 7226962 n cdn na 6134257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.

TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:

```

**Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP) (Continued)**

```

AINPUB
  (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
  (EA GTE Y 9) $ $) $ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 425 425 DN 613 425
TABLE TOFCNAME
613 425 $
TABLE DNINV
613 425 7320 L HOST 01 0 0909
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR

```

**Figure 60 Sample TRAVER output for a national call (returned number is in on the user HNP) (Continued)**

```

. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6134257320          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

#### 4.2.4 National carrier call

The command line assumes that the originator is IBN line 6137226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488.

TRAVER 61 provides a sample TRAVER output for a national carrier call.

**Figure 61 Sample TRAVER output for a national carrier call**

```

>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.

```

**Figure 61 Sample TRAVER output for a national carrier call (Continued)**

```

Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
(NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
(EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 900 5 20 N
. SUBTABLE AMAPRT

```

**Figure 61 Sample TRAVER output for a national carrier call (Continued)**

```

. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 4 9 EA DD 0 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
EA:Local override does not apply to this call.
TABLE LATA1
LATA1 416258 INTER INTER STD

```

**Figure 61 Sample TRAVER output for a national carrier call (Continued)**

```

TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  900 CND EA INTNL SK 3
      S D OGEAITT
      N D ISUPOGITT 0 N N
      CND ALWAYS SK 2
      N D OGEAITT 15 D179 N
      N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT           4162581234           ST
2 ISUPOGITT        4162581234           ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```



---

## 5 AIN simplified response translations for private agents

---

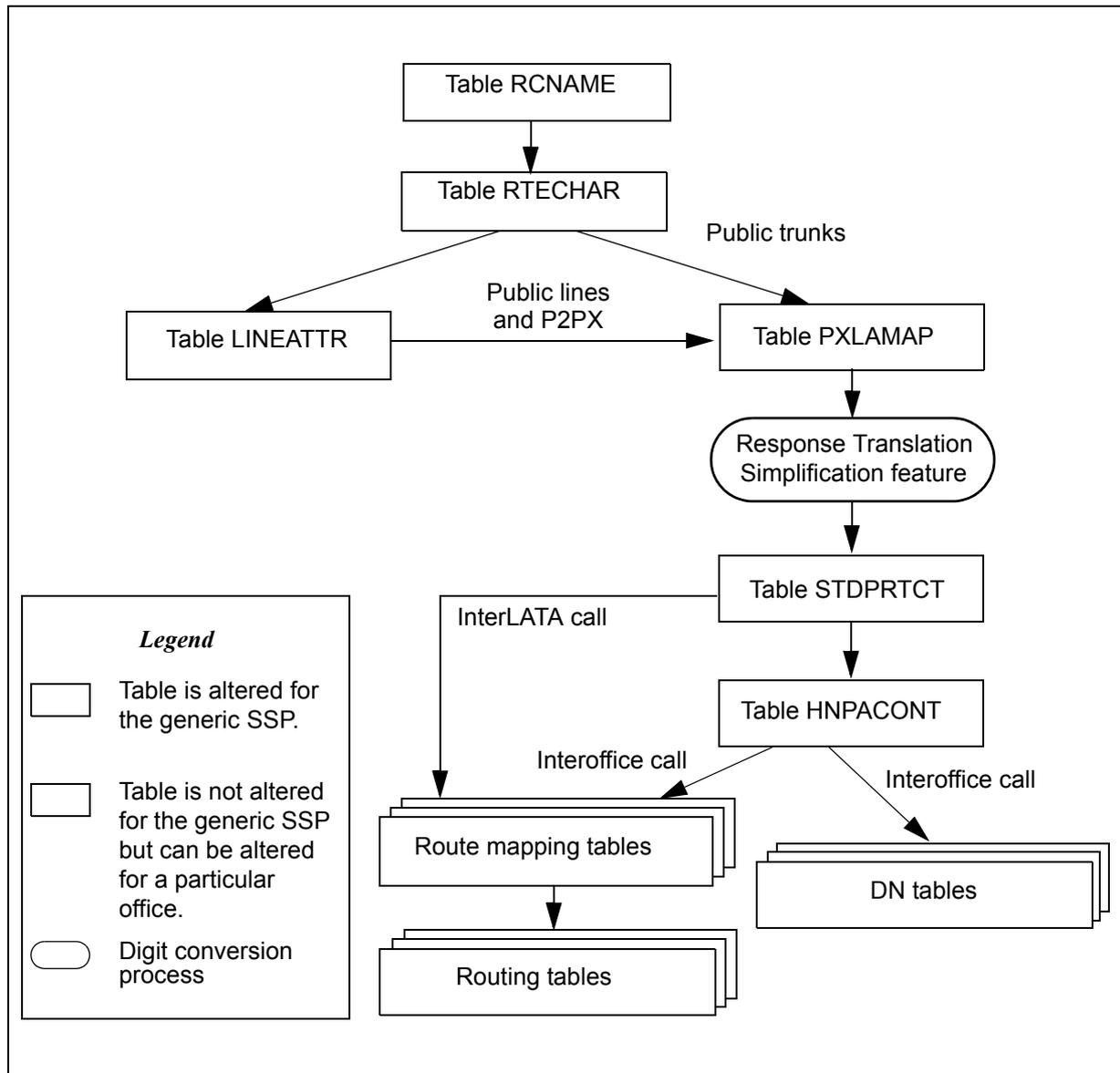
**CAUTION****Possible loss of service**

Incorrect translations can result in call failures or automatic message accounting (AMA) losses. To minimize the number of call failures, alter translations only during low-traffic periods.

The AIN response translations simplification feature has been introduced to reduce the amount of datafill required to support AIN response translation. This feature is used to convert the digits returned in the SCP response and convert them into a digit format that can reuse the triggering agent's translation datafill. See Table 42 on page 165.

Figure 62 on page 194 outlines the different tables needed for AIN simplified response translations for private agents and the relationship between these tables.

Figure 62 AIN table relationships for private agents - with simplification



For triggering private agents, the AIN Response Translations Simplification feature can be activated either in the private or in the public environment. When activated in the private environment, the feature converts the digits of the response in a format that can reuse private and public translation datafill. Whereas, when activated in the public environment AIN responses translation specific public network access datafill is required in table XLANAME and XLAMAP, but the converted digits can reuse the public translation datafill.

## 5.1 AIN response translations simplification in the private environment

This feature is activated by private lines and private trunks in the private environment under the following conditions:

- SOC AIN00026 is ON.
- No entry in table XLAMAP for any of the triggering agent's IBN translators (NCOS Prelim, CUSTHEAD Prelim, CUSTHEAD main).
- Option PUB\_NET\_ACC is datafilled in table NCOS or CUSTHEAD.

When response translations simplification is active, translations must be setup as described in Chapter 2: "AIN response translations for public agents" on page 47 . In particular, CDN L calls with OSA components do not trigger at the Operator\_Services trigger unless such translations are in place.

Travers for SCP responses with subscriberNumberOperatedRequested called party numbers and PRI Setup messages with a CDN L information element (when the response translations simplification feature is active) indicate that the number has undergone ISDN digit conversion, but there is no change in the digits.

### 5.1.1 Option PUB\_NET\_ACC

Option PUB\_NET\_ACC is available in tables NCOS and CUSTHEAD and it has two sub values PFX\_DIGITS and LINEATTR\_OPT used to provision the public network access digits (e.g. 9) and a line attribute index required by the simplification feature. The option can be datafilled in either table NCOS or CUSTHEAD or both.

PFX\_DIGITS is used to specify the public network access code that should be prefixed to the digits in the response to the public translation environment. A maximum of 5 digits can be specified in this parameter.

LINEATTR\_OPT is used to specify the line attribute index where conversion of the 10D response into 7D, 1+7D, 10D or 1+10D, for responses where Nature\_of\_number = National Number, is based. The line attribute index used with this option should be the same one used by the NCOS or CUSTHEAD pretranslator used to enters public translation environment.

**Note:** For response simplification, option PUB\_NET\_ACC of table LINEATTR is mandatory. When option PUB\_NET\_ACC is absent, the system does not perform response simplification.

The digit conversion process of the simplification feature is based on the following steps:

- Obtain PUB\_NET\_ACC option from table NCOS or CUSTHEAD for the triggering agent. Precedence order is: NCOS first, CUSTHEAD second. That is, when the PUB\_NET\_ACC option is not datafilled for the agent's NCOS, the PUB\_NET\_ACC for the agent's customer group is used.
- Convert digits in the response to a public dialing format using the line attribute index obtained from PUB\_NET\_ACC option.
- Prefix the public network access digits obtained from the PUB\_NET\_ACC option in front of the digits resulting from the previous step.

It is recommended that the PUB\_NET\_ACC option in CUSTHEAD be used for all agents in the customer group when possible. When required, PUB\_NET\_ACC can be datafilled in table NCOS to provide NCOS specific overrides of the custhead value.

### 5.1.2 Option PUB\_NET\_ACC in table NCOS

Option PUB\_NET\_ACC is datafilled in table NCOS when a specific NCOS has a different public network access code than the one used by the other NCOSs in the customer group, or needs a different line attribute to use for conversion than the one used for the customer group.

Table 55 describes an example of IBNXLA datafill corresponding to a customer group.

**Table 55 Example of IBNXLA datafill**

KEY	RESULT
PKDK0 6	NET N Y 1 Y POTS Y N GEN (LATTR 80 L416_LATA1_80 L416_LATA1_80) (EA NILC Y 0) \$
PKDK1 9	NET N Y 1 Y POTS Y N GEN (LATTR 0 613_PUB_0 L613_LATA1_0) \$
CKDK 9	NET N Y 1 Y POTS Y N GEN (LATTR 80 L416_LATA1_80 L416_LATA1_80) (TOLL TDN Y)

Table 56 describes the datafill in table LINEATTR for line attributes used in Table 55.

**Table 56 LINEATTR datafill**

LNATTIDX	DATA
0	IBN NONE NT 0 0 NILSFC 0 NIL NIL 00 613_PUB_0 L613_LATA1_0 \$
80	IBN NONE NT 0 0 NILSFC 0 NIL NIL 00 416_PUB_80 L416_LATA1_80 \$

Table 57 describes an example of XLAPLAN datafill.

**Table 57 XLAPLAN datafill**

<b>XLAPIDX</b>	<b>SCRNCL HSTS PRTNM ZEROMPOS RESINF OPTIONS ADMININF</b>
416_PUB_80	ATGO 416 PUB NONE N \$ \$
613_PUB_0	ATGO 613 PUB NONE N \$ \$

Table 58 describes an example of RATEAREA datafill.

**Table 58 RATEAREA datafill**

<b>RTAIDX</b>	<b>LCANAME MRSA LATANM ADMININF</b>
L416_LATA1_80	L416 NIL LATA1 \$
L613_LATA1_0	L613 NIL LATA1 \$

Table 59 describes datafill needed for table NCOS in order to activate the simplification feature.

**Table 59 Datafilling table NCOS with new option PUB\_NET\_ACC**

<b>CUSTGRP NCOS</b>	<b>DATA</b>
COMKODAK 0	KDK0 0 0 (XLAS PKDK0) (CBQ 0 3 N 2) (PUB_NET_ACC 6 (LINEATTR 80 416_PUB_80 L416_LATA1_80)\$)\$
COMKODAK 1	KDK1 0 0 (XLAS PKDK1) (CBQ 0 3 N 2) (PUB_NET_ACC 9 (LINEATTR 0 613_PUB_0 L613_LATA1_0)\$)\$
COMKODAK 2	KDK2 0 0 (CBQ 0 3 N 2)

### 5.1.3 Option PUB\_NET\_ACC in table CUSTHEAD

Option PUB\_NET\_ACC is datafilled in table CUSTHEAD to be used for the entire customer group except the ones that have the option datafilled in table NCOS. Table 60 on page 197 describes datafill needed for table CUSTHEAD in order to activate the simplification feature.

**Table 60 Datafilling table CUSTHEAD with the new option PUB\_NET\_ACC**

<b>CUSTNAME</b>	<b>CUSTXLA DGCOLNM IDIGCOL OPTIONS</b>
COMKODAK	CXDK KDK NIL (VACTRMT 0) (EXTNCOS 0) (ACCT 5 N N ) (FETXLA CUSTFEAT) (PLMXLA PXDK) (ERDT 7) (AUTH COMKODAK N N) (SUPERCNF )(OCTXLA CUSTSHRP) (ESAPXLA ESAKODAK) (PUB_NET_ACC 9 (LINEATTR 80 416_PUB_80 L416_LATA1_80)\$)\$

#### 5.1.4 Different digit streams produced by simplification

For call types other than National Direct Dial (CDN=NA) and National Carrier Direct Dial (CDN=NA and TNS=NA), the conversion rules are based on existing dial plan conventions:

- “0” is prefixed for national number operator requested
- “011” are prefixed for international number
- “01” are prefixed for international number operator requested
- “10XXX” or “101XXXX” are prefixed for carrier access

Public network access code specified in the PUB\_NET\_ACC option is then prefixed to the resulting digits.

Table 61 summarizes the digits used in translation after being converted by the Response Translations Simplification feature when the triggering agent is a private line or private trunk and where call types are national direct dial and national carrier direct dial.

**Table 61 Digits for private lines and trunks triggering agents**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	PFX+011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	PFX+0-	NIL	PUBP	NIL
National number, operator requested	10D	Not present	PFX+0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	PFX+01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	PFX+10XXX+011+(7-15)D	IN	NIL	NA
Legend IN - International NA - National NIL - Not present PUBA - Carrier operator PUBP - Public operator PFX: Public network access code defined in option PUB_NET_ACC in table NCOS or CUSTHEAD.						

**Table 61 Digits for private lines and trunks triggering agents (Continued)**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
No address present, operator requested	0D	0XXX	PFX+10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	PFX+10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	PFX+10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	PFX+101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	PFX+101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	PFX+101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	PFX+101XXXX+01+(7-15)D	IN	PUBA	NA
Legend						
IN - International						
NA - National						
NIL - Not present						
PUBA - Carrier operator						
PUBP - Public operator						
PFX: Public network access code defined in option PUB_NET_ACC in table NCOS or CUSTHEAD.						

For responses where CDN=NA, the conversion of the 10D (contained in the response) to a dial format is based on existing translation datafill in tables LCASCRCN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the originator's dialing plan. STS and LCANAME defined in the line attribute index in option PUB\_NET\_ACC are used as entries in tables HNPACONT and LCASCRCN.

When carrier ID is returned in the response, the carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The Local Exchange (LEC) carrier (carrier ID = 0110) is handled as if no carrier ID were present, therefore no carrier access digits are prefixed. The conversion is carried out as shown in Table 62.

The Operating Telephone Company (OTC) carrier is treated as a valid carrier ID, therefore carrier access digits are prefixed.

The National Number conversion process is based on the following logic:

- Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
  - Indexing HNPACODE with the 10D called number results in VCT HNPI.
  - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
- Table LCASCRCN datafill is used to determine when a call is local or toll.
  - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
  - When NPA is not found but the originator's NPA is equal to the called number's NPA, a check is made to see when the called NXX is datafilled in subtable LCASCR. When it is found, then it is local. This is to handle the case where a 7D local dialling plan exists within a NPA, and the NPA is not datafilled in LCASCRCN.
  - Otherwise, it is toll.
- Using PFXFOR10 of table LCASCRCN and the local/toll result from step 2, the called number is modified as follows:

**Table 62 Digit streams for call number modifications**

Digits after step 1	Local or Toll	PFX FOR 10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID = LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Local	N	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Toll	Y	Not Applicable	PFX+7D	PFX+10XXX+ (7)D	PFX+101XXXX+ (7)D
7D	Toll	N	Not Applicable	PFX+1+7D	PFX+10XXX+1+ (7)D	PFX+101XXXX+1+ (7)D
10D	Local	Y	N	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D

**Table 62 Digit streams for call number modifications (Continued)**

<b>Digits after step 1</b>	<b>Local or Toll</b>	<b>PFX FOR 10</b>	<b>Originator's NPA = Called NPA</b>	<b>Result when no Carrier ID is present or Carrier ID = LEC carrier</b>	<b>Result when 0XXX Carrier ID is present</b>	<b>Result when XXXX Carrier ID is present</b>
10D	Local	Y	Y	PFX+7D	PFX+10XXX+ 7D	PFX+101XXXX+ 7D
10D	Local	N	Not Applicable	PFX+10D	PFX+10XXX+ (10)D	PFX+101XXXX+ (10)D
10D	Toll	Y	Not Applicable	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D
10D	Toll	N	Not Applicable	PFX+1+10D	PFX+10XXX+1+ (10)D	PFX+101XXXX+1+ (10)D

## 5.2 Residential lines

In most configurations, residential (RES) lines do not need a public network access code to access the public environment. In this case, they do not require the PUB\_NET\_ACC option in table CUSTHEAD or NCOS. When the RES lines are configured such that a public network access code is used, then PUB\_NET\_ACC option is required.

## 5.3 Response translations simplification in the public environment for triggering private agents

Simplification feature can be activated in the public environment instead of being activated in the private environment. Table XLAMAP is used to provide access the public environment as described in Section 4.1.4 and then simplification feature is activated to convert the digits used in the public environment into a format that can reuse public pretranslator used for public translation.

The option of activating simplification feature in the public environment will avoid additional datafill required for response translations in the public environment as described in Section 4.1.7 and additional datafill required to support response translations in the private environment are still required.

Activating simplification feature in the public environment can be done under the following conditions:

- Feature AIN00026 SOC is ON.
- The conditions to activate the feature in the private environment are not satisfied.
- No entry in table PXLAMAP corresponding to the public pretranslator used in the public environment and the RCNAME derived from the response; or an entry exist in table PXLAMAP with the PREFIX selector present.

Note that simplification feature is activated only once. When it is activated in the private environment, it won't be activated in the public environment regardless of whether an entry exist in table PXLAMAP or not.

### 5.3.1 Table PXLAMAP

For private lines and trunks, when a simplification feature is to be activated in the public environment, no additional datafill is required for table PXLAMAP. In fact, simplification feature converts the digits used in response translations in the public environment into a format that can use the originator's pretranslator used in the public environment. No exceptions are produced.

Simplification feature supposes that digits are in the format described in Table 42 on page 165. This means that no digit manipulation should be done prior to activate simplification feature such as setting up prefix fence or deleting or adding digits.

Simplification feature produces the same digit streams produced when the feature is activated in the private environment without public network access code prefixed.

Table 63 summarizes the digits used in translation after being converted by the response translations simplification feature in the public environment when the triggering agent is a private line or private trunk and where call types are national direct dial and national carrier direct dial.

**Table 63 Digits for private lines and trunk triggering agents in the public environment**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
International number	7-15D	Not present	011+(7-15)D	IN	NIL	NIL
No address present, operator requested	0D	Not present	0-	NIL	PUBP	NIL

**Table 63 Digits for private lines and trunk triggering agents in the public environment (Continued)**

Nature of number in CalledPartyID	Digits (CDN)	Carrier ID	Digits produced by the feature and used in translations	CDN	OSA	TNS
National number, operator requested	10D	Not present	0+(10)D	NA	PUBP	NIL
International number, operator requested	7-15D	Not present	01+(7-15)D	IN	PUBP	NIL
International number	7-15D	0XXX	10XXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	0XXX	10XXX0-	NIL	PUBA	NA
National number, operator requested	10D	0XXX	10XXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	0XXX	10XXX+01+(7-15)D	IN	PUBA	NA
International number	7-15D	XXXX	101XXXX+011+(7-15)D	IN	NIL	NA
No address present, operator requested	0D	XXXX	101XXXX0-	NIL	PUBA	NA
National number, operator requested	10D	XXXX	101XXXX+0+(10)D	NA	PUBA	NA
International number, operator requested	7-15D	XXXX	101XXXX+01+(7-15)D	IN	PUBA	NA
Legend						
IN - International						
NA - National						
NIL - Not present						
PUBA - Carrier operator						
PUBP - Public operator						

For responses where CDN=NA, the conversion of the 10D (coming in the response) to a dial format is based on existing translation datafill in tables LCASCRCN and HNPACONT. The resulting digits are in 7D, 1+7D, 10D, or 1+10D format, being consistent with the originator's dialing plan. STS and

LCANAME defined in the line attribute index used to access the public environment are used as entries in tables HNPACONT and LCASCRCN.

When carrier ID is returned in the response, the carrier access digits 10XXX or 101XXXX are prefixed before the converted digits.

The Operating Telephone Company (OTC) carrier is treated as a valid carrier ID and carrier access digits are prefixed.

For the Local Exchange (LEC) carrier (carrier ID = 0110), no carrier access digits are prefixed. In this case, digit conversion is carried out as if no carrier ID were present, as shown in Table 64.

The National Number conversion process is based on the following logic:

1. Table HNPACONT datafill is used to determine when the 10D number should be converted to 7D or 10D. The conversion produces 7D (by removing the NPA) when one of the following conditions are met:
  - Indexing HNPACODE with the 10D called number results in VCT HNPI.
  - Originator's NPA is equal to the NPA of the 10D called number, and the HNPACODE subtable contains no entry for the NPA of the called number.
2. Table LCASCRCN datafill is used to determine when a call is local or toll.
  - When NPA and NXX of the called number are found in LCASCRCN then the call is considered as local.
  - When NPA is not found but the originator's NPA is equal to the called number's NPA, a check is made to see when the called NXX is datafilled in subtable LCASCR. When it is found, then it is local. This

is to handle the case where a 7D local dialling plan exists within a NPA, and the NPA is not datafilled in LCASCRCN.

- Otherwise, it is toll.

3. Using PFXFOR10 of table LCASCRCN and the local/toll result from step 2, the called number is modified as follows:

**Table 64 Called number modification**

Digits after step 1	Local or Toll	PFX FOR10	Originator's NPA = Called NPA	Result when no Carrier ID is present or Carrier ID = LEC carrier	Result when 0XXX Carrier ID is present	Result when XXXX Carrier ID is present
7D	Local	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Local	N	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	Y	Not Applicable	7D	10XXX+(7)D	101XXXX+(7)D
7D	Toll	N	Not Applicable	1+7D	10XXX+1+(7)D	101XXXX+1+(7)D
10D	Local	Y	N	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Local	Y	Y	7D	10XXX+7D	101XXXX+7D
10D	Local	N	Not Applicable	10D	10XXX+(10)D	101XXXX+(10)D
10D	Toll	Y	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D
10D	Toll	N	Not Applicable	1+10D	10XXX+1+(10)D	101XXXX+1+(10)D

**5.3.2 Optional removal of NPA where 1+10-digit dialing is mandatory**

Where CDN=NA, AIN Response Translation Simplification removes the NPA of the called number if all of the following conditions are true:

- SOC AIN00026 is ON.
- The call is local.
- Option PFXFOR10 is TRUE in Table LCASCRCN or Table LCAINFO.
- The NPA of the SCP number is the same as the originator's NPA.

Removal of NPA represents a problem in areas where 1+10-digit dialing is mandatory for toll and local calls. The removal of NPA results in a 7-digit number, and the call is sent to treatment. This is an undesirable effect.

Removal of NPA is made optional by the addition of field STRIPNPA in Table LCASCRCN and Table LCAINFO. When STRIPNPA is set to N, the NPA remains. When it is set to 'Y', the NPA is removed. This is illustrated in Table 65, and the applicable conditions are shown in bold:

**Table 65 Digit Conversion with STRIPNPA**

Digits after Step 1 (HNPACT)	Local/Toll	PFXFOR10	Originator's NPA = Called NPA	STRIPNPA	Result
7D	Local	Y	Not Applicable	Not Applicable	7D
7D	Local	N	Not Applicable	Not Applicable	7D
7D	Toll	Y	Not Applicable	Not Applicable	7D
7D	Toll	N	Not Applicable	Not Applicable	1+7D
10D	Local	Y	N	Not Applicable	1+10D
<b>10D</b>	<b>Local</b>	<b>Y</b>	<b>Y</b>	<b>N</b>	<b>10D</b>
<b>10D</b>	<b>Local</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>7D</b>
10D	Local	N	Not Applicable	Not Applicable	10D
10D	Toll	Y	Not Applicable	Not Applicable	1+10D
10D	Toll	N	Not Applicable	Not Applicable	1+10D

### 5.3.3 PODPATTR interactions with response translation simplification

See Section 3.2.6 "PODPATTR Interactions with response translation simplification" on page 115.

### 5.3.4 TRAVER enhancements for AIN response translations simplification

Option DIGCONV is added to TRAVER to support response translations simplification feature for private lines and private trunks.

The DIGCONV parameter is designed to be used during the operating company's datafill transition.

While the Response Translations Simplification feature is deactivated or “idle”, the operating company can specify that it would like to see the results of a digit conversion in a TRAVER via use of the DIGCONV parameter. TRAVERS performed without this parameter will not invoke the feature. Hence the operating company has the ability to determine the affect of this feature without the need to affect call processing. It also preserves the ability to produce a TRAVER for current datafill.

The DIGCONV parameter is an optional parameter that falls under the AINRES parameter (that is itself optional). Figure 63 shows how the DIGCONV parameter can be used in a TRAVER.

**Figure 63 TRAVER with the DIGCONV parameter**

```
TRAVER 1 7224531 N CDN NA 6137220000 AINRES R01 AR DIGCONV B
```

## 5.4 Sample TRAVERS for private lines and trunks with simplification

This section contains TRAVER examples of various call types during AIN response translations with simplification feature activated.

### 5.4.1 Simplification feature activated in the private environment

In this section, the traver examples shown in Chapter 4: “AIN response translations for private agents” on page 151 are reproduced with simplification feature activated in the private environment.

#### 5.4.1.1 Additional data required for AIN response translations to activate simplification feature in the private environment

Entries in table XLAMAP and PXLAMAP described respectively in Figure 53 on page 182 and Figure 54 on page 182 are removed. Entry in HNPACONT table Figure 58 on page 183 is changed and replaced with VCT HNPI as described in Figure 65.

**Figure 64 Table HNPACONT**

```
TABLE HNPACONT
613 20 15 ( 0) ( 1) ( 0) ( 0) 0
. SUBTABLE HNPACODE
. 613 613 VCT HNPI
```

Table CUSTHEAD is changed to include option PUB\_NET\_ACC as shown in Figure 65.

**Figure 65 Table CUSTHEAD**

CENTESN	CESN	CEN	NIL
(VACTRMT 0)	(EXTNCOS 0)	(ACCT 5 N N )	(PLMXLA CESN) (AUTH CESNAUTH N N) (ACR AUTH 0) <b>(PUB_NET_ACC 9 (LINEATTR 500) \$) \$</b>

**5.4.1.2 National call - number returned is within user HNP**

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320. TRAVER 66 provides a sample TRAVER output for a national call when the number returned is in the user HNP.

**Figure 66 Sample TRAVER output for a national call (number returned is in user HNP)**

```
>traver 1 7226962 n cdn na 6134257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 94257320
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
```

**Figure 66 Sample TRAVER output for a national call (number returned is in user HNP) (Continued)**

```

CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 42 44 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 425 425 HRTE 1
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 1 N D OTMF1 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL

```

**Figure 66 Sample TRAVER output for a national call (number returned is in user HNP) (Continued)**

```

. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OTMF1                4257320                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**5.4.1.3 National call when the number returned is on the same SSP**

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 67 provides a sample TRAVER output for a national call when the returned number is on the same SSP.

**Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP)**

```

>traver 1 7226962 n cdn na 6136221243 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND

```

**Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```

TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 96221243
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 622 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT

```

**Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```

613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) $)$ $
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136221243                ST

```

**Figure 67 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

**5.4.1.4 National carrier call**

The command line assumes that the originator is an IBN line 6137226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 68 provides a sample TRAVER output for a national carrier call.

**Figure 68 Sample TRAVER output for a national carrier call**

```
>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCCOMM 0 KDK
TABLE DIGCOL
KDK 1 RPT
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
. PUB_NET_ACC Option present in table CUSTHEAD.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 91048814162581234
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
```

Figure 68 Sample TRAVER output for a national carrier call (Continued)

```

. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. . N D ISUPITEAOG 0 D077 N
. . CND ALWAYS SK 1
. . N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE

```

**Figure 68 Sample TRAVER output for a national carrier call (Continued)**

```

. 416 416 HNP A 0
. 258 258 LRTE 719
. SUBTABLE RTEM A P
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNP A results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTR EAT
OPTL DD N DD UNDT
TABLE CLSVSCRC

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 ISUPITOG                4162581234                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

#### 5.4.2 Additional data required for AIN response translations to activate simplification feature in the public environment

Entries in table PXLAMAP described respectively in Figure 56 on page 182 are removed. Changes in Table CUSTHEAD to include option PUB\_NET\_ACC as shown in Figure 65 on page 208 are also removed.

##### 5.4.2.1 National call when the number returned is on the same SSP

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6136221243. TRAVER 69 provides a sample TRAVER output for a national call when the returned number is on the same SSP.

**Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP)**

```
>traver 1 7226962 n cdn na 6136221243 ainres r02 ar b
```

**Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```

Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6221243
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE

```

**Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```

BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 622 622 DN 613 622
TABLE TOFCNAME
613 622 $
TABLE DNINV
613 622 1243 P HOST 01 0 19 19 T1
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
613 622 1243
(PUBLIC (NONUNIQUE ) )$ $ $
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 622 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.

```

**Figure 69 Sample TRAVER output for a national call (returned number is on the same SSP) (Continued)**

```
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.
```

```
+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

```
DIGIT TRANSLATION ROUTES
```

```
1 LINE                6136221243          ST
```

```
TREATMENT ROUTES.  TREATMENT IS: GNCT
```

```
1 *OFLO
```

```
2 LKOUT
```

```
+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

#### 5.4.2.2 National call when the number returned is within the home numbering plan of the user

The command line assumes that the originator is an IBN line 6137226962 and the CalledPartyID = National Number 6134257320. TRAVER 70 provides a sample TRAVER output for a national call when the returned number is in the user HNP.

**Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP)**

```
>traver 1 7226962 n cdn na 6134257320 ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
```

**Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP) (Continued)**

```

COMKODAK PXDK CXDK FTCCOMM 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE XLAMAP
. CDNPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 4257320
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 425 425 HRTE 1
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
.   1 N D OTMF1 0 N N
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is resident.

```

**Figure 70 Sample TRAVER output for a national call (returned number is in the user HNP) (Continued)**

```
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 425 427
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OTMF1                4257320                ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

### 5.4.2.3 National carrier call

The command line assumes that the originator is an IBN line 4167226962, the CalledPartyID = National Number 4162581234, and the PrimaryCarrierID = 0488. TRAVER 71 provides a sample TRAVER output for a national carrier call.

**Figure 71 Sample TRAVER output for a national carrier call**

```
>traver 1 7226962 n cdn na 4162581234 tns na cic 0488 ainres r02 ar b
```

**Figure 71 Sample TRAVER output for a national carrier call (Continued)**

```

Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE KSETLINE
HOST 00 1 06 10 2 DN Y 7226962 COMKODAK 0 0 613 (3WC) (MSB) $ MBS
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 1 RPT
TABLE XLAMAP
. TNSPUB PXDK ( XLA AINPUB)$
TABLE IBNXLA: XLANAME AINPUB
TUPLE NOT FOUND
DEFAULT FROM TABLE XLANAME:
AINPUB
      (NET N N 0 N NDGT N N GEN ( LATTR 862 613_AIN1_862 L613_LATA1_0)
      (EA GTE Y 9) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
862 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN1_862 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN1_862 FR01 613 AIN1 TOPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 1048814162581234
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO

```

**Figure 71 Sample TRAVER output for a national carrier call (Continued)**

```

DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 900 5 20 N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 15 D179 N
. . N D ISUPOGITT 0 D179 N
. . EXIT TABLE OFRT
TABLE PXLAMAP
. . Tuple not found. Default to old pretranslator name.
. TABLE STDPRTCT
. PEAL ( 1) ( 0) 2
. . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. . 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 416 416 HNPA 0
. 258 258 LRTE 719
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 719 N D ISUPITOG 0 $ Y
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC

```

**Figure 71 Sample TRAVER output for a national carrier call (Continued)**

```
EA:Local override does not apply to this call.
TABLE LATAXLA
LATA1 416258 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   900 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
  900 CND EA INTNL SK 3
      S D OGEAITT
      N D ISUPOGITT 0 N N
      CND ALWAYS SK 2
      N D OGEAITT 15 D179 N
      N D ISUPOGITT 0 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAITT           4162581234           ST
2 ISUPOGITT        4162581234           ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```



---

## Part I Billing

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Part I: “Billing” consists of the following:

Chapter 6: “Billing” on page 227.

Chapter 7: “AMA structures and modules” on page 275.



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## 6 Billing

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AIN billing records are generated for all AIN Service Enablers triggers and events, including those for toll-free service and Send\_To\_Resource. Agents are supported as described in Chapter 4: “Agent support” on page 117.

The Bellcore AMA format (BAF) recording for advanced intelligent network (AIN) is used as defined in *AINGR: Switching Systems*, Bellcore, GR-1298-CORE, Issue 4, September 1997.

The DMS-100 SSP currently produces BAF records for AIN calls as specified by the service control point (SCP) and switch-based translations. The presence of an AMA service logic program identification (AMAslpID) parameter in a response message overrides switch-based AMA, and invokes AIN AMA recording. Switch-based call type is mapped into the AIN AMA structure (structure codes 0220 and 0221). Additional AMA information provided by the SCP as well as AMA information encountered in service switching point (SSP) translations can be appended to the base AMA structure in the form of modular codes. When the SCP response message does not contain an AMAslpID parameter, normal switch-based AMA recording applies to the call. When translations do not determine a base AMA call type, the default AIN call type (047) is used.

**Note:** AIN recording applies when there is an AMAslpID in a response message. There are however, exceptions when the call goes to treatment. See Table 70 on page 236.

### 6.1 Billing Areas

The following areas are discussed in this chapter:

- Call Type Codes
- structure record generation
- TCAP related AMA
- switch-based modules
- AMA affecting parameters
- AMA for AIN default routing

- Send\_To\_Resource billing
- Offer\_Call billing
- double carrier access record suppression
- alternate carrier routing
- Collect\_Information message
- Create\_Call message

### **6.1.1 Call Type Codes**

An AIN default Call Type Code (047) is created after a Continue, Disconnect, or Send\_To\_Resource response for the following triggers and events:

- trigger SDS
- O\_Called\_Party\_Busy trigger and event
- O\_No\_Answer trigger and event
- Network\_Busy event
- trigger Channel\_Setup\_PRI
- T\_Busy and T\_No\_Answer triggers and events
- Collect\_Info message
- Offer\_Call message

The information from translations and the originating agent does not affect the Call Type Code value in the AMA record. However, when local area screening and rate areas are not set up correctly, local calls can be interpreted as direct-dialed, resulting in an incorrect Call Code 006 “Station Paid”.

The Call Type Code produced after an SDS trigger and an Analyze\_Route response is based on the default AIN Call Type Code or switch-based translations.

When the SDS line attribute feature activates, the Call Type Code comes from the datafill value in the feature table.

### **6.1.2 Structure record generation**

The originating structure record generation function generates the appropriate AIN records for AMA billing based upon the parameters that are received by the SSP and provides the population criteria for these records in the originating call model.

#### **6.1.2.1 Product view**

The structure record generation function implements the Originating Structure Record Generation FS.

### **6.1.2.2 Recording for O\_No\_Answer and O\_Called\_Party\_Busy triggers and events**

Encountering one of these triggers in a call indicates a new call portion that causes a new record to be generated and populated.

Additional AMA records are generated when the O\_Called\_Party\_Busy or O\_No\_Answer events are encountered.

A separate AMA record is generated when one of the following situations occurs:

- an Analyze\_Route response (with AMAslpID) is received following an O\_Called\_Party\_Busy or O\_No\_Answer EDP-R
- a Continue response (with AMAslpID) is received following an O\_Called\_Party\_Busy or O\_No\_Answer EDP-R
- a Send\_To\_Resource message in a Response package (with AMAslpID) is received following an O\_Called\_Party\_Busy or O\_No\_Answer EDP-R

Parameters AMAMeasure and AMAslpID are processed in a Send\_To\_Resource message in a Conversation package. No other billing parameters are considered in a conversation package.

When the call reroutes after encountering an O\_Called\_Party\_Busy or O\_No\_Answer trigger, all previous AMA records are marked as Unanswered. See Section 6.4.2 , “Completion indicator field,” on page 234, for more details.

### **6.1.2.3 Recording for T\_Busy, T\_No\_Answer and Network\_Busy triggers and events**

Encountering one of these events or triggers in a call indicates a new call portion that causes a new record to be generated and populated.

When a NEL event reroutes the call, the AMA record produced for the response that armed the NEL event is marked as Unanswered. See Section 6.4.2 , “Completion indicator field,” on page 234, for more details.

### **6.1.2.4 Originating DN**

The billing records generated by routing attempt responses (for example, Analyze Route or Forward Call) received from the SCP in response to an

O\_Called\_Party\_Busy or an O\_No\_Answer event have the originating DN field populated as follows:

- Calling Party DN - when initially the NEL is received with Analyze Route in response to trigger Off\_Hook\_Delay
- SDS number - when initially the NEL is received with Analyze Route in response to an Info\_Analyzed query
- TAT DN - when initially the NEL is received with Forward Call in response to a Termination Attempt Trigger

#### **6.1.2.5 Recording for Prefix triggers and events**

The AIN Service Enablers trigger prefix feature enhances AIN Service Enablers trigger detection point (TDP) processing, by creating four triggers: Specified\_Carrier, One\_Plus\_Prefix, International, and Operator\_Services. The term Prefix triggers indicates the four triggers created by this feature.

Three of the Prefix triggers: (One\_Plus\_Prefix, International, and Operator\_Services) can be encountered based on a prefix dialed by the customer before the main digit string or based on prefix information received in an SCP/Adjunct Response message. Trigger Specified\_Carrier is encountered based on a carrier access code (CAC) prefix dialed by the customer before the main digit string. Trigger Specified\_Carrier can be encountered on an incoming trunk using the carrier selection information (CSI) Specified\_Carrier digit string. Info\_Analyzed is the TDP for these Prefix triggers.

AIN AMA produces records for these triggers according to GR-1298-CORE requirements for non-SDS Info\_Analyzed triggers. Messages sent by the SCP in response to these triggers (with parameter AMAslpID) cause existing records to merge into AIN records. When there is no existing record, the system generates a new AIN record. The generated structure code is 0220 when parameter AMAslpID is present. When no AMAslpID is present, record generation is based on switched-based AMA rules.

## **6.2 TCAP related AMA**

The TCAP-related AMA function implements the TCAP-related AMA FS.

### **6.2.1 Overview**

The TCAP related AMA function defines the SCP based modules that can be appended to a billing record and also defines the TCAP parameters received in an SCP or adjunct response message that causes the individual modules to be appended.

Two TCAP parameters are supported:

- AMAMeasure
- AMAMeasurement

The reply sent from the SCP can contain the above optional parameters that are utilized by the SSP billing function. Table 66 illustrates the parameters and the associated modules implementation.

**Table 66 AIN AMA recording parameters**

SCP parameters	Module name	Module number
AMAMeasure	Resource timing	Module 290
AMAMeasurement	N/A	Module 290

### 6.2.2 AMAMeasure parameter

Parameter AMAMeasure describes the request for the SSP to make a duration time measurement that measures how long the user is connected to a resource that is located either within the SSP or at an IP. When this parameter with the value of “connectTimeRecordedDestinationSSP” along with the AMAslpID parameter is received in a Send\_To\_Resource message by the SSP, the SSP creates the Resource Timing Module.

The AMAMeasure parameter is sent from the SCP to the SSP in the Send\_To\_Resource message. Values of “connectTimeRecordedDestinationSSP” or “connectTimeRecordedDestinationSCP” indicate that the SSP should measure the duration time the call is connected to an Intelligent Peripheral (IP) or an internal SSP resource. This timing for a connection to an IP starts when the SSP receives a CONNect message from the IP, and ends when one of the following events occur: On-hook from calling party, SSP sends a clearing message, or the SSP receives a clearing message. When timing for connection to an internal resource is to be recorded, the SSP measures the duration time associated with the actual connection of the calling party to the internal resource.

When the value of the AMAMeasure parameter in the Send\_To\_resource message is “connectTimeRecordedDestinationSSP” (and an AMAslpID was sent), the SSP records the duration timing in the Resource Timing Module (MC 290).

When the value of the AMAMeasure parameter is “connectTimeRecordedDestinationSCP”, the SSP returns the timing information to the SCP in the AMAMeasurement parameter of the Resource\_Clear message. The AMAslpID is not needed for this timing to take

place and be returned to the SCP. In fact, the AMAslpID is ignored by the DMS switch when it is included with the AMAMeasure parameter value of “connectTimeRecordedDestinationSCP”

The AMAMeasure parameter is processed in both a Response package and in a Send\_To\_Resource message in a Conversation Package. It is controlled by SOC option AIN00220.

The resource timing module 290 is defined for AMA in both AIN Essentials and AIN Service Enablers.

### 6.2.2.1 Module code 290

Module Code 290 is appended to AIN AMA records when the SSP has received a Send\_To\_Resource (STR) message with an AMAslpID and an AMAMeasure with a value of “connectTimeRecordedDestinationSSP”. The SSP records the duration of a connection to a resource (IP or internal). Module code 290 consists of the fields shown in Table 67. Since multiple STR messages can be received by the SSP in one call leg, the resource timing module (MC 290) must be repeated.

**Table 67 Resource timing module 290**

Information	Table number	Number of characters
Module Code	88	4
Service Logic Identifier	77	10
Trigger Sequence Number	802	4
Start Date	6	6
Timing Indicator	7	6
Start Time	18	8
Elapsed Time	19	10
Resource Type	608	4
Destination Address NPA	13	4
Destination Address	14	8

The Trigger Sequence Number is not a supported field and is data-filled as “FFFF” (that is, unused). The Resource Type field indicates whether the resource was an IP or an SSP internal resource. The rest of the fields already exist.

### 6.2.3 AMAMeasurement parameter

The AMAMeasurement parameter provides the duration time measurement that was requested by the AMAMeasure parameter in a Send\_To\_Resource message.

The AMAMeasurement parameter is added to the Resource\_Clear message. This contains the resource connection duration timing being sent back to the SCP. The field AMATimeGuard is part of the AMAMeasurement parameter and the AMATimeGuard will indicate the validity of the timing measurement.

This parameter is controlled by SOC option AIN00220.

## 6.3 Switch-based modules

The Switch-Based Modules FS groups these modules based on non-AIN switch processing or switch features; those that are not based on the presence of TCAP parameters received from the SCP.

### 6.3.1 Product view

The switch-based module implements the Switch-Based Module FS.

### 6.3.2 Indicator module

The indicator module identifies conventional AMA records as preceding an AIN trigger when record contains timing and completed call status in the Called Party Off Hook indicator field.

A module 204, is defined for AMA in both AIN Essentials and AIN Service Enablers.

#### 6.3.2.1 Module code 204

This module is appended to non-AIN AMA records prior to the SDS, O\_Called\_Party\_Busy and O\_No\_Answer triggers and events that do not contain the final routing number in the Terminating Number fields (BAF Tables 16 and 17). Module code 204 consists of one field: BAF Table 610.

**Table 68 Indicator module 204**

Information	Table number	Number of characters
Module Code	88	4
Indicator Identification	610	4

---

Table 610 has two values as show in Table 69.

**Table 69 BAF Table 610**

<b>Value</b>	<b>Meaning</b>
1	Not Final Route (AIN query encountered on structure's terminating number)
2	O_Called_Party_Busy or O_No_Answer trigger/event encountered, or Network_Busy NEL encountered

### **6.3.3 ISDN module**

When an ISDN call originator encounters an SDS trigger, the first record only has the ISDN modules appended to it, not the post query record; except for ISDN modules 180 and 181.

### **6.3.4 MDR module**

When a post query record is generated for a customer that is using MDR capabilities, then MDR modules are appended to the post query record.

### **6.3.5 WATS module**

When the originating call agent is a WATS line, then the WATS module code is not appended to the post query record.

## **6.4 AMA affecting parameters**

The AMA affecting parameters FS describes procedures and generation criteria when non-AMA TCAP parameters are received by the SSP.

### **6.4.1 Product view**

AMA affecting parameters implements the AMA Affecting Parameters FS.

### **6.4.2 Completion indicator field**

The "Completion Indicator" field of the AIN billing record contains the same information as the "AnswerIndicator" field of the SSP-based billing record. In this chapter, the term "Completion Indicator" is used for both AIN and SSP-based billing records.

---

For scenarios with one or more NELs in a call leg, the following conditions apply:

1. For call scenarios where an O\_CPB or O\_NoA EDP-R is followed by a Continue response:
  - records for all (NEL EDPR - response) have a completion indicator value of the final call disposition (001 or 006, 007)
  - all other records are marked “Pre-final Route” according to the final call disposition: 009 (Pre-final route, final call disposition completed) or 010 (Pre-final route, final call disposition not completed).
2. When the last EDP-R receives a response that is a NEL routing message (Analyze\_Route, Forward\_Call, or Collect\_Info) then the following conditions apply, rather than (1) above:
  - the record for the final (EDPR- response) has a completion indicator value of the true call disposition (001 or 006, 007)
  - records for all (except the final) (EDP-R+ response) have a completion indicator value reflecting what occurred at the terminating DN returned in the response message, rather than reflecting the final call disposition; this includes (006, 007)
  - the record for any other (Query-Reponse+NEL) has a completion indicator value reflecting what occurred at the terminating DN returned in the response message rather than reflecting the final call disposition; this includes (006, 007, 009, 010). When the terminating DN returned in the response message rings or is busy, a 006 or 007 is produced. When the response does not route to a real DN (that is, it goes to an SDS number), then pre-final route indicators, 009 or 010 is produced.
  - for any other records [for (Query+Response) packages not involving NELs] the Completion Indicator is populated according to requirements for those messages.

For examples, see Section 6.13.10 , “Multiple extended TCAP transactions (METT),” on page 271.

Completion Indicator value 014 (Pre-final route, NEL follows) was removed; 009 (Pre-final route, final call disposition complete) and 010 (Pre-final route, final call disposition incomplete) replace the removed completion indicator.

An additional completion indicator value was added to BAF table 280 (value 15 “Not Completed: Call Sent to Treatment”). This value was

added along with the four values introduced in the NA008 product release. Value 15 is used only with AIN structure codes of 0220 and 0221.

**Table 70 completion indicator summary**

Completion indicator meaning	Value	Population criteria
"AIN Pre-final route record - final call disposition completed"	9	When the SSP receives an off-hook indication from the terminating access facility and the "final routing" number for this record is not available.
"AIN Pre-final route record - final call disposition not completed"	10	When the SSP does not receive an off-hook indication from the terminating access facility or is not able to complete the call for any reason and the "final routing" number for this record is not available.
"Not Completed, AIN SCP requested release time (Disconnect message received)"	11	When the Disconnect message is received in the response message of a transaction initiated by a originating or terminating BCM trigger and an AMAspID parameter is received.
"AIN Pre-final route record - NEL follows"	14	Not used as of the NA013 product release. Values 009 and 010 replace 014.
"Not Completed: Call sent to treatment"	15	<p>When the call cannot complete because the call was sent to one of the following treatments:</p> <ul style="list-style-type: none"> <li>• vacant code (VACT)</li> <li>• unassigned number (UNDN)</li> <li>• blank directory number (BLDN)</li> </ul> <p>All other treatments applied during AIN calls do not produce AIN billing records.</p> <p>See Chapter 20.24.3: "Billing features limitations and restrictions" on page 701</p>

These completion indicator values provide a more accurate representation of true call disposition.

See Chapter 20.24.10: "Emergency service limitations and restrictions" on page 705.

## 6.5 Default routing AMA

The default routing AMA function implements the Default Routing AMA FS.

### 6.5.1 AMA for default routing

The default routing AMA function describes what the SSP should do in the event that the SSP receives no SCP response to a query due to error processing. Default routing is invoked so that the billing system will have an indication of what occurred on the call.

When default AIN routing is invoked (due to some error conditions), a Structure Code 0220 record is generated and the AMAslpID (BAF Table 77) is populated with the value of AIN default routing: “900000000”. This affects AIN Essentials and AIN Service Enablers.

## 6.6 Send\_To\_Resource AMA

Send\_To\_Resource billing includes the use of module code 290, based on the value of the AMAMeasure TCAP parameter. AMAMeasurement is also supported. See Section 6.2 “TCAP related AMA” on page 230.

The Send\_to\_Resource (STR) message can be sent by the SCP in either a Conversation Package or in a Response Package. When the STR message is received in a Conversation Package, the SSP must return a Resource\_Clear message to the SCP, when the STR operation is finished and waits for further information from the SCP. When the STR is sent within a Response Package then it can not contain a DestinationAddress parameter and must contain a DisconnectFlag Parameter. When the preceding two parameter conditions are true, then the SSP does not return a Resource\_Clear message, and does not wait for a final TCAP response. The SSP will close this Response Package and process the STR as a final response.

Recording (for AMA purposes) of the elapsed connection time (with IP or internal resources) is controlled by the AMAMeasure and AMAslpID parameters in the STR. When the STR has an AMAslpID and an AMAMeasure value of “connectTimeRecordedDestinationSSP” a Response Timing Module (Code 290) is appended to the AIN structure code record. See Section 6.2.3 , “AMAMeasurement parameter,” on page 233.

AMAslpID fields in the AIN structure and the MC0290 are populated as follows:

- The SSP generates structure code 220/221 for the transaction using the Bellcore-defined, AMAslpID value of ‘900000050’ in the structure and a

Call Type Code of '047' in the structure when all of the following conditions apply:

- A Response Timing Module (Code 290) is generated using the requirements of Section 9.7.2.7 of GR-1298 and the AMAslpID field of the Module is populated with the AMAslpID of the STR.
- The final response message from the SCP following the completion of an STR connection either does not contain an AMAslpID or the STR itself was sent in a response package.
- When the STR is returned in a Conversation Package and the final response has an AMAslpID, the final response's AMAslpID is populated in the structure and the STR's AMAslpID is populated in the MC0290.

Figures 72 and 73 give examples of when the STR AMAslpID are used (both examples assume the AMAMeasure value will require SSP timing recording). In Figure 72 the STR is received in a response package, the new STR AMAslpID value (900000050) is put into the Structure 0220 and the AMAslpID received in the STR is put into the Module Code 290 appended to the SC 0220. In figure 73 the STR is received in a conversation package but the final response does not have an AMAslpID, the new STR AMAslpID value (900000050) is handled in the same manner as when the STR is in a response package. See Figures 74 and 75 for examples of the AMA records for this feature before and after NA010 processing of the AMAMeasure parameter with a value of "connectTimeRecordedDestinationSCP".

Figure 72 Orphan MC290 Scenario - STR in Response Package

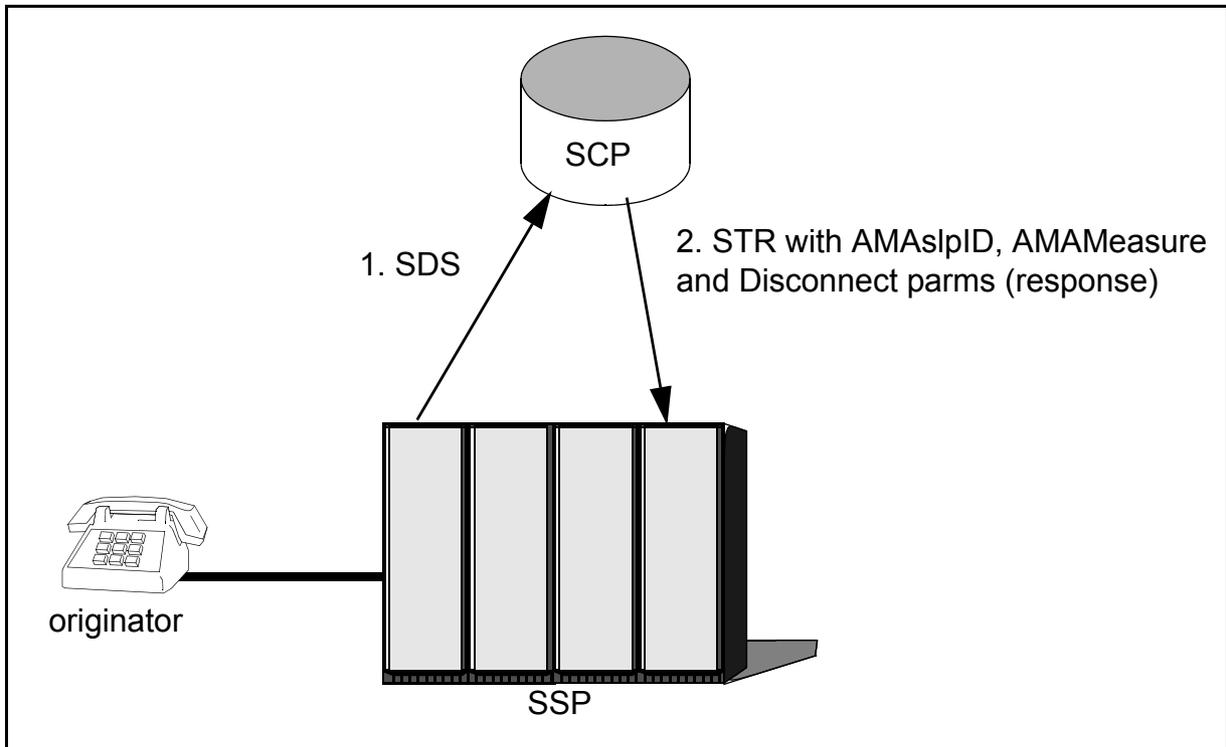
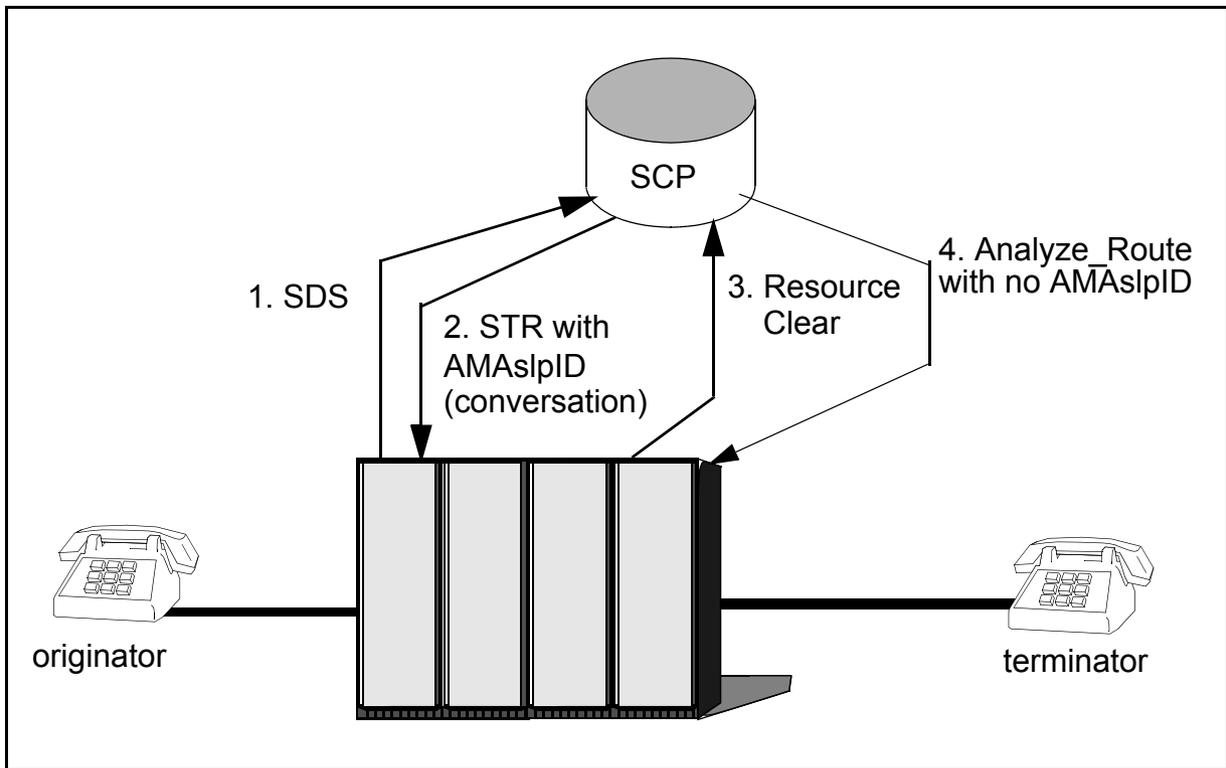


Figure 73 Orphan MC290 Scenario - STR in Conversation Package



**Figure 74 Pre-NA010 AMAMeasure Service Logic Identification**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:70530C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:800C ORIG NUMBER:8112000C
OVERSEAS IND:1C TERM NPA:00613C TERM NUMBER:6211512C
CONNECT TIME:1157473C ELAPSED TIME:000000075C SLP ID:111222333C
MODULE CODE:290C SLP ID:111222333C TRIGGER SEQUENCE NUMBER:FFFF
DATE:70530C TIMING IND:00000C CONNECT TIME:1157251C
ELAPSED TIME:000000103C RESOURCE TYPE:004C DESTINATION NPA:335C
DESTINATION ADDRESS:7224914C MODULE CODE:039C SLP ID:333444455C
MODULE CODE:000C
```

**Note:** Module Code 039 is included when the STR is received in a conversation package and the final response has an AMAslpID.

**Figure 75 Post-NA010 AMAMeasure Service Logic Identification**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:70530C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:800C ORIG NUMBER:8112000C
OVERSEAS IND:1C TERM NPA:00613C TERM NUMBER:6211512C
CONNECT TIME:1157473C ELAPSED TIME:000000075C SLP ID:333444455C
MODULE CODE:290C SLP ID:111222333C TRIGGER SEQUENCE NUMBER:FFFF
DATE:70530C TIMING IND:00000C CONNECT TIME:1157251C
ELAPSED TIME:000000103C RESOURCE TYPE:004C DESTINATION NPA:335C
DESTINATION ADDRESS:7224914C MODULE CODE:000C
```

**Note:** The Module Code 039 is not appended. The value for the final response's AMAslpID is store in the Structure.

When a Send\_To\_Resource message contains an IP DN requiring use of IC facilities for call routing, and the AMAslpID parameter is not received with the Send\_To\_Resource message, the SSP generates a carrier access record (Call Type 110, Structure 0625) with the originating DN as the triggering number and the terminating DN as the IP DN. The special AMAslpID parameter 900000050 is used when no AMAslpID is received in the final response message.

When the resource timing module is to be generated for connection involving IC facilities, the SSP generates an AIN AMA record (Call Type Code 110, Structure Code 0220) with the originating DN as the triggering number and the terminating DN as the IP DN. The AMAslpID in the Send\_To\_Resource message is used in the AMA record.

When Destination Address based line attributes are applicable to the Send\_To\_Resource transaction, the attributes are the originating DN for the

Send\_To\_Resource transaction records. This is applicable to the Send\_To\_Resource transaction only, not to subsequent triggers/responses in the further legs of the call.

Carrier Access record generation is controlled by the BILLING option provided while the Send\_To\_Resource specific Destination Address based line attributes are available in Table STRATTRS. When the BILLING option is set to N in the corresponding tuple, no Carrier Access Record (Switch based or AIN AMA record) is generated. When the corresponding tuple is not available, the Carrier Access record is generated as the default.

### **6.6.1 Send To Resource and Connect To Resource AMA enhancements**

The enhancements in AMA for SendToResource and ConnectToResource are done as per the modifications in GR 1298, Chapter 9 requirements. The following are the affected areas.

#### **6.6.1.1 IP Connection Using Interexchange Carrier Facilities**

The GR1298 (V.7) dictates new requirements for Send To Resource when used to access an IP over Interexchange Carrier (IC) facilities (typically FGD facilities). If an AMAsIpID parameter is received with the Send\_To\_Resource message, then a separate AIN record will be generated for the IP connection, and Module 290 will not be generated. Since this separate AIN AMA record will contain the IP interaction duration in the customer elapsed time field, as well as the AMAsIpID in the structure, generation of Module Code 290 will not be necessary. If no AMAsIpID parameter is received with the Send\_To\_Resource, then a switch-based access record will be generated for the connection to the IP. The AIN or switch-based record is generated regardless of the receipt of the AMAMeasure parameter and its value. The changes are applicable for both STR and CTR.

It should be noted that no Module Code 290 will be generated, and neither an AIN AMA Record nor a Switch-based record will be generated for the IP call over an IC, regardless of whether the AMAMeasure parameter is present or not. Although it appears that the SCP can ignore the presence of the AMAMeasure parameter for AMA purposes, the SSP shall not ignore the AMAMeasure parameter for call processing purposes. For example, if the AMAMeasure parameter is sent with the value that indicates that the SCP needs the IP duration (i.e., “connectTimeRecordedDestinationSCP”), the SSP shall return the start date and time and the duration time measurement to the SCP/ Adjunct in an AMAMeasurement parameter as per requirements.

Call Sample:

- Party A calls an SDS number.
- SSP queries the SCP for the dialed SDS number.

- SCP sends an STR in conversation package with a destination address, primary carrier, AMASLPID and AMAMEASURE parameters.
- A is connected to IP for finite amount of time using the interexchange carrier.
- IP releases the connection and SSP reports a Resource\_Clear to SCP.
- SCP in turn sends an Analyze Route (AR) with called party = B.
- Party A is connected to Party B.

When AMA records are generated with enhancements in place, only the carrier record Call type = 110, is generated for STR. If the final response for the conversation (like AR in the example) also has an AMASLPID then a separate AIN record is generated as usual.

The following snip of AMA records generated from SSP shows the only carrier record generated for the Interexchange IP calls and there are no records for Module 290 generated. Similar record generation is done for CTR (Connect To Resource ) using IC to connect to IP.

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:110C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20423C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:008C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:909C ORIG NUMBER:5507777C
OVERSEAS IND:0C TERM NPA:00909C TERM NUMBER:5503333C
CONNECT TIME:1414246C ELAPSED TIME:000000000C SLP ID:111222333C
MODULE CODE:306C OLIP:031C MODULE CODE:021C IC/INC PREFIX:02221C
CC DATE:20423C CC TIME:1414167C ELAPSED CC:000000078C
IC/INC EVENT STATUS:001C TRUNK GROUP NUMBER:30638C ROUTING INDICATOR:0C
DIALING INDICATOR:2C ANI INDICATOR:0C MODULE CODE:000C
```

### **6.6.1.2 Consecutive AIN AMA Records with AMAslpID of 900000050**

When two or more “orphan” AIN AMA records (records with AMAslpID of 900000050) would be generated for consecutive Send\_To\_Resource messages, these resulting Module 290s would be appended to separate Structures. The Structures would contain the same DN in the originating number fields of Structure 0220 or terminating number fields of Structure 0221, the SSP shall only generate one of these structures and append both (or more) Module 290s to this structure.

This requirement is valid for consecutive STR and consecutive CTR. Also it is valid for scenarios where CTR is followed by STR also.

Another point to consider is that if one of the consecutive STR or CTR is using Inter Exchange Carrier then the Module 290 for that transaction is suppressed and the rest of the Module 290s will be appended and generated in the same record.

**Note:** Consecutive records here mean that STR or CTR in conversation package will have STR or CTR as response to Resource Clear or CTR\_clear messages respectively.

Call Example :

- Party A calls and SDS number.
- SSP sends a query to SCP for the SDS digits disled.
- SCP responds with a STR in conversation package carrying the destination address, AMASlpID1, AMAMeasure Parameter.
- A is connected to the IP resource.
- Resource clear is reported from SSP to SCP.
- SCP responds back with STR in response package with AMASlpID2, AMAMeasure parameter.
- Party A is disconnected after the final STR response.

Following is the AMA record generated with Module 290's for both the above STRs being appended in one single "orphan" record which is a record with AMASlpId = 900000050. The AMASlpIds of the two STRs can be distinguished in the two attached Module 290s to the same record.

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:008C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:613C ORIG NUMBER:7238888C
OVERSEAS IND:1C TERM NPA:00613C TERM NUMBER:7238888C
CONNECT TIME:1152474C ELAPSED TIME:000000000C SLP ID:900000050C
MODULE CODE:025C CIRCUIT DATE:20805C CIRCUIT TIME:1153094C
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1153062C ELAPSED TIME:000000001C RESOURCE TYPE:004C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:290C SLP ID:222111222C TRIGGER SEQUENCE NUMBER:FFFF
DATE:20805C TIMING IND:00000C CONNECT TIME:1153069C
ELAPSED TIME:000000018C RESOURCE TYPE:000C RESOURCE DESTINATION NPA:000C
RESOURCE DESTINATION ADDRESS:0000000C MODULE CODE:000C
```

### 6.6.1.3 Long Duration Enhancements

The "Orphaned Records" in this section refer to the AIN AMA Structure (either Structure Code 0220 or 0221) that contains the AMASlpID of

900000050 in the core structure. When this AIN AMA record is generated, one or more Module Code 290s will be appended to it. As long as the call remains in session, there is a possibility that additional Module Code 290s may be generated.

If long duration applies to this call, the record will be generated at the scheduled long duration record generation time when the proper conditions are met and any Module Code 290s that are appended to this record will only be appended to this record. Once the “Orphaned Record” is generated with the Module Code 290s appended to it, the SSP should not generate another “Orphan Record” unless additional Module Code 290s are created.

For example, if a long duration call has an “Orphan Record” with a Module Code 290 open, then at the next scheduled long duration record generation time, the SSP should generate this “Orphan Record” including the Module Code 290. For the rest of the call, if there are no additional Module Code 290s created, then there is no need to generate any “Orphaned Record.”

Thus, at the next scheduled long duration record generation time, or at the end of the call, the SSP should not generate any “Orphaned Record.”

The SSP shall append the Module Code 290s only to the generated long duration record, and not to any other long duration records generated there after (including the final record).

If no additional Module Code 290s have been created after the long duration record has been generated, the SSP shall

- suppress the generation of “Orphaned Record” as the final continuation record if the call does not reach the next scheduled continuation record generation time.
- suppress the generation of “Orphaned Record” at the next scheduled continuation record generation time.

If the call in the previous example did have additional Module Code 290s that were created after the long duration record was generated, the SSP should generate a new “Orphaned Record” and append these Module Code 290s to this record. Again, once these Module Code 290s are appended to this “Orphaned Record,” the SSP should not append these Module Code 290s to any other “Orphaned Records.” Hence for additional Module Code 290s have been created after the long duration record has been generated, the SSP shall

- Generate a new “Orphaned Record” and append the Module Code 290s if the call does not reach the next scheduled continuation record generation time after the previous long duration record has been already cut.
- Generate a new “Orphaned Record” and append the Module Code 290s only to this record at the next scheduled continuation record generation

time. This record (including the Module Code 290s) should not be generated again.

Please note that the additional 290s appended to the same record are for STR or CTR which came from SCP for a Resource Clear or CTR\_clear message sent from SSP for the previous STR or CTR respectively.

#### Call Examples

- NO continuation Record and NO Final-continuation records :
- A calls a party B subscribed to Termination Attempt trigger.
- Termatt trigger sends a query from SSP to SCP.
- SCP responds with a Authorize termination while arming a Timeout event of 24 hours.
- Party A continues to talk to B.(say A started talking to B at 11 am first day)
- Timeout event detected after the 24 hrs time expiry and sends a query to SCP.(11 am 2nd day)
- SCP responds with a CTR (leg id = 0) with destination address (IP) , AMAslpID and AMaMeasure parameters with other required parms.
- After CTR-IP conversation is over, a CTR Clear message is reported from SSP to SCP.
- SCP sends back a Continue response as a final response.
- At midnight at the end of second day the “first record” is generated which will have the AIN “orphan” record for the long duration record.
- Party A and B keep talking for another 48 hours.( i.e. till 11 am fourth day).
- The “Continuation Record” generated on the end of third day midnight will not re-generate the orphan record already generated for the purpose of CTR on the second day.

The following record example shows the AIN call record generated at the First record generation time of the long duration record. The same record is not generated at the next long duration continual record generation time and at the time when the call brought down before the next continual record generation time.

HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C  
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C  
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:001C  
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C  
CONNECT TIME:1207439C ELAPSED TIME:000001168C SLP ID:900000050C  
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C  
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C  
CONNECT TIME:1207400C ELAPSED TIME:000000004C RESOURCE TYPE:159C  
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C  
MODULE CODE:000C

#### **6.6.1.4 New “orphan” record generated for Resource connection after the long duration first or continuation record is cut**

- A calls a party B subscribed to Termination Attempt trigger.
- Termatt trigger sends a query from SSP to SCP.
- SCP responds with a Authorize termination while arming a Timeout event of 24 hours.
- Party A continues to talk to B.(say A started talking to B at 11 am first day)
- Timeout event detected after the 24 hrs time expiry and sends a query to SCP.(11 am 2nd day)
- SCP responds with a CTR (leg id = 0) with destination address (IP) , AMAslpID and AMAMeasure parameters with other required parms.
- After CTR-IP conversation is over, a CTR Clear message is reported from SSP to SCP.
- SCP sends back a Continue in response while arming a Timeout event with a timer of 24 hours. (Till around 11 am of 3rd day).
- At the end of the second day at midnight the first record for the long duration record is cut.This will have an ain “orphan record” with Module 290 for the CTR.
- A and B continue to talk till next 24 hours, then a timeout event is detected and a query sent to SCP.(Around 11am of third day)
- SCP responds with a CTR (leg Id = 0), in conversation package with announcement and digit collection.
- After announcement and digit collection at party A, CTR Clear reported to SCP.
- SCP responds with another CTR in conversation package with destination address, legId = 0, AMAMeasure and AMAslpId parms alongwith other required parms.
- After conversation of pty A with IP gets over a CTR Clear reported to SCP.

- SCP responds with a Continue response and clears the conversation in a transaction.
- The continuation record of the long duration record is generated at end of the third day at midnight. The orphan record will have all the consecutive resource connection Module 290s appended.
- Party A and B keep the connection alive for another 48 hours (till around 11 am of 5th day).
- The continuation long duration record at midnight on the end of 4th day will not have any Module 290 carrying orphan records re-generated.
- After the call ends on the 5th day the orphan records will NOT be re-generated.

The following record examples shows the CTR records with module 290 being generated as appended to the “orphan records”. As in the previous example we have one orphan record generated for the first CTR which happened on the first day of the call. Then there is a new orphan record generated for the two consecutive CTRs. These records are never regenerated at the following continual record generation time of the long duration call. Also, they are NOT re-generated when the call ends before the next continual record generation time (midnight by default) is reached for the call.

## CTR 1:

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:008C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C
CONNECT TIME:1212581C ELAPSED TIME:000000000C SLP ID:900000050C
MODULE CODE:025C CIRCUIT DATE:20805C CIRCUIT TIME:1214005C
MODULE CODE:306C OLIP:031C MODULE CODE:290C SLP ID:111222333C
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C
CONNECT TIME:1213035C ELAPSED TIME:000000000C RESOURCE TYPE:159C
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C
MODULE CODE:000C
```

```
RTP305BD AMA112 AUG05 12:14:00 4100 INFO LONG DURATION CALL
ORIG= HOST 03 0 09 02 DN 6137234529
TERM=
CLG NO= 6137234533
CLD NO= $
CONNECT TIME= 217/1212581 REPORT COUNT= 1
ANSWERED= N
```

HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C  
SENSOR ID:0619351C REC OFFICE TYPE:036C REC OFFICE ID:0619351C  
DATE:20805C TIMING IND:00100C STUDY IND:0200030C COMPLETION IND:001C  
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7234529C  
CONNECT TIME:1217243C ELAPSED TIME:000001363C SLP ID:900000050C  
MODULE CODE:306C OLIP:031C **MODULE CODE:290C SLP ID:111222333C**  
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C  
CONNECT TIME:1217189C ELAPSED TIME:000000001C RESOURCE TYPE:159C  
RESOURCE DESTINATION NPA:613C RESOURCE DESTINATION ADDRESS:7233333C  
**MODULE CODE:290C SLP ID:222111333C** TRIGGER SEQUENCE NUMBER:FFFF  
DATE:20805C TIMING IND:00000C CONNECT TIME:1216557C  
ELAPSED TIME:000000014C RESOURCE TYPE:001C RESOURCE DESTINATION NPA:000C  
RESOURCE DESTINATION ADDRESS:0000000C **MODULE CODE:290C SLP ID:222111333C**  
TRIGGER SEQUENCE NUMBER:FFFF DATE:20805C TIMING IND:00000C  
CONNECT TIME:1216532C ELAPSED TIME:000000018C RESOURCE TYPE:001C  
RESOURCE DESTINATION NPA:000C RESOURCE DESTINATION ADDRESS:0000000C  
MODULE CODE:000C

>open ama  
Done.

RTP305BD AMA112 AUG05 12:19:00 0800 INFO LONG DURATION CALL  
ORIG= HOST 03 0 09 02 DN 6137234529  
TERM= HOST 03 0 09 02 DN 6137234529  
CLG NO= 6137234533  
CLD NO= \$  
CONNECT TIME= 217/1217243 REPORT COUNT= 1  
ANSWERED= Y

## 6.7 Connect To Resource AMA

When the SSP receives a Connect\_To\_Resource message from the SCP/Adjunct containing an *AMAslpID* parameter, an *AMAAlternateBillingNumber* parameter, and no *AMASequenceNumber* parameter, the SSP generates a Module Code of 029.

The SSP generates a Structure Code 0220/0221 for the transaction using the *AMAslpID* parameter value “900000050” and a Call Type Code ‘047’ and appends Module Code 290, under the following conditions:

- A Resource Timing Module (Code 290) is generated, regardless of the Package type.
- The final response message from the SCP/Adjunct following the completion of a CTR connection does not contain an *AMAslpID* parameter, the CTR itself is the final response message, or the call terminates before the final response is received.

When the SSP receives a Connect To Resource message from the SCP/Adjunct that does not contain a Destination Address parameter, but does contain an *AMAMeasure* parameter indicating a duration time must be recorded, the SSP measures the duration time associated with the user’s actual connection to the internal SSP resource. The SSP generates a module code 290. Module 290,

Resource Timing Module, records the internal or IP resource usage measurements.

When the SSP receives a CTR message from the SCP/Adjunct containing an AMAslpID parameter, an AMAAlternateBillingNumber parameter, and an AMASequenceNumber parameter, the SSP generates a module code 229. The existing AIN and switch based records are closed as a normal exit after the call has been answered and the Disconnect response is received for the CTR message.

## 6.8 Offer\_Call billing

The Offer\_Call message can be sent by the SCP or Adjunct in response to the T\_Busy TDP event or trigger query. The Offer\_Call message allows the SSP to offer the call to the called party. The Offer\_Call message can contain parameter DisplayText. When this occurs, the SSP attempts to deliver this information to the called party.

The Offer\_Call message can offer features already enabled on the called party's line, such as call waiting (for a non-ISDN line) or additional call offering (for BRIs), to the called party.

The following parameters are allowed in the Offer\_Call message:

- CallingPartyID
- DisplayText
- ControllingLegTreatment
- AMA parameters
  - PrimaryBillingIndicator
  - AMAAlternateBillingNumber
  - AMABusinessCustomerID
  - AMALineNumber
  - AMAslpID
  - AMADigitsDialedWC

When the SSP cannot offer the call to the called party because a call is already waiting (for a non-ISDN line) or the call cannot be offered under additional call offering (for an ISDN BRI), then the call encounters the CFBL or (I-CFIB) feature when it is available. When the CFBL or I-CFIB feature is not available, a check is made on the originating call model to see whether the calling party is subscribed to OCPB. After the above checks have failed the SSP provides final treatment.

When the Offer\_Call response is received with parameter AMASlpID, AIN AMA records are generated, similar to the AIN AMA processing for the Continue message received in response to trigger T\_Busy. When no AMASlpID parameter is returned, only switch-based AMA can be recorded.

Offer\_Call is a response to triggers and events in the terminating call model and produces structure code 0221 with a CTC of 047 (AIN default).

## 6.9 Double carrier access record suppression

The DMS switch complies with the suppression of the pre-SDS query originating access record. Suppressed records are shown in Table 71 on page 250. These records are only suppressed when an Analyze\_Route response is received following trigger SDS. Other information (for example, ISDN, MDR, Study) that is recorded in the originating EA record is lost.

In NA013, AIN AMA continues to delete any pre-SDS originating EA records. Records are not re-generated when the originator has ISDN and/or Study/LCDR information that requires recording.

**Table 71 Suppressed CTCs**

CTC	Definition
110	InterLATA station paid
111	InterLATA WATS station detail
114	InterLATA WATS billing number
117	InterLATA PSDS
134	FGB originating

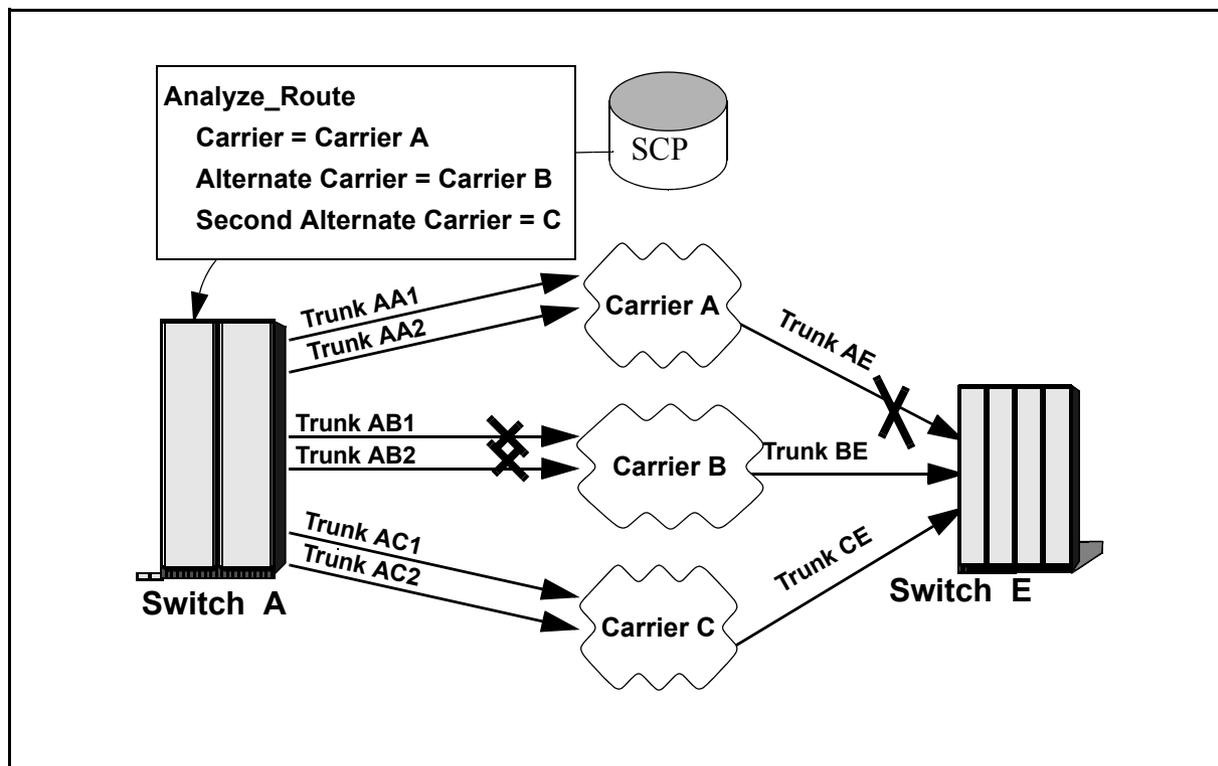
When a Continue response is received, pre-SDS query records are not suppressed and the post query record is converted into CTC 47. See Chapter 18: "Toll-free service".

## 6.10 Alternate carrier routing

Per Bellcore ILR - 11-2436, AIN AMA generates a record (structure code 220 when AMASlpID included in the response, otherwise SC 625) and includes or appends all needed carrier info for each carrier attempt that signals out of the office.

In the example shown in Figure 76, an AMA record is generated to record access charges for carrier A and carrier C. The switch sent IAMs for both Carrier A and C, thus access recording is needed. Carrier B was blocked (all trunks busy) intra-switch, an IAM was not sent, thus access recording is not needed.

Figure 76 ACR in an Analyze\_Route Response



## 6.11 Collect Information message

The Collect\_Information message sent from the SCP is a response to Info\_Analyzed, O\_Called\_Party\_Busy, O\_No\_Answer, Network\_Busy.

The Collect\_Information message returns the call to the Collect\_Information PIC in the AIN Call Model, that requires the switch to check the information in the CollectedDigits parameter against the dialling plan in force. The dial plan element(s) contained within the CollectedDigits parameter are then translated by the switch. Translations can determine several results including start-up of a switch-based feature, routing over a trunk, routing to a local DN on the switch or prompting caller for more digits.

When a Collect\_Info message contains an AMAsIpID parameter, then AIN AMA will generate the appropriate AIN AMA record per trigger type (structure code 0220). When the message contains a vertical service then the appropriate switch based AMA for that service is generated as well (for NA010, CLASS record SC 1030, CTC 330). The presence of an AMAsIpID is not necessary for the vertical service to generate a record.

## 6.12 Create\_Call message

The system generates AMA records when the originator accepts the Create\_Call message by going off-hook. When the originator does not go

off-hook, neither switch-based nor AIN AMA records are generated. (Unanswered recording does not apply.)

When the originator accepts the Create\_Call by going off-hook and an AMAslpID is present in the Create\_Call message, AIN AMA recording applies. When the system generates a record for Create\_Call, the record is always the first AIN record for that call scenario.

When the Create\_Call is accepted but no AMAslpID is present in the Create\_Call message, switch-based billing applies using existing requirements.

Whether or not the Create\_Call message has an AMAslpID, AIN AMA is generated for subsequent triggers according to existing requirements.

## 6.13 AMA call scenarios

The following sections describe some typical call scenarios where AMA records are generated. Specifically, the following types of calls are described:

- calls where non-AIN AMA records are appended with module code 204
- calls interacting with the following triggers:
  - O\_Called\_Party\_Busy
  - O\_No\_Answer
- calls interacting with the following events:
  - T\_Busy
  - T\_No\_Answer
  - Network\_Busy
- calls generating an AMA record with a completion indicator of 009
- calls using default routing
- calls involving the Send\_To\_Resource message
- calls involving multiple extended TCAP transactions (that is, multiple NELs in the originating call model)

*Note:* In the following examples, the call code generated in the various sample AMA records can vary, depending on switch translations.

### 6.13.1 AMA records with module code 204

This scenario assumes that the user has datafilled trigger SDS. See Figure 77 “AMA record call scenario with module code 204” on page 254. The

following steps describe the call flow for a call that uses trigger SDS and generates a non-AIN AMA record with module code 204:

1. Office-wide triggers are enabled.
2. Line A (2012220831) goes off-hook and dials SDS digits (5022220833).
3. The call encounters an SDS trigger. The SSP sends an Info\_Analyzed query message to the SCP.
4. The SCP returns a Continue response with an AMAslpID parameter (123456789) and a RRBCME arming the O\_No\_Answer event.
5. The call is not answered. The O\_No\_Answer timer expires.
6. The SSP sends an O\_No\_Answer EDP-R message to the SCP. The SCP responds with an Analyze\_Route message.
7. The Analyze\_Route message with a another AMAslpID parameter (987654321) and instructs the SSP to reroute the call to line C (2012220832).
8. The call is answered.
9. After all lines return to the on-hook state, a non-AIN AMA record is generated with call code 006, structure code 40500, and module code 204. See Figure 78 “Sample non-AIN AMA record with module code 204” on page 254.

**Note:** This scenario also produces AIN-specific AMA records. See Figure 79 “Sample one-AIN AMA record” on page 255 and Figure 80 “Sample two-AIN AMA record” on page 255.

Figure 77 AMA record call scenario with module code 204

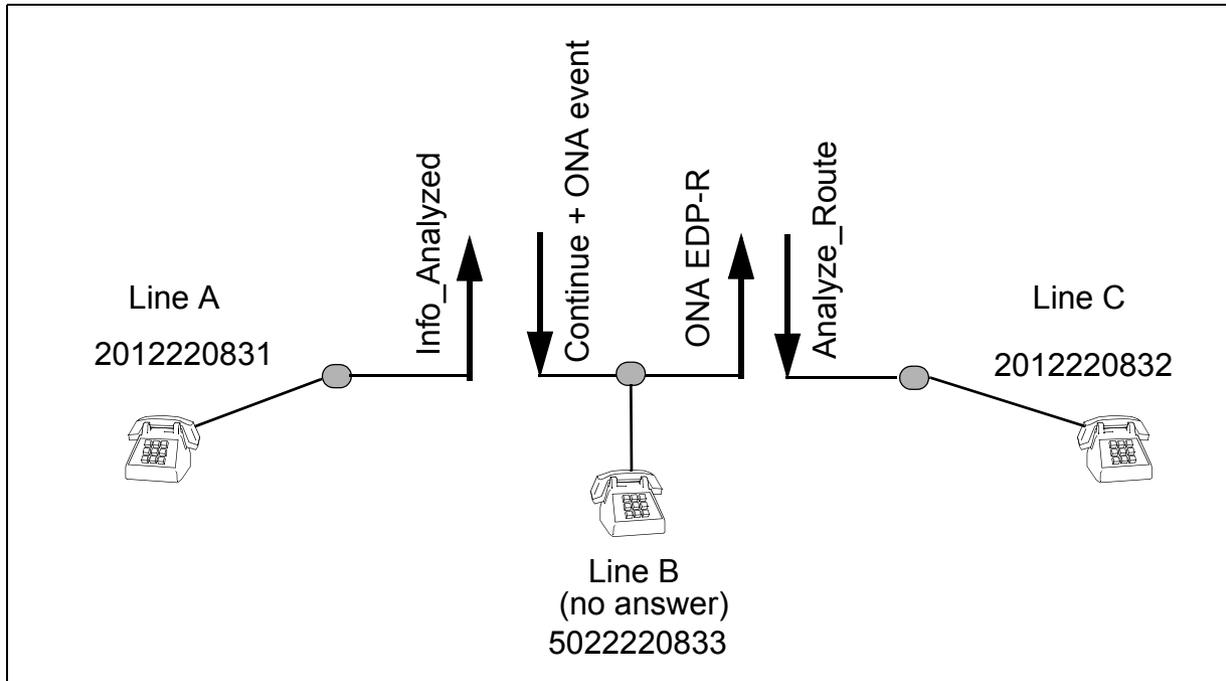


Figure 78 Sample non-AIN AMA record with module code 204

```
*HEX ID:AA STRUCTURE CODE:40500C CALL CODE:006C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C CLD PTY OFF-HK:0C SERVICE FEATURE:000C ORIG NPA:201C
ORIG NUMBER:2220831C OVERSEAS IND:0C TERM NPA:00502C
TERM NUMBER:2220833C CONNECT TIME:1043128C ELAPSED TIME:000000069C
MODULE CODE:204C INDICATOR IDENTIFICATION:001C MODULE CODE:000C
```

**Figure 79 Sample one-AIN AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:502C ORIG NUMBER:2220833C
OVERSEAS IND:0C TERM NPA:00502C TERM NUMBER:2220833C
CONNECT TIME:1043128C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:70719C CIRCUIT TIME:1043198C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

**Figure 80 Sample two-AIN AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70719C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:502C ORIG NUMBER:2220833C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220832C
CONNECT TIME:1043128C ELAPSED TIME:000000069C SLP ID:987654321C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

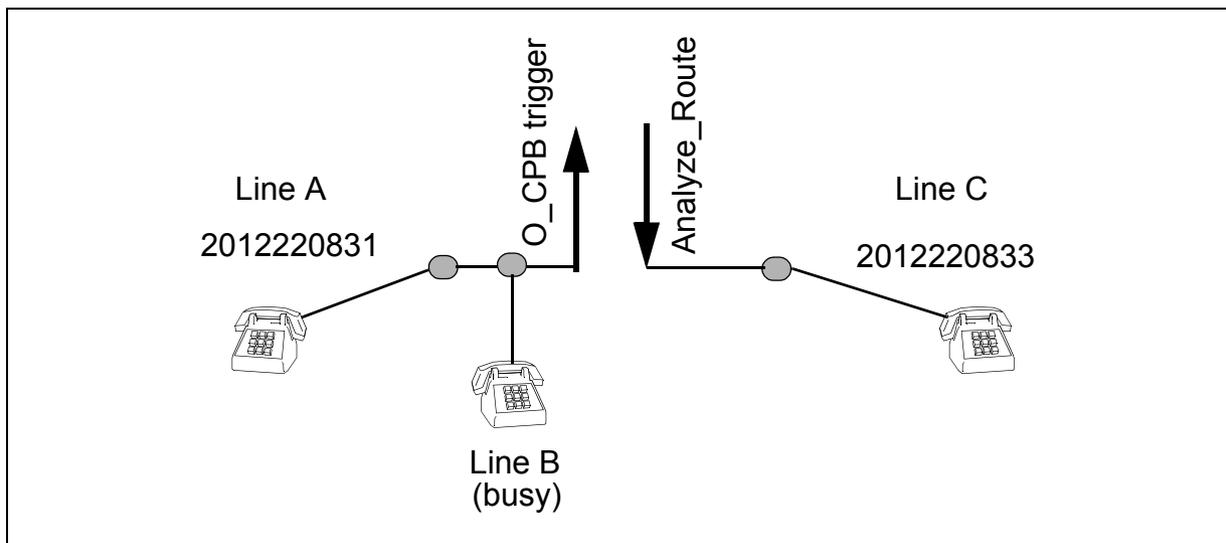
### 6.13.2 AMA records for trigger O\_Called\_Party\_Busy

This scenario assumes that the originator subscribes to the O\_Called\_Party\_Busy trigger. See Figure 81 “AMA record call scenario for trigger OCPB” on page 256. The following steps describe the call flow of a call that uses trigger O\_Called\_Party\_Busy and generates an AMA record. See Figure 81 “AMA record call scenario for trigger OCPB” on page 256.

The following steps describe a call that uses trigger O\_Called\_Party\_Busy and generates an AMA record:

1. Line A (2012220831) is configured with trigger O\_Called\_Party\_Busy.
2. Line B is busy.
3. Line A calls line B and encounters trigger O\_Called\_Party\_Busy.
4. The SSP sends an O\_Called\_Party\_Busy query message to the SCP. The SCP responds with an Analyze\_Route message with an AMAslpID parameter (123456789).
5. The Analyze\_Route message instructs the SSP to forward the call to line C (2012220833).
6. The call is answered.
7. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 82 “Sample AMA record” on page 257.

**Figure 81 AMA record call scenario for trigger OCPB**



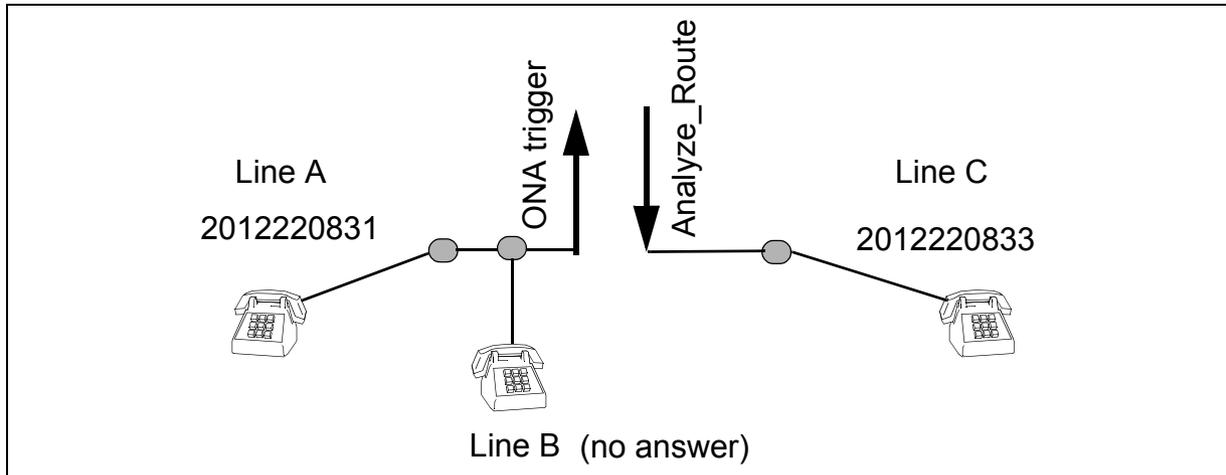
**Figure 82 Sample AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71223C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220831C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1400593C ELAPSED TIME:000000048C SLP ID:123456789C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

### 6.13.3 AMA records for trigger O\_No\_Answer

This scenario assumes the originator subscribes to trigger O\_No\_Answer. See Figure 83 “AMA record call scenario for trigger ONA” on page 258. The following steps describe a call that uses trigger O\_No\_Answer and generates an AMA record:

1. Line A (2012220831) is configured with trigger O\_No\_Answer.
2. Line A calls line B.
3. The call is not answered.
4. The call encounters trigger O\_No\_Answer.
5. The SSP sends an O\_No\_Answer query message to the SCP. The SCP responds with an Analyze\_Route message with an AMASlpID parameter (123456789).
6. The Analyze\_Route message instructs the SSP to forward the call to line C (2012220833).
7. The call is answered.
8. When all lines return to the on-hook state, and AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 84 “Sample AMA record” on page 258.

**Figure 83 AMA record call scenario for trigger ONA****Figure 84 Sample AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71223C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220831C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1114317C ELAPSED TIME:000000027C SLP ID:123456789C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

#### 6.13.4 AMA records for the T\_Busy event

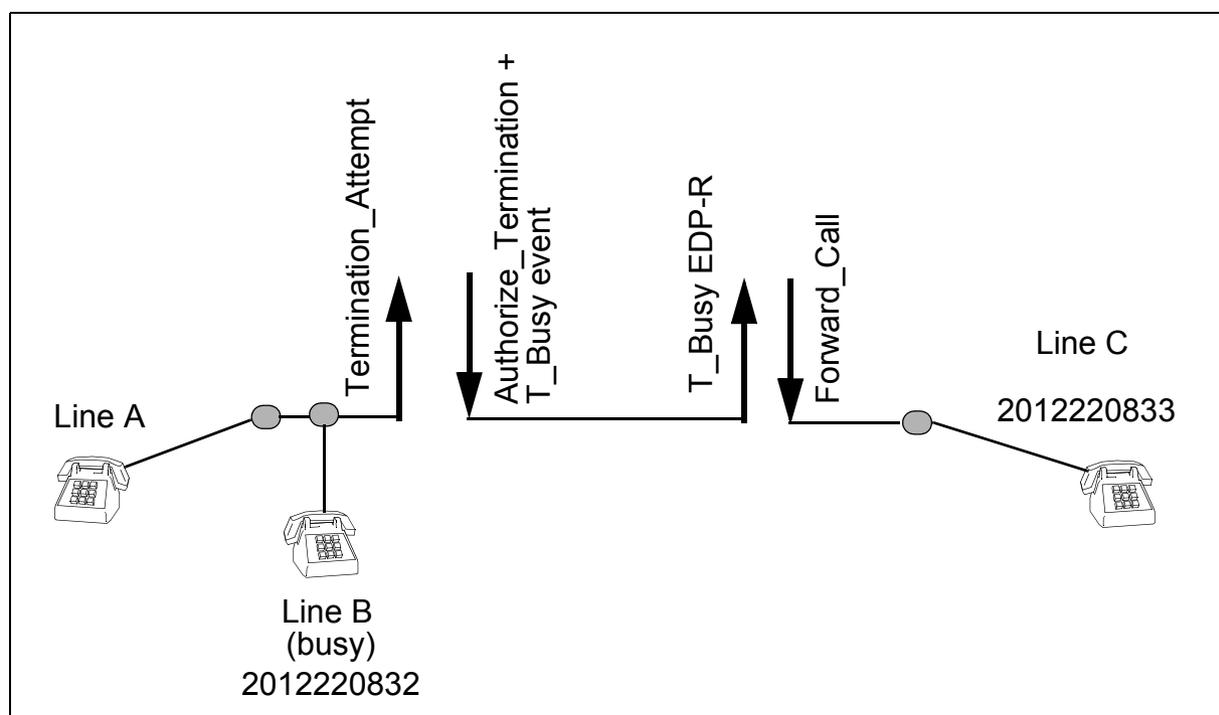
This scenario assumes that the called party subscribes to trigger Termination\_Attempt.

See Figure 85 “AMA record call scenario for the T\_Busy event” on page 259. The following steps describe the call flow of a typical call that uses the T\_Busy event and generates an AMA record.

1. Office-wide triggers are enabled.
2. Line B is busy.
3. Line A calls line B (2012220832) and encounters trigger Termination\_Attempt.

4. The SSP sends Termination\_Attempt query message to the SCP.
5. The SCP responds with an Authorize\_Termination message with an AMAslpID parameter (123456789) and an RRBCME arming the T\_Busy event.
6. Also, an AMA record is generated. See Figure 86 on page 260.
7. The T\_Busy event is encountered.
8. The SSP sends T\_Busy EDP-R query message to the SCP. The SCP responds with a Forward\_Call message with another AMAslpID parameter (987654321).
9. The Forward\_Call message instructs the SSP to forward the call to line C (2012220833).
10. The call is answered.
11. When all lines return to the on-hook state, a second AMA record is generated with call code 047, structure code 40221, and various module codes. See Figure 87 “Sample of second AMA record” on page 260.

**Figure 85 AMA record call scenario for the T\_Busy event**



**Figure 86 Sample of first AMA record**

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:90912C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:007C
SERVICE FEATURE:027C TERM NPA:00201C TERM NUMBER:2220832C
CONNECT TIME:1153306C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:90912C CIRCUIT TIME:1153356C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

**Figure 87 Sample of second AMA record**

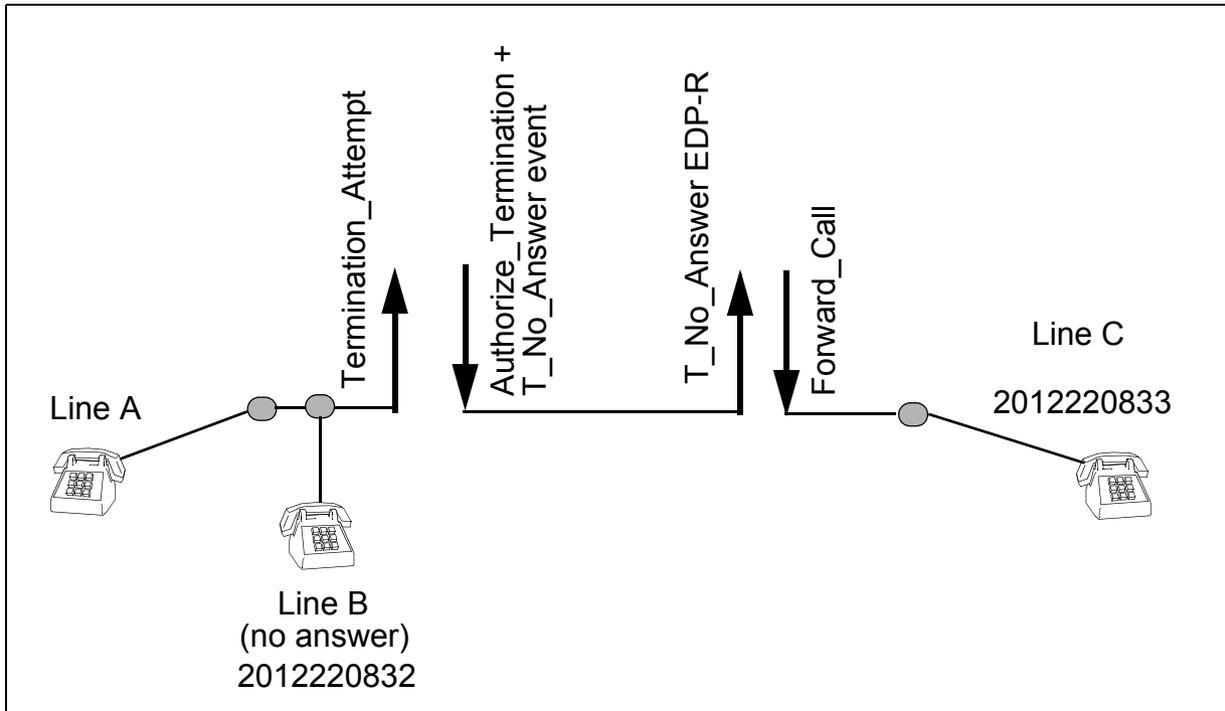
```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:90912C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1153306C ELAPSED TIME:000000049C SLP ID:987654321C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:006C DIGITS DIALED1:00000222083C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:300C
SIG DIGITS NEXT FIELD:024C DIGITS DIALED1:54004900002C
DIGITS DIALED2:8183920122208C MODULE CODE:307C LINE NUMBER TYPE:800C
NPA LINE:00906C LINE NUMBER:2261914C MODULE CODE:307C
LINE NUMBER TYPE:006C NPA LINE:00201C LINE NUMBER:2220834C
MODULE CODE:000C
```

### 6.13.5 AMA records for the T\_No\_Answer event

This scenario assumes that the called party subscribes to trigger Termination\_Attempt.

See Figure 88 “AMA record call scenario for the T\_No\_Answer event” on page 262. The following steps describe the call flow of a typical call that uses the T\_No\_Answer event and generates an AMA record.

1. Office-wide triggers are enabled.
2. Line A calls line B (2012220832) and encounters trigger Termination\_Attempt.
3. The SSP sends Termination\_Attempt query message to the SCP.
4. The SCP responds with an Authorize\_Termination message with an AMAslpID parameter (123456789) and an RRBCME arming the T\_No\_Answer event.
5. Also, an AMA record is generated. See Figure 89 on page 262.
6. The call is not answered. The T\_No\_Answer event timer expires.
7. The SSP sends the T\_No\_Answer EDP-R query message to the SCP. The SCP responds with a Forward\_Call message with another AMAslpID parameter (987654321).
8. The Forward\_Call message instructs the SSP to forward the call to line C (2012220833).
9. The call is answered.
10. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40221, and various module codes. See Figure 90 on page 263.

**Figure 88 AMA record call scenario for the T\_No\_Answer event****Figure 89 Sample of first AMA record**

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:006C
SERVICE FEATURE:027C TERM NPA:00201C TERM NUMBER:2220832C
CONNECT TIME:0944148C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:70826C CIRCUIT TIME:0944196C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

**Figure 90 Sample of second AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:0944148C ELAPSED TIME:000000048C SLP ID:987654321C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:006C DIGITS DIALED1:00000222083C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:300C
SIG DIGITS NEXT FIELD:024C DIGITS DIALED1:54004900002C
DIGITS DIALED2:8183920122208C MODULE CODE:307C LINE NUMBER TYPE:800C
NPA LINE:00906C LINE NUMBER:2261914C MODULE CODE:307C
LINE NUMBER TYPE:006C NPA LINE:00201C LINE NUMBER:2220834C
MODULE CODE:000C
```

### 6.13.6 AMA records for the Network\_Busy event

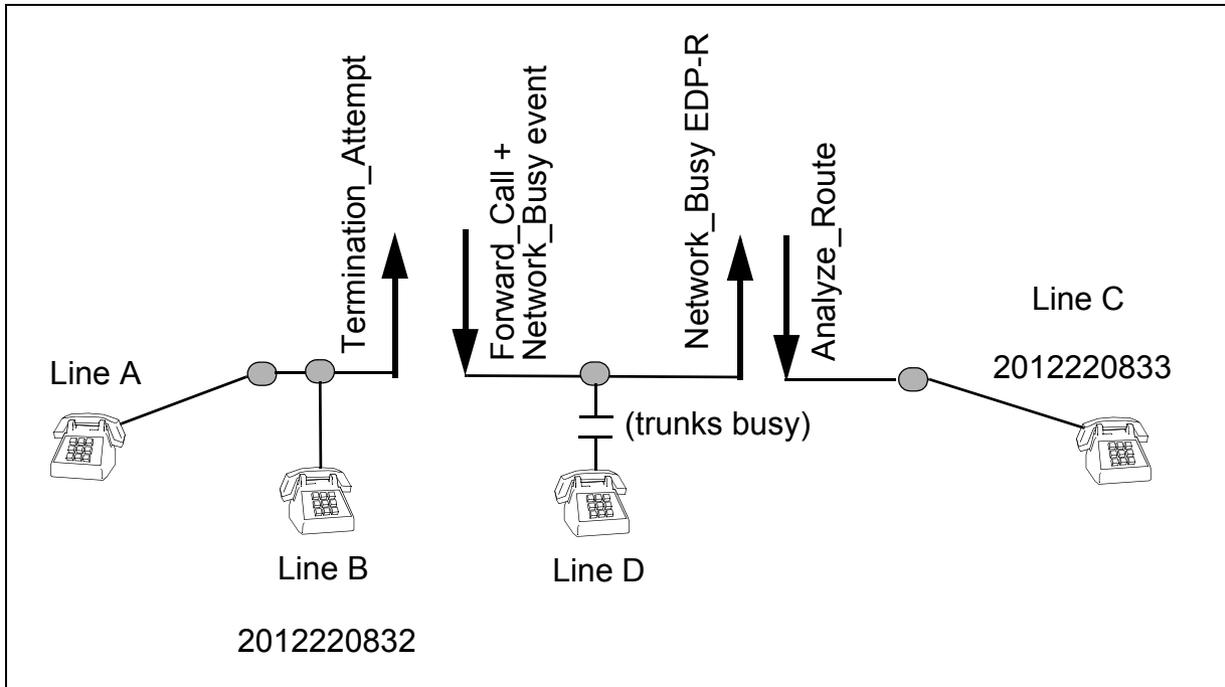
This scenario assumes the called party subscribes to trigger Termination\_Attempt. See Figure 91 “AMA record call scenario for the Network\_Busy event” on page 264.

The following steps describe a call flow that uses the Network\_Busy event and generates an AMA record:

1. Office-wide triggers are enabled.
2. The trunks to line D are busy.
3. Line A calls line B (2012220832) and encounters trigger Termination\_Attempt.
4. The SSP sends Termination\_Attempt query message to the SCP.
5. The SCP responds with an Forward\_Call message with an AMAslpID parameter (123456789) and an RRBCME arming the Network\_Busy event.
6. An AMA record is generated. See Figure 92 “Sample of first AMA record” on page 264.
7. The Forward\_Call message instructs the SSP to forward the call to line D.
8. The call encounters the Network\_Busy event.
9. The SSP sends the Network\_Busy EDP-R query message to the SCP. The SCP responds with an Analyze\_Route message with an AMAslpID parameter (987654321).
10. The Analyze\_Route message instructs the SSP to forward the call to line C (2012220833).

11. The call is answered.
12. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 40220, and various module codes. See Figure 93 "Sample of second AMA record" on page 265.

**Figure 91 AMA record call scenario for the Network\_Busy event**



**Figure 92 Sample of first AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:3330007C
CONNECT TIME:1259002C ELAPSED TIME:000000000C SLP ID:123456789C
MODULE CODE:025C CIRCUIT DATE:70826C CIRCUIT TIME:1259072C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:030C CONTEXT ID:001C TRANS SETTABLE:272C MODULE CODE:030C
CONTEXT ID:002C TRANS SETTABLE:888C MODULE CODE:000C
```

**Figure 93 Sample of second AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70826C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220832C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220833C
CONNECT TIME:1259002C ELAPSED TIME:000000069C SLP ID:987654321C
MODULE CODE:306C OLIP:031C MODULE CODE:029C
ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:02012220834C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

### 6.13.7 AMA records with completion indicator 009

This scenario assumes:

- The originator subscribes to trigger OHD.
- Office-wide triggers are enabled.
- The user has datafilled the SDS digits in the TRIGDIG table.
- The terminating line has SDY option assigned.

See Figure 94 “AMA record call scenario with completion indicator 009” on page 266. The following steps describe the call flow of a typical call that generates an AMA record with completion indicator 009.

1. Line A (2012220831) goes off-hook and detects the dial tone.
2. Line A dials Off-hook\_Delay digits. The call encounters trigger Off-hook\_Delay.
3. The SSP sends the Info\_Collected query message to the SCP.
4. The SCP sends an Analyze\_Route response message with an AMAslpID parameter (123456789) to the SSP. An AMA record is generated with a completion indicator of 009. See Figure 95 on page 267.
5. The CalledPartyID parameter in the Analyze\_Route message contains the SDS digits (2012220836).
6. Call processing continues. The call encounters trigger SDS.
7. The SSP send the Info\_Analyzed query message to the SCP.

8. The SCP sends an Analyze\_Route response message with an AMAslpID parameter (987654321) to the SSP. A second AMA record is generated. See Figure 96 “Sample of second AMA record” on page 267.
9. The Analyze\_Route message instructs the SSP to forward the call to line B (2012220834).
10. The call is answered.
11. When all lines return to the on-hook state, a third AMA record is generated with call code 036 and structure code 00079. See Figure 97 “Sample of third AMA record” on page 267.

Figure 94 provides a sample AMA record call scenario with completion indicator 009.

**Figure 94 AMA record call scenario with completion indicator 009**

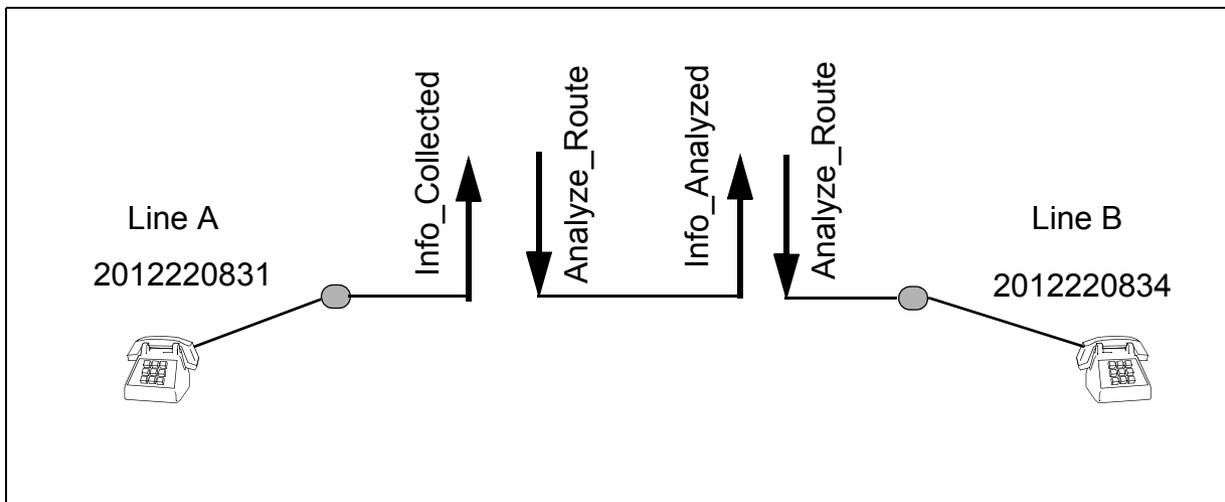


Figure 95 on page 267 provides a sample of the first AMA record.

**Figure 95 Sample of first AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:009C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220831C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220836C
CONNECT TIME:0948495C ELAPSED TIME:000000040C SLP ID:123456789C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

Figure 96 provides a sample of the second AMA record.

**Figure 96 Sample of second AMA record**

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220836C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2220834C
CONNECT TIME:0948495C ELAPSED TIME:000000040C SLP ID:987654321C
MODULE CODE:029C ALTERNATE BILLING NUMBER:02012220831C MODULE CODE:027C
BUSINESS CUSTOMER ID:00201222083C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:040C DIGITS ID:005C
SIG DIGITS NEXT FIELD:010C DIGITS DIALED1:02012220831C
DIGITS DIALED2:000000000000000C MODULE CODE:307C LINE NUMBER TYPE:005C
NPA LINE:00201C LINE NUMBER:2220831C MODULE CODE:307C
LINE NUMBER TYPE:005C NPA LINE:00201C LINE NUMBER:2220831C
MODULE CODE:000C
```

Figure 96 provides a sample of the third AMA record.

**Figure 97 Sample of third AMA record**

```
*HEX ID:AA STRUCTURE CODE:00079C CALL CODE:036C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:71219C TIMING IND:00000C STUDY IND:2000000C CLD PTY OFF-HK:0C
SERVICE OBSERVED:0C OPER ACTION:0C SERVICE FEATURE:000C ORIG NPA:201C
ORIG NUMBER:2220834C CONNECT TIME:0948495C ELAPSED TIME:000000040C
```

### 6.13.8 AMA records for default routing

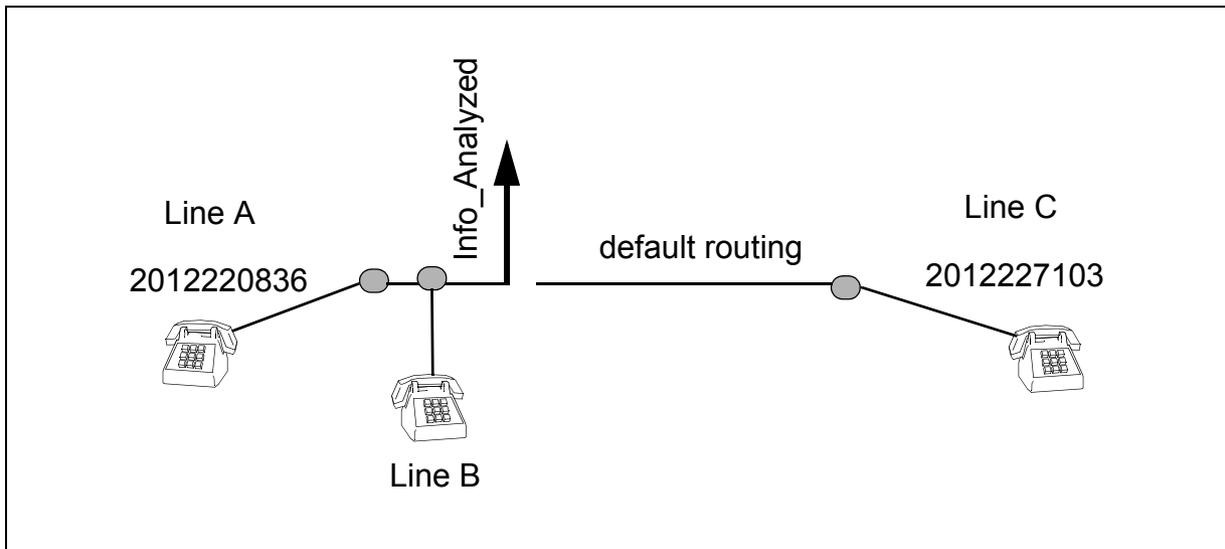
This scenario assumes that the user has datafilled trigger SDS.

See Figure 98 “AMA record call scenario for default routing” on page 268. The following steps describe the call flow of a typical call that generates an AMA record with completion indicator 1:

1. Office-wide triggers are enabled.
2. Line A (2012220836) calls line B and encounters trigger SDS.
3. The SSP sends the Info\_Analyzed query message to the SCP. The SCP does not send a response.
4. The call routes to line C (2012227103) based on default routing translations.
5. The call is answered.
6. When all lines return to the on-hook state, an AMA record is generated with call code 047, structure code 00220, and SLP ID of 900000000. See Figure 99 “Sample AMA record” on page 269.

Figure 98 on page 268 provides a sample AMA record call scenario for default routing.

**Figure 98 AMA record call scenario for default routing**



**Figure 99 Sample AMA record**

```
*HEX ID:AA STRUCTURE CODE:00220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0999999C REC OFFICE TYPE:036C REC OFFICE ID:0999999C
DATE:70926C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:201C ORIG NUMBER:2220836C
OVERSEAS IND:0C TERM NPA:00201C TERM NUMBER:2227103C
CONNECT TIME:0748226C ELAPSED TIME:000000048C SLP ID:900000000C
```

### 6.13.9 AMA records for Send\_To\_Resource

This scenario makes the following assumptions:

- Line B subscribes to trigger Termination\_Attempt.
- The service provider has already datafilled a remote SSP with an intelligent peripheral to process Send\_To\_Resource messages.

See Figure 100 “AMA record call scenario for Send\_To\_Resource message” on page 270. The following steps describe the call flow of a typical call that generates an STR message and AMA records.

1. Office-wide triggers are enabled.
2. Line A (6136213311) calls line B (6137225311).
3. The call encounters trigger Termination\_Attempt.
4. The SSP send a Termination\_Attempt query message to the SCP.
5. The SCP sends a Send\_To\_Resource response message to the SSP with the following parameters:
  - DestinationAddress set to 5897224914
  - AMAMeasure set to connectTimeRecordedDestinationSSP
  - AMAslpID set to 11111111

An AMA record is generated. See Figure 101 on page 271.

The DestinationAddress parameter specifies the location of the remote intelligent peripheral.

The AMAMeasure parameter set to connectTimeRecordedDestinationSSP ensures the SSP appends a module code 290 to the AMA record. The module code records the elapsed time of the connection to the remote IP and the DestinationAddress parameter.

**Note:** The resulting AMA record contains two elapsed time values. The first one records the elapsed time of the connection between the calling and called parties. The second one is in the module code and records only the elapsed time of the connection to the remote IP.

6. The calling party interacts with the remote intelligent peripheral.
7. Once the interaction is complete, the SSP sends a `Resource_Clear` message to the SCP.
8. The SCP responds with an `Forward_Call` message with an `AMAslpID` parameter (22222222) to the SSP.
9. A second AMA record is generated. See Figure 102 “Sample of second AMA record” on page 271.
10. The `Forward_Call` message instructs the SSP to forward the call to line C (6137227312).
11. The call is answered.

Figure 100 on page 270 provides a sample AMA record call scenario for `Send_To_Resource` message.

**Figure 100 AMA record call scenario for `Send_To_Resource` message**

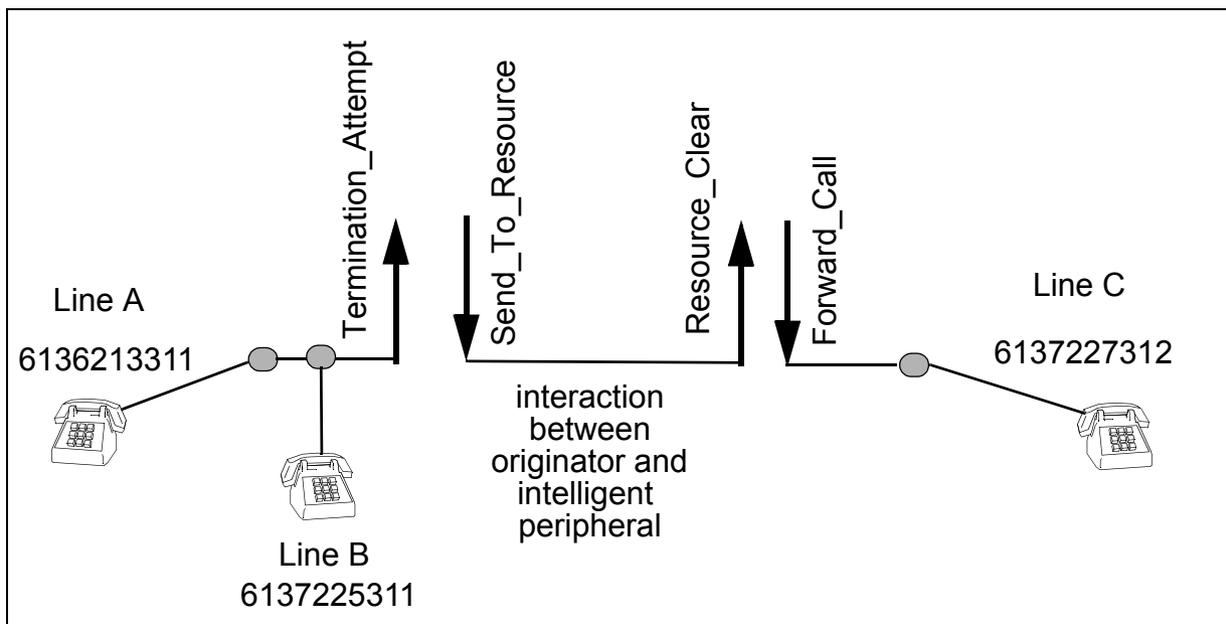


Figure 101 provides a sample of the first AMA record.

**Figure 101 Sample of first AMA record**

```
*HEX ID:AA STRUCTURE CODE:40221C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:80421C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
SERVICE FEATURE:027C TERM NPA:00613C TERM NUMBER:7225311C
CONNECT TIME:1930286C ELAPSED TIME:000001097C SLP ID:111111111C
MODULE CODE:290C SLP ID:111111111C TRIGGER SEQUENCE NUMBER:FFFF
DATE:80421C TIMING IND:00000C CONNECT TIME:1929391C
ELAPSED TIME:000000432C RESOURCE TYPE:004C RESOURCE DESTINATION NPA:583C
RESOURCE DESTINATION ADDRESS:7224914C MODULE CODE:000C
```

Figure 102 provides a sample of the second AMA record.

**Figure 102 Sample of second AMA record**

```
*HEX ID:AA STRUCTURE CODE:00220C CALL CODE:047C SENSOR TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE ID:0200200C
DATE:80421C TIMING IND:00000C STUDY IND:0200000C COMPLETION IND:001C
OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:613C ORIG NUMBER:7225311C
OVERSEAS IND:0C TERM NPA:00613C TERM NUMBER:7227312C
CONNECT TIME:1930286C ELAPSED TIME:000001097C SLP ID:222222222C
```

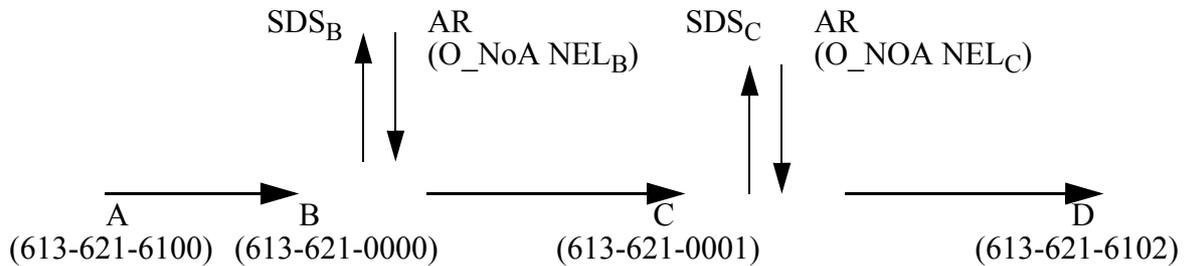
### 6.13.10 Multiple extended TCAP transactions (METT)

Multiple extended TCAP transactions (METT) means multiple NELs in the originating call model.

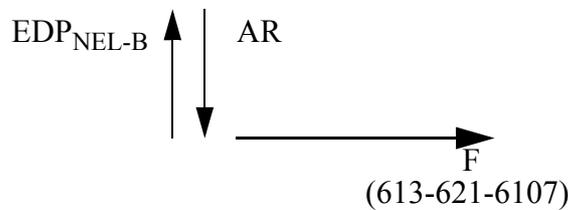
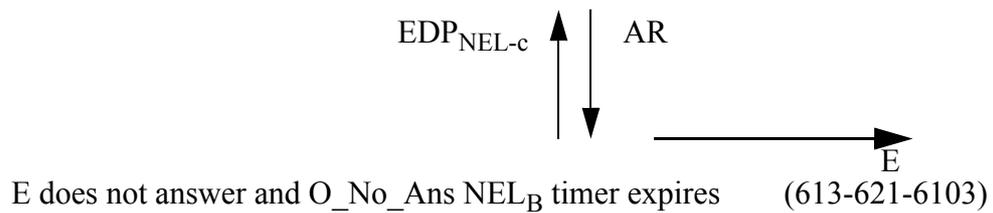
The OCM-METT activity does not affect AIN AMA records.

The following scenario illustrates how the switch generates AMA records when METT is involved in a call.

Figure 103 Sample OCM METT scenario



D does not answer and O\_No\_Ans NEL<sub>C</sub> timer expires (has smaller timer value)



The following AMA record example represents the SDS trigger encountered at B and gets an AR response to C with a O\_NoA NEL armed:

```
*HEX ID:AA STRUCTURE CODE:40220C CALL CODE:047C SENSOR
TYPE:036C
  SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE
ID:0200200C
  DATE:90708C TIMING IND:00000C STUDY IND:0200000C COMPLETION
IND:009C
  OPER ACTION:0C SERVICE FEATURE:027C ORIG NPA:613C ORIG
NUMBER:6210000C
  OVERSEAS IND:0C TERM NPA:00613C TERM NUMBER:6210001C
CONNECT TIME:1015427C ELAPSED TIME:000000000C SLP
ID:000000001C
MODULE CODE:025C CIRCUIT DATE:90708C CIRCUIT TIME:1015464C
MODULE CODE:000C
```

The following AMA record example represents the SDS trigger encountered at C and gets an AR response to D with a O\_NoA NEL armed:

---

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:009C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210001C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216102C
  CONNECT TIME:1015429C  ELAPSED TIME:000000000C  SLP
ID:000000002C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1015454C
MODULE CODE:000C
```

The following AMA record example represents the O\_NoA EDP-R encountered at C and gets an AR response to E:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:006C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210001C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216103C
  CONNECT TIME:1015454C  ELAPSED TIME:000000000C  SLP
ID:000000003C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1015464C
MODULE CODE:000C
```

The following AMA record example represents the O\_NoA EDP-R encountered at B and gets an AR response to F:

```
*HEX ID:AA  STRUCTURE CODE:40220C  CALL CODE:047C  SENSOR
TYPE:036C
  SENSOR ID:0200200C  REC OFFICE TYPE:036C  REC OFFICE
ID:0200200C
  DATE:90708C  TIMING IND:00000C  STUDY IND:0200000C  COMPLETION
IND:006C
  OPER ACTION:0C  SERVICE FEATURE:027C  ORIG NPA:613C  ORIG
NUMBER:6210000C
OVERSEAS IND:0C  TERM NPA:00613C  TERM NUMBER:6216107C
  CONNECT TIME:1016151C  ELAPSED TIME:000000000C  SLP
ID:000000004C
MODULE CODE:025C  CIRCUIT DATE:90708C  CIRCUIT TIME:1016157C
MODULE CODE:000C9
```

### **6.13.11 AMA records for the O\_Disconnect, O\_Disconnect\_Called and Timeout events**

The SSP generates an AMA record containing Structure code 0220 when an AMAslpID parameter is correctly received in:

- an SCP response arming the O\_Disconnect or O\_Disconnect\_Called event, or
- an SCP response sent in response to a O\_Disconnect query message is launched because one of those two events were detected, or
- the Disconnect response and Timeout was armed in either Collect\_Info or Analyze\_Route Message

The SSP generates Structure 0221 when an AMAslpID parameter is correctly received in the O\_Disconnect response and Timeout was armed in an Offer\_Call Response.

The AMA record Completion Indicator (BAF Table 280) is set to 001 (“Completed: Connected” from BAF Table 280 in GR-1100CO) and when the SCP response is Analyze Route, Collect Information, Forward Call, Continue, or Send To Resource, elapsed time is set to the duration of the call. Existing open AMA records are closed and a new record is started upon receipt of the response.

For the AMA record generated for AMAsLpID received in Continue response for Timeout, elapsed time is calculated from when Continue message is received, through the end of the call.

If the received response is a Disconnect response, the completion indicator is 011 (“AIN SCP-requested release time/disconnect message” received from BAF Table 280 in GR-1100CO) and the elapsed time is set to zero. The other AMA records in the call are unchanged.

## 7 AMA structures and modules

AIN SSP-specific billing uses the following two AMA structures:

- AIN call completion, structure code 220
- AIN call termination, structure code 221

The AMA structure that is used by the SSP for a call depends upon the trigger that is encountered during the call. AMA structure 221 is used only when a call triggers at trigger Termination\_Attempt and a Forward\_Call response is NOT received. For all other AIN SSP triggers and for trigger Termination\_Attempt with a Forward\_Call response, AMA structure 220 is used.

Table 72 and Table 73 on page 276 list the components of AMA structures 220 and 221.

**Table 72 AIN Call Termination AMA structure code 221**

Information	Table number	Number of characters
Record descriptor word	000	8
Hexadecimal identifier	00	2
Structure code	0	6
Call type	1	4
Sensor type	2	4
Sensor identification	3	8
Recording office type	4	4
Recording office identification	5	8
Date	6	6
Timing indicator	7	6
Study indicator	8	8

**Table 72 AIN Call Termination AMA structure code 221 (Continued)**

<b>Information</b>	<b>Table number</b>	<b>Number of characters</b>
Completion indicator	280	4
Service feature	12	4
Terminating NPA	16	6
Terminating number	17	8
Connect time	18	8
Elapsed time	19	10
Service logic program identification	77	10

**Table 73 AIN Call Completion AMA structure code 220**

<b>Information</b>	<b>Table number</b>	<b>Number of characters</b>
Record descriptor word	000	8
Hexadecimal identifier	00	2
Structure code	0	6
Call type	1	4
Sensor type	2	4
Sensor identification	3	8
Recording office type	4	4
Recording office identification	5	8
Date	6	6
Timing indicator	7	6
Study indicator	8	8
Completion indicator	280	4
Operator action	11	2
Service feature	12	4
Originating NPA	13	4
Originating number	14	8

**Table 73 AIN Call Completion AMA structure code 220 (Continued)**

Information	Table number	Number of characters
Overseas indicator	15	2
Terminating NPA	6	6
Terminating number	17	8
Connect time	18	8
Elapsed time	19	10
Service logic program identification	77	10

Table 74 lists all the possible modules that can be appended to AMA structures 220 and 221. Not all of the modules can appear on a record at the same time. Some of these modules have been introduced or enhanced by AIN SSP. Some modules are explained in further sections. See TR-NWT-001100, BAF Requirements for detailed descriptions of other AMA modules.

**Table 74 Appended modules for structures 220 and 221**

Module code	Module name	New/Change/Unchanged
Mod 021	Carrier access (originating)	Unchanged
Mod 022	Long duration	Unchanged
Mod 023	WATS	Unchanged
Mod 024	PSDS	Unchanged
Mod 025	Circuit seizure	Unchanged
Mod 027	Business customer ID	Unchanged
Mod 029	Alternate billing number	Unchanged
Mod 030	Translation settable	New
Mod 039	Service logic program ID	New
Mod 040	Digits	New
Mod 070	ISDN core	Unchanged
Mod 071	ISDN core (abv)	Unchanged
Mod 102	Authorization code	Unchanged

**Table 74 Appended modules for structures 220 and 221 (Continued)**

Module code	Module name	New/Change/Unchanged
Mod 103	Account code	New
Mod 104	Trunk network number	Unchanged
Mod 307	Line number	Changed

AIN-specific AMA recording takes place when an AMAslpID parameter is received in a response message. In addition to the AMAslpID parameter, other optional AMA parameters may be received in the response message and used by SSP billing. These parameters are recorded in some of the AMA modules listed above. Table 75 lists the AMA-related parameters and the associated module used to record the information.

**Table 75 AIN AMA-related message parameters**

Message parameter	Module name	Module number
AMAAAlternateBillingNumber	Alternate Billing Number	Mod 029
AMABusinessCustomerID	Business Customer ID	Mod 027
AMALineNumber	Line Number	Mod 307
AMAslpID	Service Logic Program ID	Mod 039
PrimaryBillingIndicator	Translation Settable	Mod 030
AlternateBillingIndicator	Translation Settable	Mod 030
SecondAlternateBillingIndicator	Translation Settable	Mod 030
OverflowBillingIndicator	Translation Settable	Mod 030
AMADigitsDialedWC	Digits	Mod 040
PrimaryCarrierID	Carrier Access	Mod 021
AlternateCarrierID	Carrier Access	Mod 021
SecondAlternateCarrierID	Carrier Access	Mod 021
PrimaryTrunkGroup	Trunk Network Number	Mod 104
AlternateTrunkGroup	Trunk Network Number	Mod 104
SecondAlternateTrunkGroup	Trunk Network Number	Mod 104

A default Call Type and default Service Feature are used in AIN AMA recording. Call Type and Service Feature are normally determined by switch-based translations. Whenever these values cannot be determined by switch-based translations, the default Call Type, 047, and default Service Feature, 027, is recorded in the AMA structure. It is possible that the off-board processor may specify Call Type and Service Feature in the AMA billing indicator parameters (PrimaryBillingIndicator, AlternateBillingIndicator, SecondAlternateBillingIndicator and OverflowBillingIndicator) in a response message. In this case, the Call Type and Service Feature is stored in Translation Settable Module 030. The Call Type and Service feature values supplied by the off-board processor are never recorded in the AMA structure.

## 7.1 Translation Settable module 030

Translation Settable Module 030 (see Table 76) records the Call Type or Service Feature code returned by the off-board processor, or MBI information encountered in SSP translations. Module 030 may appear up to three times in the same AMA record.

**Table 76 Translation Settable module 030**

Information	Table number	Number of characters
Module code	88	4
Context ID	152	4
Translation settable field	89	4

## 7.2 Service Logic Program Identification module 039

Service Logic Program Identification module 039 (see Table 77) records the AMAslpIDs received in a response message from the off-board processor. Note that the first AMAslpID received from the off-board processor is recorded in the base AIN structure (0220 or 0221). Subsequent AMAslpIDs are recorded in appended 039 modules. The number of times Module 039 may appear in the same AMA record is based on the maximum number of times a call may trigger. This value is set by office parameter AIN\_MAX\_SERIAL\_TRIGGERS that has a range of 1 to 8.

**Table 77 Service Logic Program Identification module 039**

Information	Table number	Number of characters
Module code	88	4
Service logic program identification	77	10

### 7.3 Digits module 040

Digits module 040 (see Table 72) records AMA digits returned by the off-board processor. The AMA parameter AMADigitsDialedWC as well as the outpulse number (used in private networks) are recorded in this module. There can be at most 6 module code 040 containing AMADigitsDialedWC per AMA record. This limit does NOT apply to module code 040 containing the outpulse number, that is, there could be 7 module code 040 in one AMA record, 6 for AMADigitsDialedWC and 1 for the outpulse number

**Table 78 Digits module 040**

Information	Table number	Number of characters
Module code	88	4
Digits identifier	78	4
Significant digits next field	55	4
Digits dialed 1	32	12
Digits dialed 2	33	14

### 7.4 Account Code/CDAR module 103

Account Code/CDAR module 103 (see Table 79) records account codes collected by a switch-based feature. Previously, the first character of the Structure Code field indicated that CDAR information was appended to the record. Beginning in BCS36, module 103 is appended to the base structure, and the structure code field is not marked. This change applies to all AMA (not AIN-specified), as per Bellcore TR-NWT-001100.

**Table 79 Account Code/CDAR module 103**

Information	Table number	Number of characters
Module code	88	4
Significant digits next field	55	4
Account code/CDAR	126	16

### 7.5 Line Number module 307

Prior to this feature, Line Number module 307 was used only for TOPS AMA recording. The Line Number field in module 307 is expanded to make this module applicable to AIN AMA recording.

Line Number module 307 (see Table 80 on page 281) records the original calling party ID, incoming terminating number, or automatic number

identification (ANI) delivered. The AMA parameter, AMALineNumber, is recorded in this module. Module 307 may appear up to two times in the same AMA record.

**Table 80 Line Number module 307**

<b>Information</b>	<b>Table number</b>	<b>Number of characters</b>
Module code	88	4
Line number type	423	4
Numbering plan area	16	6
Line number	17	8



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## Part II OAMP

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Part II: “OAMP” consists of the following:

Chapter 8: “Network management” on page 287

Chapter 9: “Resource monitoring” on page 293

Chapter 10: “Information revision messages” on page 313

Chapter 11: “Operational measurements for AIN” on page 327

Chapter 12: “OM group EXT” on page 341

Chapter 13: “OM group AIN” on page 347

Chapter 14: “OM group AINICOFF” on page 367

Chapter 15: “OM group AINICSUB” on page 381

Chapter 16: “OM group AINNCR” on page 397

Chapter 17: “OM group AINOGOFF” on page 409

Chapter 18: “OM group AINOFSUB” on page 425

Chapter 19: “OM group AINOFSB2” on page 451

Chapter 20: “OM group FTROM” on page 457

Chapter 21: “AIN message tracing tool” on page 463

Chapter 22: “Translation verification tool for AIN” on page 483

Chapter 23: “TSTQUERY tool” on page 635

Chapter 24: “AIN Scope Change tool (AINSCT)” on page 663

Chapter 25: “Other CI commands for AIN” on page 693

Chapter 26: “Trouble locating for AIN” on page 733

Chapter 27: “Logs for AIN” on page 749

Chapter 28: “AUD579” on page 751

Chapter 29: “AIN300” on page 753

Chapter 30: “AIN301” on page 755

Chapter 31: “AIN302” on page 757

Chapter 32: “AIN303” on page 759

Chapter 33: “AIN304” on page 761

Chapter 34: “AIN500” on page 763

Chapter 35: “AIN501” on page 765

Chapter 36: “AIN510” on page 767

Chapter 37: “AIN511” on page 769

Chapter 38: “AIN600” on page 771

Chapter 39: “AIN601” on page 775

Chapter 40: “AIN602” on page 779

Chapter 41: “AIN610” on page 783

Chapter 42: “AIN611” on page 785

Chapter 43: “AIN612” on page 787

Chapter 44: “AINT700” on page 791

Chapter 45: “AUD650” on page 813

Chapter 46: “AUD651” on page 817

Chapter 47: “DFIL109” on page 819

Chapter 48: “DFIL320” on page 821

Chapter 49: “Game100” on page 823



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## 8 Network management

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Automatic code gapping (ACG) is a network management mechanism used to control network congestion. When an SCP becomes congested with queries, it can request that the SSP slow down or stop sending queries for a desired length of time.

Code gapping can be initiated from the SCP in the following two ways:

- automatically with SCP initiated code control
- manually with service management system (SMS) originated code control (SOCC).

The manual SOCC method complements the automatic SCP method. The controls are managed on the SSP, in either an SCP or SMS control list.

AIN ACG has the following features:

- alerting the SCP when an attempt to add to a control list fails because the control list is full
- support of private-gap intervals and national-gap intervals
- supports global restores for both SCP and SMS control lists

An SMS or SCP control list can have up to 256 controls.

**Note:** ACG functionality, when it accompanies Create\_Call, behaves the same way as an ACG message that accompanies any call-related AIN message.

### 8.1 ACG messages and parameters

AIN ACG supports the following ACG messages:

- ACG
- ACG\_Global\_Ctrl\_Restore, that can be sent from the SCP to the SSP in a query package

- ACG\_Global\_Ctrl\_Restore\_Success, that can be sent from the SSP to the SCP in a response Package
- ACG\_Overflow, that can be sent from the SSP to the SCP in a unidirectional Package

See Section 6.4.5 “Non call-related message processing” on page 249. Note that ACG overflow notification is not provided by the Termination\_Notification message.

## 8.2 ACG control list overflow

AIN ACG sends an ACG\_Overflow message to notify the SCP that is initiating the add request, that the control was not added. When an overflow condition occurs, the following events occur:

- An AIN300 or AIN301 log is generated.
- The SCPOVLDO or SMSOVLDO OM (OM group AINACG) increments.
- The ACG\_Overflow message is sent to the SCP in a unidirectional TCAP package.
- OM register NAOVFW increments (OM group AINNCR).

## 8.3 Gap intervals

The gap interval is the length of time queries are blocked. After this interval expires a query is allowed. After the allowed query is sent, the gap interval is reset and queries are again blocked until the gap interval expires. This cycle repeats until the gap duration has expired.

Table 81 lists the supported values for the gap intervals for SCP initiated and SMS initiated controls.

The gap intervals shown are average intervals, with the actual interval is randomly chosen from a uniform distribution so that the result is as follows:

- between 90% and 110% of the average value for SCP controls
- between 50% and 150% for SMS controls

This is done to prevent synchronization problems that can arise when several SCPs implement code gapping controls against the same code. The random

determination is repeated each time an interval expires to set the length of the next interval.

**Table 81 Gap interval values**

Gap interval parameter	Average interval (s)	
	SCP (PRIV) initiated	SMS (NATL) initiated
0	0 (Note 2)	Remove control
1	3	0.0 (control exclusion)
2	4	0.1
3	6	0.25
4	8	0.5
5	11	1.0
6	16	2.0
7	22	5.0
8	30	10.0
9	42	15.0
10	58	30.0
11	81	60.0
12	112	120.0
13	156	300.0
14	217	600.0
15	300	infinity (block all queries)
16	Remove Control	N/A (Note 3)
17	.1	N/A (Note 3)
18	.25	N/A (Note 3)
19	.5	N/A (Note 3)
20	1	N/A (Note 3)
21	2	N/A (Note 3)

**Table 81 Gap interval values (Continued)**

Gap interval parameter	Average interval (s)	
	SCP (PRIV) initiated	SMS (NATL) initiated
<p><b>Note 1:</b> The system does not support Intervals in shaded areas for this release.</p> <p><b>Note 2:</b> The system permits control exclusion (SMS gap interval = 0.0) only for SMS initiated controls. An SCP gap interval = 0 is a fatal application error. When the ACG component was part of a multi-component package, the call-related component of the message is not affected.</p> <p><b>Note 3:</b> The system treat messages containing this value are as fatal application errors. When the ACG component was part of a multi-component package, the call-related component is not affected by the ACG fatal application error.</p>		

## 8.4 Global restore of a control list

AIN ACG allows global re-initialization of the control lists based on one of four request types specified in the ACG\_Global\_Ctrl\_Restore message. The message is generated through the SCP or by SSP operating company personnel using the CI command ACGRESTORE. The types of restore requests that are supported are as follows:

- remove all items from the AIN outgoing control lists (both SMS and SCP)
- remove all SMS controls
- remove all SCP controls
- remove all SMS controls, except controls with a zero gap interval

When a restore has been requested, the SSP alerts the SCP and operating company personnel as follows:

- when the request was initiated by an SCP
  - An ACG\_Global\_Ctrl\_Restore\_Success return result is sent to the SCP.
  - OM register NAGCR increments (OM group AINNCR) once for each incoming ACG\_Global\_Ctrl\_Restore from the SCP.
  - Log AIN612 is generated, specifying the control lists that were restored, the source of the restore request, the type of restore request,

the number of controls deleted, and the SSN and PointCode of the SCP originating the restore request.

- OM register NAGCRS increments (OM Group AINNCR) once for each ACG\_Global\_Ctrl\_Restore\_Success message sent by the SSP to the SCP.
- when the request was initiated by the SSP operating company personnel
  - Warnings and confirmation prompts are provided to the operating company personnel.
  - The results of the restore request is displayed on the operating company personnel's terminal.
  - An AIN612 log is generated specifying the control list(s) restored, the source of the restore request, the type of restore request, and the number of controls deleted.
- Optionally, an operating company can elect to use audible or visual alarms to alert them to restore events. This can be achieved by datafilling table OMTHRESH as indicated in NTP 297-8021-327, Volume 24, to set the alarm and the conditions which should cause the alarm.

See Chapter 11: “Operational measurements for AIN” on page 327 for a description of the AIN612 log.

#### **8.4.1 ACGRESTORE command**

See Section 25.10.2 “Automatic Code Gapping commands” on page 711.

### **8.5 Limitations**

See Section 20.7 “ACG limitations” on page 683.



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## 9 Resource monitoring

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This chapter describes the feature AIN Monitor\_For\_Change for lines and hunt groups. Monitor\_For\_Change for lines was developed in NA006 and enhanced in NA008 for ISDN and KSET agents. Monitor\_For\_Change for hunt groups was developed in NA012.

### 9.1 Overview

Monitor\_For\_Change allows an SCP to request the SSP to monitor the status of a facility (a line or a multi-line hunt group). When the status of the facility matches that requested by the SCP, a message is sent to the SCP indicating a StatusMatch. When the status of the facility is different from that requested by the SCP, the facility is monitored either till a time when the status matches that requested by the SCP or the monitor time specified by the SCP expires.

Monitor\_For\_Change is currently supported for single lines and for multi-line hunt groups.

#### 9.1.1 Monitoring single lines

The overall functionality of the Monitor Resources feature for lines is illustrated in Figure 104, "Process for monitoring single lines" on page 300. The individual functional blocks shown are then further described in the following sections.

When the SSP receives a Monitor\_For\_Change message from the SCP it must undergo a series of checks to determine when the line matches the state requested by the FacilityStatus parameter. When the status of the line does not match the requested status and the MonitorTime parameter is non-zero, the SSP sets up a monitor on the line. When the status of the line changes to the desired state, the SSP returns a Status\_Reported message with the FacilityStatus parameter set to StatusMatch. When the timer expires before the line switches to the desired state, the SSP returns a Status\_Reported message with the StatusCause parameter set to TimeOut.

When the BearerCapability parameter is present in the Monitor\_For\_Change message and a call can be established using the specified BearerCapability, the SSP must consider the applicability of switch-based features.

When the BearerCapability parameter is not present in the Monitor\_Resources message then the physical state of the line is used directly to determine the response, without considering any switch-based features.

When a monitor is active on a line the switch can consider a change in switch-based features that affect the status of the line. CCW is the only switch-based feature supported in the NA012 release that can result in a change of line status during the duration of the monitor.

For example, a monitor is set up to determine when the line becomes busy. At some point in the call the dial cancel call waiting feature is invoked. The SSP immediately sends a Status\_Reported message with parameter StatusCause set to StatusMatch.

The parameters used in the Monitor Resources messages are described in Section 9.2.1, "Monitor\_For\_Change SCP request message" on page 295, Section 9.2.2, "Monitor success SSP response message" on page 298, Section 9.2.3, "Status\_Reported SSP response message" on page 298.

### 9.1.2 Monitoring hunt groups

The overall functionality of the monitor resources feature for hunt groups is illustrated in Figure 105, "Process for monitoring hunt groups" on page 307. The individual functional blocks shown are then further described in the following sections.

The Mlhg field in parameter FacilityGID is used to monitor a hunt group and its value ranges from 0 to 32767. When parameter FacilityGID is present and parameter CalledPartyID is not present, the contents of parameter FacilityGID field is used for further processing. When parameters FacilityGID and CalledPartyID are present, parameter FacilityGID is ignored and the message is processed as in single lines. The presence of a valid BearerCapability parameter in the Monitor\_For\_Change message determines when switch-based features are considered in determining the status of the hunt group. The physical state of the hunt group is used to determine the status when parameter BearerCapability is not present. When the status of the hunt group matches the status requested by the SCP, a Status\_Reported message with the StatusCause parameter set to StatusMatch is sent to the SCP.

A monitor is set up on the hunt group when the status of the hunt group does not match the requested state in Monitor\_For\_Change message and the MonitorTime parameter is non-zero. A Monitor\_Success message is sent immediately by the SSP when a monitor can be setup on the hunt group.

A Status\_Reported message with the FacilityStatus parameter set to StatusMatch is sent by the SSP when the status of the hunt group changes to the desired state before the timer expires. When the timer expires before the

hunt group changes to the desired state, the SSP returns a Status\_Reported message with the StatusCause parameter set to timeOut.

A hunt group is considered idle when at least one of the members is idle. The hunt group is also considered idle when the pilot subscribes to CWT, all members of a hunt group are in Call Processing busy state and no call is waiting.

A hunt group is considered busy when all members of the hunt group are in Call Processing busy state. A hunt group is also considered busy when all the members are in Call Processing Busy state, pilot subscribes to CWT and a call is already on hold.

## 9.2 Messages

Communication between the SCP and the SSP is by SS7 with TCAP user parts. For monitor resource, there are three TCAP messages: Monitor\_For\_Change SCP request message, Monitor\_Success switch response message and Status\_Reported switch response message.

### 9.2.1 Monitor\_For\_Change SCP request message

The Monitor\_For\_Change message is an SCP query message requesting the SSP to notify it of the status of a particular resource. The parameters that make up the Monitor\_For\_Change message are as follows:

- BearerCapability (O)
- CalledPartyID (O)
- FacilityGID (O)
- FacilityMemberID (O)
- FacilityStatus (M)
- MonitorTime (M)

A Monitor\_For\_Change message must be received in a query package, in an invoke (last) component type. When a Monitor\_For\_Change operation is received in any other component type, a fatal application error of “Unexpected Communication” is raised.

The parameters must appear in the following order or an unexpected parameter sequence, fatal application error is reported to the SCP:

- FacilityStatus
- MonitorTime
- CalledPartyID
- FacilityGID

- FacilityMemberID
- BearerCapability

Unknown or extraneous parameters are ignored.

When either of the mandatory parameters is missing, it is reported as missing mandatory parameter, this is a fatal protocol error.

While decoding each parameter, the following items are checked:

- Parameter Tag Type is SIMPLE\_PARAMETER
- TCAP Parameter Class is CONTEXT\_SPECIFIC\_CLASS
- TCAP Parameter Form is PRIMITIVE

When any of these items does not match, the parameter type cannot be determined and the parameter is not decoded. This results in a missing mandatory parameter error.

#### **9.2.1.1 FacilityStatus parameter**

Parameter FacilityStatus is verified to ensure that it does not exceed the maximum length and that it has one of the following values:

- busy (0)
- idle (3)

Any error is reported as an erroneous data value, fatal application error.

#### **9.2.1.2 Monitor time parameter**

Parameter MonitorTime is checked to ensure that it does not exceed the maximum length. No checking is done to ensure that the BCD digits are in the range 0 to 9 (that is, it is possible for the digits to be hexadecimal values A through F).

#### **9.2.1.3 CalledPartyID parameter**

Either parameter CalledPartyID or FacilityGID must be present. When both parameters are present, parameter FacilityGID is ignored and parameter CalledPartyID is used. When neither are present, a fatal application error of missing conditional parameter is raised.

See Section 6.4.4.19.8, "CalledPartyID parameter" on page 222.

#### **9.2.1.4 FacilityGID parameter**

Parameter FacilityGID can take four different values, but for monitoring hunt groups the only valid field would be MLHG. This field contains the index of a hunt group that must be monitored. These indices are mapped to valid hunt

groups on the SSP. According to BellCore specifications, Mlhg is an integer in the range of 1 through 2047, inclusive.

The Mlhg field in parameter FacilityGID, maps to the hunt group index in table HUNTGRP.

**Note 1:** This activity supports extended range of FacilityGID parameter from 0 to 32767 and a Bellcore specification regarding the extended range has been sought.

**Note 2:** Either the CalledPartyID or FacilityGID must be present. When both are present, FacilityGID is ignored and CalledPartyID is used. When neither are present, a fatal application error of missing conditional parameter is raised.

#### **9.2.1.5 FacilityMemberID parameter**

This parameter contains an identifier of a trunk group member of MLHG member.

For AIN Service Enablers, The range of values for this parameter is 1 through 2047, inclusive for MLHG member IDs, because the FacilityGID parameter can only be set to MLHG.

For AIN Essentials, the range of values for this parameter is 0 through 4095, inclusive for trunk IDs and 1 through 2047, inclusive for MLHG member IDs. It is checked to ensure that its length does not exceed the allowable maximum and that its value in the appropriate range

#### **9.2.1.6 BearerCapability**

Any error in parameter BearerCapability is reported as an erroneous data value fatal application error.

When parameter BearerCapability is not included in the Monitor\_For\_Change message, only the physical state of the facility is used to determine when the facility is busy or idle. For ISDN, when all channels allocated to a DN are in use the facility is busy, when a channel is not in use the facility is idle.

When parameter BearerCapability is included in the Monitor\_For\_Change message, the SSP must determine when a call using the specified BearerCapability can be established.

For a hunt group with POTS, RES, IBN, or KSET agents as members, the only valid BearerCapability is Speech. When the BearerCapability is not valid for the specified agent a Status\_Reported message is sent to the SCP with parameter FailureCause set to unavailableResources. When the BearerCapability is valid for the hunt group with specified agents, it is required

to consider the applicability of switch-based features when determining the status of the hunt group.

See Section 6.4.4.19.4, "BearerCapability parameter" on page 220.

### **9.2.2 Monitor success SSP response message**

The Monitor\_Success message is an SSP response message that is sent from the SSP to the SCP in a Conversation Package Type. This message is sent when the SSP has successfully started monitoring the resource for the status (either idle or busy) as determined from the Monitor\_For\_Change message.

The Monitor\_Success message contains parameter FacilityStatus. Parameter FacilityStatus contains the status of the facility when the monitor was started. The monitor resource application is responsible for ensuring that the parameter data of the Monitor\_Success message that is passed to the AIN messaging software are correct.

The Monitor\_Success message must be a conversation package with an invoke (not last) component with an operation code of Monitor\_Success. Parameter FacilityStatus (mandatory) contains the status that the monitor resource application is waiting for (either busy or idle).

### **9.2.3 Status\_Reported SSP response message**

The Status\_Reported message is an SSP response message that is sent from the SSP to the SCP in a response package type. This message is sent when the SSP has determined that the monitored resource has reached the required status or the monitor timer has expired.

A Status\_Reported message contains the following parameters:

- FacilityStatus (optional)
- StatusCause(optional)
- FailureCause (optional)

Although all the parameters are optional, at least one of the parameters must be present in a Status\_Reported message.

The Monitor Resource application is responsible for ensuring that the parameter data of the Status\_Reported message to the AIN messaging software are correct.

## **9.3 Monitor\_For\_Change process**

This function allows the SCP to query the SSP for the status of a particular resource.

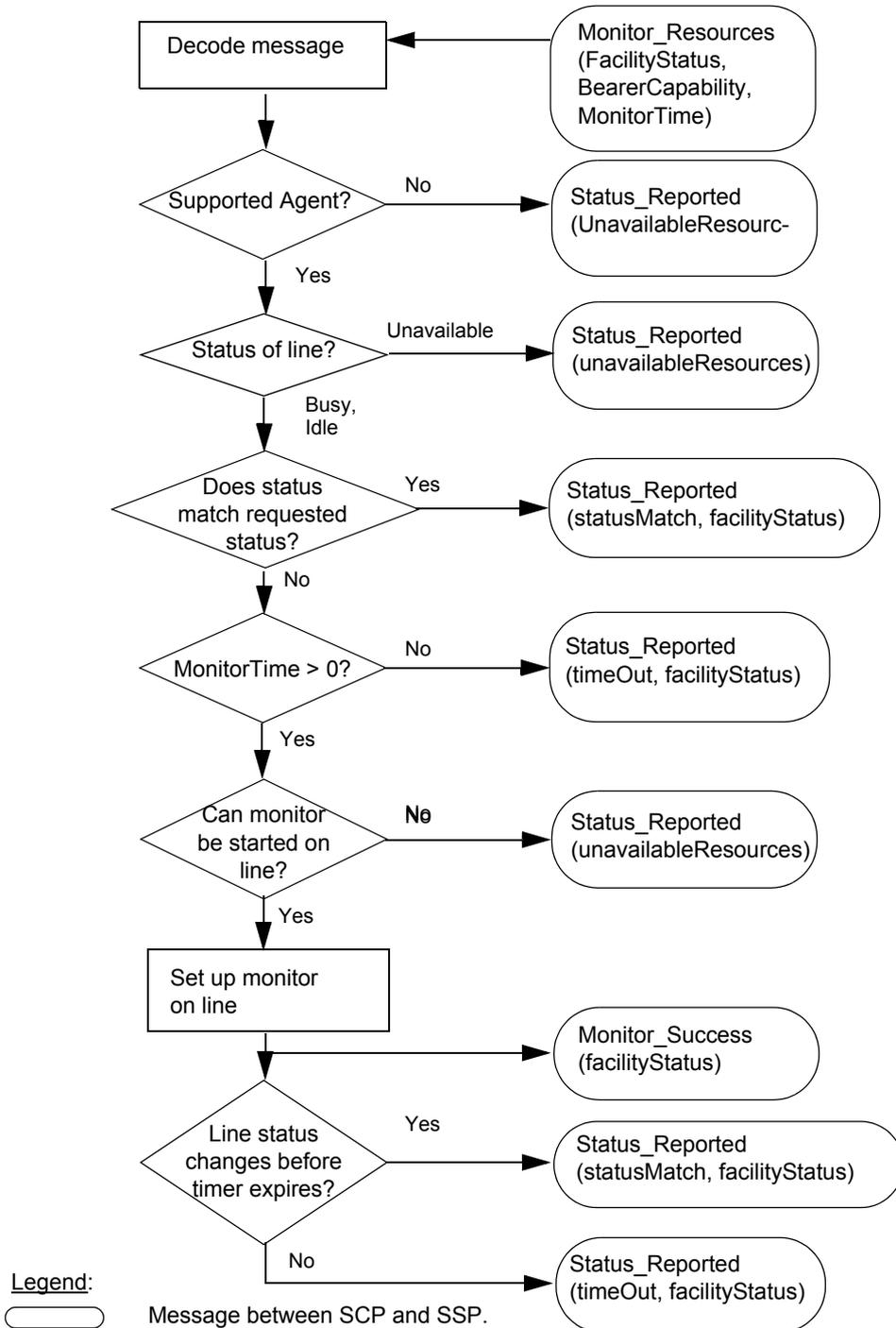
### 9.3.1 Monitoring single lines

Single lines can be monitored when the CalledPartyID parameter in the monitor for change (MFC) query contains the directory number (DN) of the line to be monitored. The process of monitoring lines is as follows:

When the SSP receives a Monitor\_For\_Change message from the SCP, it undergoes a series of checks to determine when the line matches the state requested by parameter FacilityStatus. When the status of the line does not match the requested state and parameter MonitorTime is non-zero then the SSP sets up a monitor on the line. When the status of the line changes to the desired state within the monitor time, the SSP returns a Status\_Reported message with parameter FacilityStatus set to StatusMatch. When the timer expires before the line switches to the desired state then the SSP returns a Status\_Reported message with the StatusCause parameter set to timeOut.

See Figure 104 “Process for monitoring single lines” on page 300, for an illustration of the steps described in the preceding paragraph.

Figure 104 Process for monitoring single lines



### 9.3.1.1 Check for supported agents

Refer to Chapter 4: “Agent support” on page 127 for the agents that are supported. When the agent is not supported a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP. When the agent is supported, further checks are done as follows.

### 9.3.1.2 Determining the status of a line

The status of a line is determined in the following manner: when BearerCapability is present in the message, it is checked for its validity. When it is invalid or is not supported by the agent involved, then a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP.

When the BearerCapability is not present, the physical state of the agent is checked. When the physical state is busy, the line is considered to be busy. When the physical state is idle, the line is considered idle. When it is any other state, the line is considered to be unavailable.

When the BearerCapability is present and is valid, then termination restriction features are checked for on the line. When termination is restricted, the agent is considered busy, otherwise further check is done to find the physical state of the Hunt Groups. When the physical state is busy, the line is considered to be busy. When the physical state is idle, the line is considered idle. When it is any other state, the line is considered to be unavailable.

When the physical state is busy and the agent is in talking state, the termination facilitating features (for example, call waiting, CWI for IBN lines, AFC and ACOU for ISDN BRAFS) are checked. When CWT is assigned, cancel call waiting (CCW) is also checked for. When it is possible to terminate a call on the agent using the features mentioned here, the agent is considered idle. Otherwise, the agent is busy.

Table 82 describes the interaction between Monitor\_For\_Change for lines and call waiting/cancel call waiting.

**Table 82 Interaction between MFC for lines and call waiting/cancel call waiting**

Call waiting subscribed?	Is cancel call waiting active?	Call on hold?	Line is considered to be:
Yes	No	No	Idle
Yes	Yes	No	Busy
Yes	No	Yes	Busy

Call waiting cannot be assigned to ISDN BRAFS lines. Instead, additional function call (AFC) and/or additional call offer unrestricted (ACOU) can be assigned to them.

When AFC is not assigned to the line, the status of the line is the same as determined during the hardware status check.

When AFC is assigned and ACOU feature package is not present, a line is considered idle when the line is hardware idle or there is at least one idle AFC key; otherwise the line is considered to be call reference busy.

When AFC is assigned and ACOU feature package is present, the status of an EKTS line is determined as explained in the previous paragraph. A non EKTS line is considered idle when the B channel is available. Otherwise, when ACOU is not assigned the line is considered interface busy.

When ACOU is assigned to a non-EKTS line, the line is considered idle when the following conditions are met:

- the network busy counter (NBC) of that line is less than the network busy limit (NBL)

*Note 1:* NBC is the counter maintained by the switch to keep track of the number of active call references in use for called-user notification of waiting calls (for a given DN served by a non-EKTS ISDN interface).

*Note 2:* NBL is the maximum number of call references that the switch allows for called-user notification of waiting calls (for a given DN served by a non-EKTS ISDN interface).

- the line is hardware idle or at least one AFC key is idle (otherwise it is considered call reference busy)

When NBC is equal to NBL, it is considered notification busy.

When the agent is notification busy or call reference busy, it is considered busy.

### **9.3.1.3 Determining when a monitor needs to be set up**

The status that has been determined is compared with that requested by the SCP. When they match, a Status\_Reported message is sent immediately to the SCP with StatusCause parameter set to StatusMatch and FacilityStatus parameter set to the status of the line.

When the status of the line does not match that requested by the SCP, then the Monitor Time is checked for. When it is zero then a Status\_Reported message is sent back immediately indicating the status of the facility in the FacilityStatus parameter and the StatusCause parameter is set to timeout.

When the status of the line does not match the requested status and the Monitor time value is non-zero, an attempt is made to start a monitor on the line in order to monitor any status change on the line.

#### **9.3.1.4 Setting up a monitor**

When the line is idle, there is no condition that would preclude the setting up of a monitor. In the case where the line is busy, a monitor is not set up under the following conditions:

- When the line is connected to an operator station.
- When termination to the line is restricted. The features indicating the termination restriction are typically long-duration in nature, and are not expected to change frequently for a given line.
- When an ISDN BRI agent is interface busy, a monitor cannot be started because different DNs need to be monitored to determine the B-channel availability.
- When the line has subscribed to Call Waiting and Call state of the line is not stable (i.e not TALKING), then the line is considered unavailable for monitoring, as for Call Waiting to become applicable the line state has to become stable (Monitor Resources can not detect the Call state transition to TALKING). However for KSETs and ISDN BRAMFT agents, when the Call Waiting key is already busy on a call, then the line can be monitored even when the Primary DN Call state is unstable, because in this case the call on the Primary DN is considered held.
- When the status checking indicates that the line is not available.

When a monitor cannot be set up due to any of the previously-mentioned reasons, a Status\_Reported message is sent to the SCP with the FailureCause parameter set to UnavailableResources

#### **9.3.1.5 Monitoring a line**

A monitor is set up on the requested line. Once the monitor is active on a line (and a call, when there is a call associated with the line), one of the following two scenarios can occur:

- either an event occurs on the line or call (when present), that changes the status to match the status requested by the SCP
- the monitor times out

**9.3.1.5.1 Events monitored on an idle line** When parameter BearerCapability is null, the events monitored on an idle line are: the agent going off-hook and a call landing on it.

Certain events can cause an idle line to change status to busy while a monitor is active, when a valid BearerCapability parameter is present in the query.

When such an event occurs, the monitor is stopped and a Status\_Reported message is sent to the SCP with parameter FacilityStatus set to busy and parameter StatusCause set to StatusMatch.

Table 83 illustrates the events (monitored on an idle line) that can cause a status change while a monitor is active.

**Table 83 Events monitored on an idle line**

State	Event
On-hook	Telephone is taken off-hook.
Off-hook, talking, CWT subscribed, no call on hold, cancel call waiting inactive	<ul style="list-style-type: none"> <li>• Telephone goes on-hook, then off-hook.</li> <li>• Another caller attempts to connect.</li> <li>• Flash hook and dial cancel call waiting (CCW) code.</li> <li>• CWT key on a KSET/ISDN BRAMFT gets another call.</li> </ul>
Off-hook, talking, one AFC key available	<ul style="list-style-type: none"> <li>• Another Caller attempts to connect.</li> <li>• AFC key is used to originate a call.</li> </ul>

**9.3.1.5.2 Events monitored on a busy line** A line is considered busy when the telephone is off-hook in call processing busy state. This means that the line can be involved in a call but cannot be in a state such as lockout.

When the BearerCapability parameter is null, then the only event that is monitored for on a busy line is the line going on hook.

When a valid BearerCapability parameter is present in the query, then the supported switch-based features are also considered by the monitor. The state of an ISDN BRAFS agent is described in Section 9.3.1.2 “Determining the status of a line” on page 301.

Table 83 “Events monitored on an idle line” illustrates events that cause a busy line to change status to idle while a monitor is active. When such an event occurs, the monitor is stopped and a Status\_Reported message is sent to the SCP with parameter FacilityStatus set to idle and parameter StatusCause set to StatusMatch.

Table 84 illustrates the events (monitored on an busy line) that can cause a status change while a monitor is active.

**Table 84 Events monitored on a busy line**

State	Event
Off-hook (dial tone, listening to ringback, listening to announcement)	Telephone is put on-hook.
Off-hook, talking, CWT not subscribed	Telephone is put on-hook.
Off-hook, talking, CWT subscribed, cancel call waiting active	Telephone is put on-hook.
Off-hook, talking, CWT subscribed, cancel call waiting inactive, second call on hold.	Either remote party hangs up. Telephone is put on-hook.
AFC subscribed, ACOU assigned, Notification busy	A waiting call is answered. Telephone is put on-hook. Remote party hangs up.
AFC subscribed, ACOU package not present, no AFC key is idle.	Remote party hangs up. Telephone is put on-hook.

**9.3.1.5.3 Monitor times out** When no transition in line state occurs during the delay specified in the Monitor\_Resource message, the monitor times out. In this case, a Status\_Reported message is sent to the SCP with parameter FacilityStatus set to the current status of the facility (either busy or idle) and parameter StatusCause set to timeOut.

However, in the case of a timeOut, FacilityStatus reported in the Status\_Reported message is not the actual status of the facility under the following conditions:

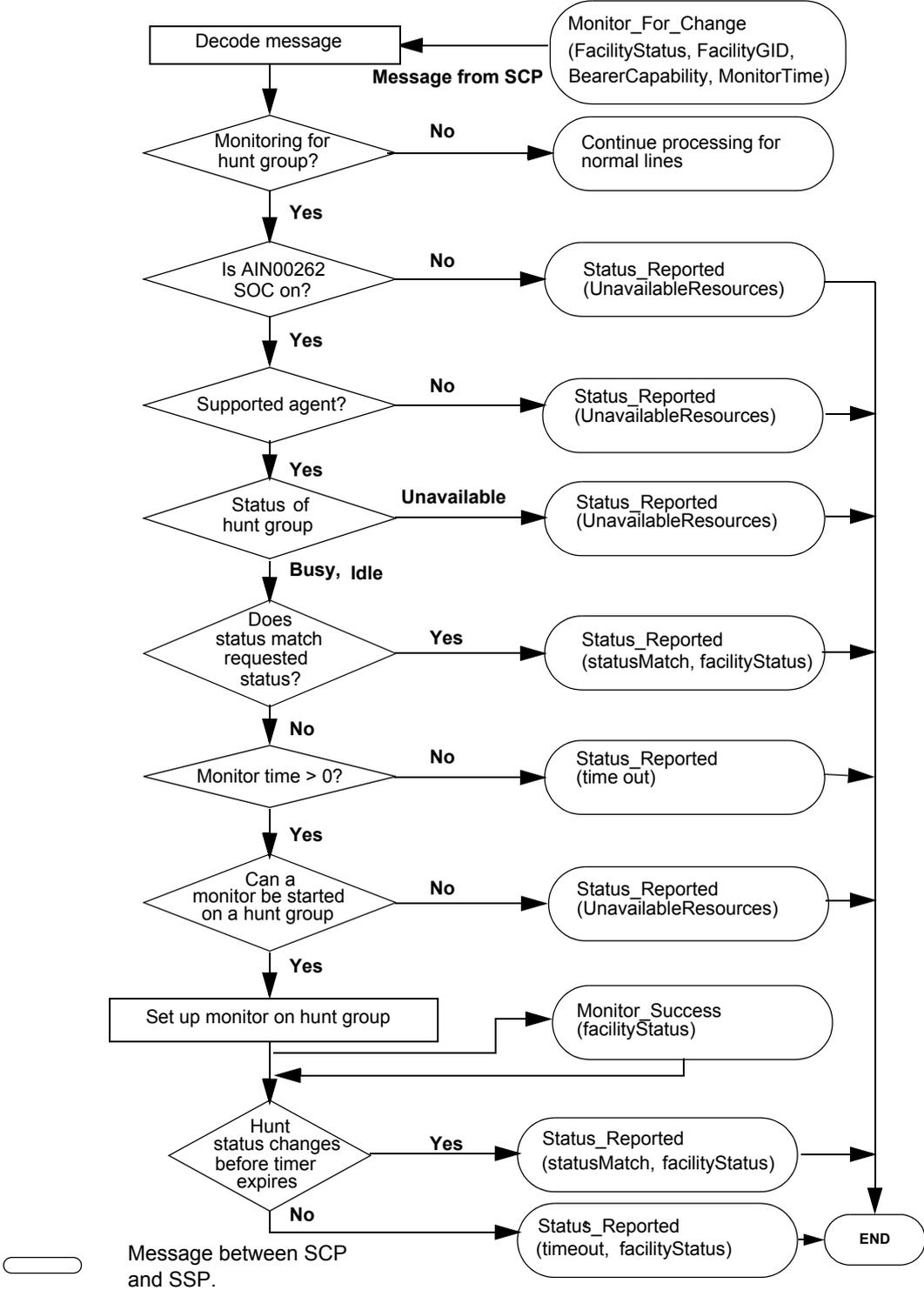
- Facility changes to a state other than idle or busy during the monitor period. For example, when through a MAPCI command the state is changed to manual busy (MB).
- A termination restriction feature is assigned (for example, DTM) to the facility through SERVORD or becomes active (for example, DND) on the facility during the monitor period.

### 9.3.2 Monitoring hunt groups

A hunt group can be monitored when the Monitor\_For\_Change message contains parameter FacilityGID and does not contain parameter CalledPartyID.

Figure 105 on page 307 illustrates the process for monitoring hunt groups.

Figure 105 Process for monitoring hunt groups



### 9.3.2.1 SOC check

AIN00262 is the SOC option for Monitor\_For\_Change for hunt groups. This should be turned on for any further processing of the message. When it is found idle, a Status\_Reported message with StatusCause set to UnavailableResources, is sent to the SCP.

### 9.3.2.2 Check for supported agents

When the agent is not supported a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP. When the agent is supported, further checks are performed.

### 9.3.2.3 Determining the status of a hunt group

The status of a Hunt groups is determined in the following manner:

- When BearerCapability is present in the message, it is checked for its validity. When it is invalid or is not supported by the agent involved, then a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP. There is also a check to ensure that the BearerCapability in the message received matches that assigned to the Directory Number (DN) of the hunt group. When it does not then a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP
- When the BearerCapability is present and is valid, presence of SUS and PLP is checked on the hunt group and when either of them is present, a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP

The status check for the hunt group from this point differs for different agents. Every member in the hunt group is checked for its status. The status check depends on the agent involved. When the hunt group has POTS/RES/IBN/KSET agents, then the status checking would be as follows:

- Check the physical state of the member.
- When it is idle, check when BearerCapability was present in the message. When it was, then verify that termination is not restricted (termination is restricted when either RMB,DTM,DIN are present). When BearerCapability is not present or when it is present but termination is not restricted, the member would be considered idle.
- When the member is found to be idle after the checks done as mentioned previously, MSB or DND activation is checked for on the member. When either of these is active, the member would be considered busy. Otherwise it would be considered idle.

After the previously-mentioned checks are performed on all members, the status of the hunt group is determined as follows:

- all Members are in MB, LO, NEQ and INB state (hunt group is unavailable)
- all members have termination restricted on them (RMB, DTM or DIN) and the monitor request was for idle (hunt group is unavailable)
- hunt group is considered idle when at least one member in the hunt group is idle
- hunt group is considered busy when all members are busy at the end of the status check described previously and all are not in MB, LO, NEQ and INB state
- the hunt group is considered busy when all members are busy and call waiting (CWT) is not subscribed or when CWT is subscribed and there is a call waiting on the last member

For ISDN BRAFS hunt groups, every member in the hunt group is checked for its status. The following checks are performed for every member:

- check the physical state of the member
- when BearerCapability is present in the message, the call type of the member is checked for its compatibility with the BearerCapability specified in the message
- when an idle call appearance is found, verify that termination is not restricted on the member (when BearerCapability was present in the message). Termination is restricted when either RMB, DTM, or DIN are present
- when the member is idle after the checks are performed (previously mentioned), MSB activation is checked for on the member (when MSB is active, the member would be considered busy, otherwise it would be considered idle)

After the previously-mentioned checks are done on all members, the status of the hunt group is determined in the following way:

- Hunt Group is unavailable when
  - All Members have call type incompatible with the BearerCapability in the message.
  - All Members are in MB,LO,NEQ,INB state
  - All members have termination restricted on them (RMB,DTM or DIN) and the monitor request was for idle.
- Hunt group is considered idle when at least one member in the hunt group is idle after the status check. In case of a hunt group where all members are

busy, when call waiting (CWT) is subscribed and there is no call that is waiting on the last member, the hunt group would be considered idle.

- Hunt group is considered busy when
  - all members are busy at the end of the status check described previously
  - all are not in MB,LO,NEQ,INB state
  - at least one member has its call type compatible with the BearerCapability of the message.

#### **9.3.2.4 Determining when a monitor set up is required**

After the status of the hunt group has been determined to be either Busy or Idle, it is compared with the status requested in the Monitor\_For\_Change message received from the SCP. When they match, the SSP returns a Status\_Reported message with the FacilityStatus parameter set to the hunt group status and the StatusCause parameter set to StatusMatch.

When MonitorTime value is zero no monitor is set up and the SSP shall send a Status\_Reported message with the FacilityStatus parameter set to the hunt group status and the StatusCause parameter set to timeout.

When status of the hunt group does not match that requested in the Monitor\_For\_Change message and MonitorTime value is non-zero then a monitor is set up on the facility and a Monitor\_Success message is immediately sent back to the SCP. The exception to this is when the hunt group is found to be unavailable. In that case a Status\_Reported message with StatusCause set to UnavailableResources is sent to the SCP.

There can be only five monitors started on a facility. The maximum number of monitors that can be active on an SSP is limited to 2000.

#### **9.3.2.5 Monitoring a hunt group**

One of the following occurs when a monitor is successfully set up on a hunt group:

- the monitor times out, or
- the hunt group changes to the state requested in the Monitor\_For\_Change message before the timer expires

When a termination restriction feature gets added to any member of the hunt group after the monitor was started, then the results would be unreliable.

### 9.3.3 Events monitored on an idle hunt group

Events that are of importance while monitoring a hunt group for busy status are as follows:

- A member getting busy in a call (either by call origination or by terminating a call on it).
- A call waiting on the last member when all others are busy
- An idle hunt member getting deleted

Any of the previously-mentioned events can cause a hunt member to be treated as busy and if all members in the hunt group are busy due to any of these events, the hunt group would be considered busy. When the hunt group is found to be busy, the monitor is stopped and a Status\_Reported message is sent to the SCP with parameter FacilityStatus set to busy and parameter StatusCause set to StatusMatch.

### 9.3.4 Events monitored on a busy hunt group

Events that are of importance while monitoring a hunt group for busy status are as follows:

- A member going idle (onhook).
- A call waiting on the last member disconnects (when the hunt group has CWT).

Any of the previously-mentioned events can cause a hunt member to be treated as idle and the hunt group is idle when any member is idle. When the hunt group is found to be idle, the monitor is stopped and a Status\_Reported message is sent to the SCP with FacilityStatus parameter set to idle and StatusCause parameter set to StatusMatch.

### 9.3.5 Handling time out

When there is no transition in hunt group state during the Monitor Time period specified in the Monitor\_Resource message, the monitor times out. In this case, a Status\_Reported message is sent to the SCP with parameter FacilityStatus set to the current status of the facility (either busy or idle) and parameter StatusCause set to timeOut.

When a timeOut occurs, the FacilityStatus reported in the Status\_Reported message is not the actual status of the facility under the following conditions:

Subscription of a termination restriction feature after a monitor is started does not impact the previous state of the hunt group, unless a state change occurs on the member.

The status sent during TimeOut is not reliable when the facility changes to a state other than idle or busy during the monitor period. For example, when using a MAPCI command, the state is changed to manual busy (MB).

## **9.4 Multiple monitors**

When more than one monitor resources request is received for a hunt group and the status of the facility does not match the status requested by the SCP, each monitor resources request results in a separate monitor set up for that facility.

When the status of the facility changes to match the status requested by the SCP, each active monitor is stopped and one Status\_Reported message per monitor is sent to the SCP with parameter StatusCause set to StatusMatch.

When one of the monitors times out before the status of the facility changes to match the status requested by the SCP, that monitor is stopped and a single Status\_Reported message is sent to the SCP (the other monitors continue to be set up).

## **9.5 Agent support**

See Section 4.11.1 on page 155 and Section 4.11.2 on page 156.

## **9.6 Error handling**

See Section 19.1.3.4 “Non call-related failures” on page 654.

## **9.7 Limitations and restrictions**

See Section 20.24.31.1 “Resource monitoring for lines” on page 711 and Section 20.24.31.2 “Resource monitoring for hunt groups” on page 711.

## **9.8 Feature interactions**

See Chapter 22: “AIN/DMS-100 interactions (A and B)” on page 707, Chapter 23: “AIN/DMS-100 interactions (C)” on page 763, and Chapter 2: “AIN/DMS-100 interactions (S to Z)” on page 163 for feature interactions for Monitor\_For\_Change for hunt groups and lines.

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## 10 Information revision messages

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This chapter describes AIN Service Enablers Update message parameter processing.

### 10.1 Update\_Request message and processing

This message allows the SCP to activate or deactivate the functionality of triggers Off-Hook\_Immediate, Off-Hook\_Delay, Off-Hook\_Delay and Termination\_Attempt at an SSP, when defined in a trigger group provisioning model.

This section describes the implementation of the Update\_Request message and processing FS.

#### 10.1.1 Update\_Request message and processing

Table 85 lists the parameters that make up the Update\_Request message.

**Table 85 Update\_Request message parameters**

Parameter	Description
BearerCapability (O)	See Section 6.4.4.19.4 on page 220.
TriggerCriteriaFlag (O)	See Section 10.6 on page 323.
UserID (M)	See Section 10.7 on page 324.

#### 10.1.2 Update\_Data message and processing

Table 86 lists the parameters that make up the Update\_Data message.

**Table 86 Update\_Data message parameters**

Parameter	Description
FailureCause (O)	Functionality inherited from AIN Essentials.

## 10.2 Update message and processing

The Update message allows the SCP to perform the following tasks:

- activate or deactivate any trigger subscription
- update the provisioned value of the T-ONoAnswer and the T-TNoAnswer trigger timers
- activate or deactivate the Message Waiting Indicator (MWI)

The message also allows the SCP to instruct the SSP to modify internal SSP values. When the instructions in the Update message are successfully completed, the SSP sends an Update\_Success message to the SCP. When the instructions are not successfully completed, the SSP sends to the SCP one of the following:

- an Application\_Error message
- a Failure\_Report message
- a Reject\_Component message

These are generic error messages that are not specific to the Update message.

During an image dump, Update messages still write to the necessary protected data locations. The Update message and the Update\_Success message also increment OM counters and SOC counters.

This section describes the implementation of the Update message and processing FS.

Table 87 lists the parameters that make up the Update message.

**Table 87 Update message parameters**

Parameter	Description
AdministrableObject (M)	See Section 10.3 on page 321.
AMASlpID (O)	See Section 13.10 "Register AMASLPID" on page 356.
Amp1 (O)	
Amp2 (O)	
ControlEncountered (O)	
EditListType (O)	
ExtensionParameter (O)	

**Table 87 Update message parameters (Continued)**

Parameter	Description
<b>Note:</b> Parameters in shaded areas are not supported in this message for this release.	

### 10.2.1 Trigger activation and deactivation

The Update Message allows the SCP to activate and deactivate any trigger subscription. Using the TriggerItemID and SSPUserResourceID contained in a TriggerItemAssignment, the SCP can set the appropriate trigger to the value of the ActivationStateCode. The ActivationStateCode can be either ON or OFF. The data of subparameters must be supplied even though they are optional. Failure to provide any of the subparameters results in an error as specified in Section 5.7.3.1 of GR-1298. Currently GR-1298/1299 does not define a way to activate/deactivate triggers subscribed to Customer Groups and PRI-B channels, therefore these triggers cannot be supported by Update functionality.

### 10.2.2 MessageWaitingIndicator activation and deactivation

The MessageWaitingIndicator (MWI) is a logical item assigned to the user's DN that can be activated or deactivated. When the MWI is activated, the SSP indicates to the DN user "Messages waiting". This can be done with an audible indicator (Stuttered dial tone) or a visual indicator (Lamp) for analog lines or ISDN interfaces. When the MWI is deactivated, the SSP indicates to the DN user "No messages waiting" by turning off the indicator.

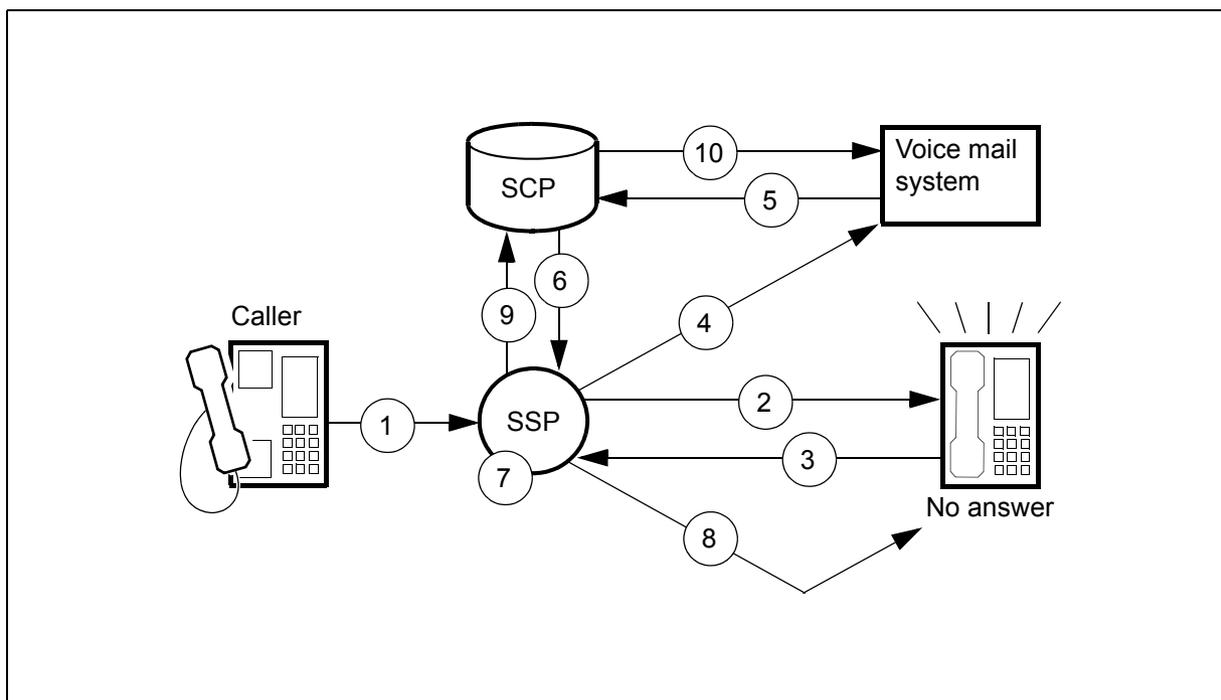
The Update message updates the status of the MWI. The SSPUserResourceID field of the Update message identifies the DN or DNCT associated with the MWI. The ServiceProviderID field identifies the message storage and retrieval system making the request. The SSP activates or deactivates the MWI status of the DN or DNCT based on the service and action stated in the UpdateGroups field.

The following scenario describes a call where an originating agent attempts to call a terminating agent and gets forwarded to a voice mail service. See Figure 106 on page 316.

1. The calling party dials the digits to reach the called party.
2. The SSP attempts to establish a connection with the called party.
3. The called party does not answer.
4. After a preset time, the SSP forwards the calling party to the voice mail service.
5. Once calling party finishes recording the message, the voice mail service sends a request to the SCP to activate the MWI.

6. The SCP sends an Update message to the SSP to activate MWI for the called party.
7. The SSP validates the request. The SSP validates the MSRID by comparing it to a list in the SSP.
8. The SSP activates MWI for the called party.
9. The SSP sends an Update\_Success or a Failure\_Report message to the SCP depending upon whether the action was successfully completed or not.
10. The SCP sends Request\_Completed message to the voice mail service.

**Figure 106 Update MWI call sequence**



### 10.2.3 Update\_Success message

The SSP sends the Update\_Success message without parameters to the SCP in a TCAP return result component when an Update is completed successfully.

### 10.2.4 Application\_Error

For error handling of the Update message, the SSP can return a Return\_Error component with an ApplicationError whose ApplicationErrorString field specifies an ErrorCause. The ErrorCause can be any one of the following:

- erroneousDataValue
- missingConditionalParameter
- unexpectedParameterSequence

**10.2.4.1 ErroneousDataValue**

The erroneousDataValue ErrorCause is returned when a mandatory parameter is encountered that is not within the specified range defined by GR-1299. The only exception to this rule is the value of the T-ONoAnswer trigger timer. When the T-ONoAnswer trigger timer value is out of range, an ErrorCause of missingConditionalParameter is returned.

**10.2.4.2 MissingConditionalParameter**

The missingConditionParameter value is returned when one of the following errors occurs:

- the optional ActivationStateCode parameter is missing for the triggerItemAssignment
- the optional parameters ONoAnswerTimer or TNoAnswerTimer are missing for the SSPUserResource
- the value of the T-ONoAnswer or the T-TNoAnswer timer value is not between 1 and 120, inclusive
- field MsrID in parameter ServiceProviderID is not populated

**10.2.4.3 UnexpectedParameterSequence**

The SSP sends ErrorCause value unexpectedParameterSequence when parameters are received in a sequence other than that defined by GR-1299.

**10.2.5 Failure\_Report**

The Failure\_Report message is one of the possible messages that can be sent to the SCP when there is a problem processing an Update message.

For error handling of the Update message, the FailureCause parameter of the Failure\_Report message can have one of the following values:

- unavailableResources
- rateTooHigh
- msridDoesNotMatchUserProfile

**10.2.5.1 UnavailableResources**

The unavailableResources error occurs when:

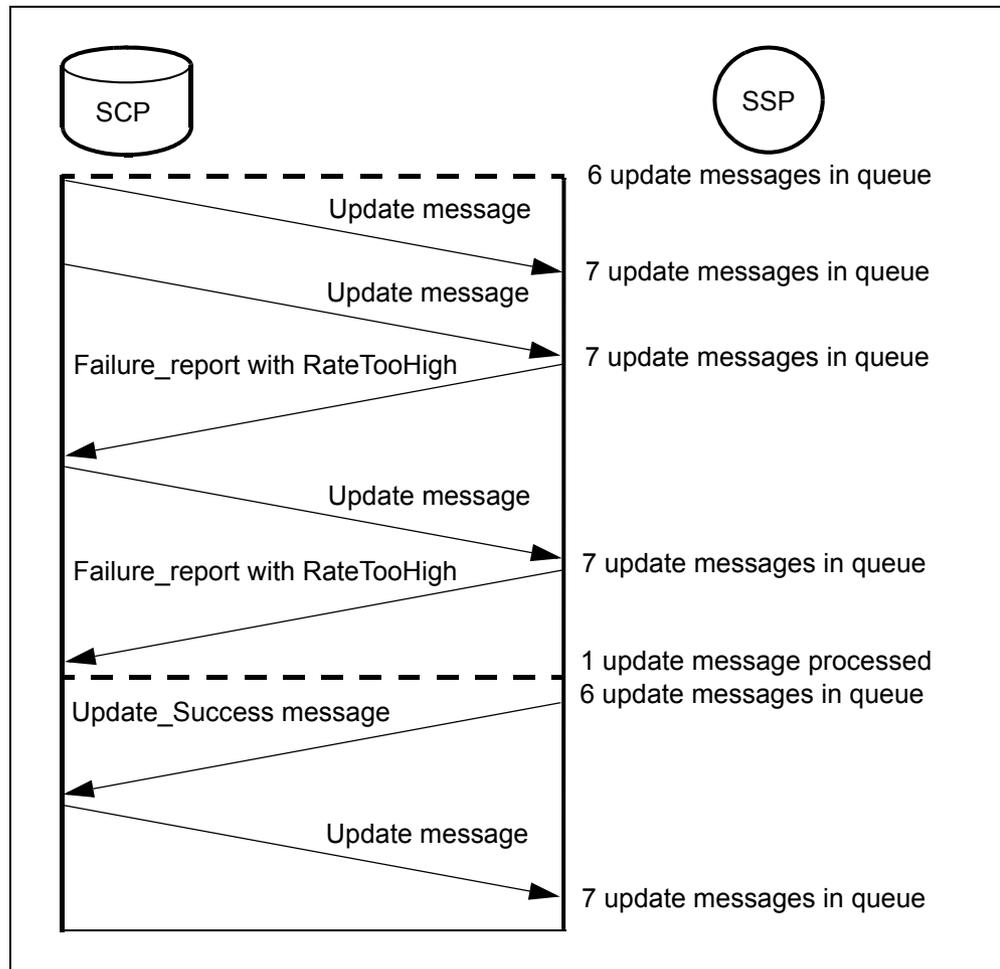
- the SSPUserResourceID is invalid, for timer, trigger, and MWI updates
- the Trigger Item ID parameter does not map to a defined subscription entity on the DMS SSP
- the SSP cannot activate or deactivate a trigger after parameter validation for any reason
- the SSP cannot update the T-ONoAnswer or the T-TNoAnswer trigger timer after parameter validation

- the Update messages attempts to invoke an application that is not supported (for example, SDF)
- the SSP attempts to invoke the feature during an ONP
- both the T-ONoAnswer trigger and T-TNoAnswer trigger timer update requests are in the same message
- the SSPUserResourceID contains PublicDialingPlanID or SpID
- the UpdateGroups field is audiomessagewaitingindicator and the action field specifies a delay interval
- a DN has an unsupported LCC and SSP tries to update the MWI status
- a DN is not in the IDL or CPB state and the SSP tries to update the MWI status
- the KSET or ISDN user does not subscribe to line option AINMWT and the SSP attempts to update the MWI (lamp and visual) status
- the MWI update request is received along with either or both of the following
  - a T\_ONoAnswer timer update
  - a T\_TNoAnswer timer update
- the MsrID is invalid
- when the SSP attempts to provide MWI (lamp and visual) status and the RES subscriber does not subscribe to the SSP-based feature MWT with suboption CMWI
- when the Update TIID message is sent to update a trigger for a MDN number with a TriggerItemSubNumber that does not match the number assigned to the primary member of the MDN group
- when the IBN agent that has submitted a Illmap activation request does not have a 6X19 or 6X20 card

#### **10.2.5.2 RateTooHigh**

The rateTooHigh FailureCause error occurs when the SCP sends Update messages too quickly for the SSP. Up to seven Update messages can be queued, including the message that is currently being processed. The queue length is determined by real time processing considerations.

Figure 107 Update message processing for rateTooHigh scenario



### 10.2.5.3 msridDoesNotMatchUserProfile

The `msridDoesNotMatchUserProfile` FailureCause error occurs when the SCP send an MSRID that does not identify a valid MSR system for the DN or DNCT.

### 10.2.6 Reject\_Component

The SSP sends this component with a problem code of `incorrectParameter` whenever a mandatory parameter is missing from the Update message.

### 10.2.7 Update Message Examples

The following examples show Update message parameter contents for various application.

#### 10.2.7.1 Changing the status of the message waiting indicator

The Update message below turns on the lamp on the DN 6137215460 and sends the display text to the CPE.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.DN := 6137215460,  
  ServiceProviderID.MsrID := 8197225060,  
  UpdateGroup1.service1 := messagewaitingindicator,  
  UpdateGroup1.action1 := ON  
)
```

#### 10.2.7.2 Updating T-ONoAnswer trigger timer

The following Update message below attempts to update the value of the T-ONoAnswer trigger timer to 60 seconds on an SSP with an ID of XXXXXX.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.LocalSSPID := XXXXXX,  
  ONoAnswerTimer := 60  
)
```

#### 10.2.7.3 Updating T-TNoAnswer trigger timer

The following Update message below attempts to update the value of the T-TNoAnswer trigger timer to 60 seconds on the SSP whose ID is XXXXXX.

```
UPDATE (  
  AdministrableObject(SSPUserResource),  
  SSPUserResourceID.LocalSSPID := XXXXXX,  
  TNoAnswerTimer := 60  
)
```

#### 10.2.7.4 Updating Trigger Item

The following Update message below attempts to turn ON (activate) the trigger item subscription link at detection point 1 for the trigger item named ofhkim1 in table TRIGITM.

```
UPDATE (  
  AdministrableObject(TriggerItemAssignment),  
  SSPUserResourceID.DN := 6137215460,  
  TriggerItemID.DPNumber := 1,  
  TriggerItemID.TriggerItemSubnumber :=  
  ofhkim1,  
  ActivationStateCode := ON,  
)
```

### 10.2.8 Update message interactions

The Update message feature has general interactions within AIN and with the DMS-100 switch. See Chapter 21: “AIN interactions introduction” on page 717 and Chapter 4: “Other interactions” on page 275.

### 10.2.9 CI commands

The Update message for ‘Change status of MWI’ has a CI increment ‘UPDCI’ that provides commands to simulate and test Update messages. See Section 25.14 “UPDCI increment” on page 722 for more details.

## 10.3 AdministrableObject parameter

AIN Service Enablers supports the following data items for the AdministrableObject parameter:

- SSPUserResource
- TriggerItemAssignment

When the SCP sends an Update message with unsupported parameters, then the SSP returns a Failure\_Report message indicating unavailable resources for each unsupported parameter.

### 10.3.1 SSPUserResource

The SSPUserResource parameter is used by the SCP to describe a switch resource, such as specifying that the value of the T-ONoAnswer trigger timer must change. For AIN Service Enablers’ the SSPUserResource structure contains:

- ONoAnswerTimer, described in Section 10.4 “ONoAnswerTimer parameter” on page 323
- ServiceProviderID
- SSPUserResourceID
- TNoAnswerTimer, described in Section 10.5 “TNoAnswerTimer parameter” on page 323
- UpdateGroups

#### 10.3.1.1 SSPUserResourceID

This field identifies the DN or DNCT that the change status of MWI is requested.

#### 10.3.1.2 UpdateGroups

In UpdateGroup1, when service1 indicates messagewaitingindicator or visualmessagewaitingindicator then Action1 can only be On or Off. UpdateGroup1 is used for visual or audio indication of MWI.

In UpdateGroup1, when service1 indicates visualmessagewaitingindicator then Action1 can only be On or Off. Display text is provided only when parameter Display Text is present. When lamp is available, its status is modified based on the action specified.

For UpdateGroup2, service2 can only indicate audiomessagewaitingindicator. Action2 can be On or Off or it can specify a delay interval from 1 to 60 seconds. UpdateGroup2 is used for audio indication of MWI.

*Note:* The delay interval is not supported for feature Update Message Support for Display Text visual MWI activity.

UpdateGroup1, UpdateGroup2 and the corresponding indication type for each group is illustrated in Table 88.

**Table 88 UpdateGroups with type of indication**

UpdateGroups	Type of Indication
UpdateGroup1:service1 = messagewaitingindicator	Lamp
UpdateGroup1:service1 = visualmessagewaitingindicator	Lamp
UpdateGroup2:service2 = audiomessagewaitingindicator	Stuttered dialtone

### 10.3.1.3 ServiceProviderID

This field contains a MsrID identifying the message storage and retrieval system making the request.

## 10.3.2 TriggerItemAssignment parameter

Parameter TriggerItemAssignment is used by the SCP to associate a trigger item to an SSP user resource. The TriggerItemAssignment structure contains the following values:

- ActivationStateCode
- PotentialUse
- SSPUserResourceID
- TriggerItemID

### 10.3.2.1 ActivationStateCode

This structure specifies the action to take: either activate (ON) or deactivate (OFF).

### 10.3.2.2 PotentialUse

This parameter is sent to indicate the addition or deletion of a feature to the PotentialUse Attribute associated with the SSP User Resource identified by the UserId and Bearer Capability parameters. This parameter in an Update message is currently ignored by the SSP and processing continues as though the parameter does not exist.

### 10.3.2.3 SSPUserResourceID

This structure identifies the SSP user resource associated with the trigger to be updated. This field can contain any of Dn, DnCtID, TrunkGroupID or LocalSSPID. Currently, the CT parameter in an Update message is ignored by the SSP and processing continues as though the parameter does not exist.

### 10.3.2.4 TriggerItemID

This structure contains the specific trigger to be activated or deactivated. It consists of two fields:

- Detection Point Number (DPNumber) that identifies the detection point to where the trigger applies. This field must contain one of the following TDPs: e1, e3, e4, e17, e19, e20, e30 or e33.
- TriggerItemSubNumber, that identifies triggers and events within a given detection point. This field corresponds with the TriggerItemName field in the TRIGITM table. See Section 10.17 “Table TRIGITM” on page 386.

## 10.4 ONoAnswerTimer parameter

This parameter contains the value, in seconds, of the originating no answer timer. The value of the timer can be from 1 to 120. The default value is 18. The RRBCME message can contain the timer only when the O\_No\_Answer EDP is requested.

During an ONP, Update messages are processed and new ONoAnswerTimer values are written to a protected store. However, any timer changes occurring from the transfer of the OFCENG table through the hardware SWACT are written to the dump side of the switch and are not captured on the restore side. Data can be lost during this period (about 8 hours) of the ONP

This parameter is controlled by SOC option AIN00210.

## 10.5 TNoAnswerTimer parameter

This parameter contains the value, in seconds, of the terminating no answer timer. The value of the timer can be from 1 to 120. The RRBCME message can contain the timer only when the T\_No\_Answer EDP is requested.

This parameter is controlled by SOC option AIN00220.

## 10.6 TriggerCriteriaFlag parameter

The TriggerCriteriaFlag parameter is treated as a mandatory parameter. When it is missing, a fatal application error of “Missing Mandatory Parameter” is raised. The TriggerCriteriaFlag parameter is checked to ensure that it does not exceed the maximum allowable length.

The Trigger Criteria Type field is checked to ensure that it contains one of the following values:

- 00000001 vertical service code
- 00000000 feature activator
- 00000010 customized access
- 00000011 customized intercom
- 00000100 NPA
- 00000101 NPA NXX
- 00001000 NPA NXX XXXX
- 00001100 N11
- 00001101 AFR
- 00001110 shared interoffice trunk
- 00001111 termination attempt
- 00010000 off hook immediate
- 00010001 off hook delayed
- 00010010 channel setup PRI

The Flag field is checked to ensure that it contains one of the following values:

- 00000000 do not activate trigger
- 00000001 activate trigger.

Any error is reported as an erroneous data value fatal application error.

## 10.7 UserID parameter

Parameter UserID is checked to ensure that it does not exceed the maximum allowable length and that it has one of the following values:

- [1] IMPLICIT DN (The DN is checked to ensure that the maximum number of digits is not exceeded (5 octets or 10 BCD digits))
- [5] IMPLICIT TrunkGroupID (TrunkGroupID is [27] IMPLICIT INTEGER (0.9999); it is checked to ensure that it is within the valid range)
- [6] IMPLICIT PrivateFacilityGID (PrivateFacilityGID is [28] IMPLICIT INTEGER (0.9999); it is checked to ensure that it is within the valid range)

Any error is reported as an Erroneous Data Value fatal application error.

## **10.8 Agent support**

See Section 4.13 “Agent support for Update message waiting indicator” on page 161 for agent support details.

## **10.9 limitations and restrictions**

See Section 20.3.3 “Update message” on page 672 for limitations and restrictions associated with this functionality.



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# 11 Operational measurements for AIN

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AIN operational measurements (OMs) perform traffic measurements and maintenance measurements on AIN SSP calls. The following OM groups apply to the AIN SSP:

- AIN
- AINACG
- AINICOFF
- AINICSUB
- AINNCR
- AINOGOFF
- AINOGSB2
- AINOGSUB
- FTROM

OM group AIN is the platform for traffic and maintenance measurements. OM group AINACG provides measurements for automatic code gapping (ACG). OM group FTROM is the platform to capture feature data block high-water marks and seizures. The other OM groups listed above act as AIN message counters.

## 11.1 AIN OM group

OM group AIN is used for traffic and maintenance measurements for various AIN SSP applications. This group contains a key field, AIN\_MSGSET, where the name of the AIN application must be specified. For AIN Essentials OMs, the key value “R01” must be applied to this field and for AIN Service Enablers OMs, the key value “R02”. AIN Essentials OMs belong to OM group AIN, under key R01 and AIN Service Enablers OMs are under key R02. The OM registers for AIN Service Enablers are identical to those for AIN Essentials.

The AIN Service Enablers SSP OM registers contained in OM group AIN under key R02, are summarized in Table 89.

**Table 89 Operational measurements**

OM name	Register name
<b>Traffic measurements</b>	
AIN Service Enablers Triggers	TRIG, TRIG2 (Note)
AIN Shared Interoffice Calls	INTROFF, INTROFF2 (Note)
AIN calls	AINCALL, AINCALL2 (Note)
Create_Call Time-out	CCTMOUT
<b>Maintenance measurements</b>	
AIN Call Processing Failure Before Initial Query	CPFLBFQ
AIN Call Processing Failure After Initial Query	CPFLAFQ
Resource Failure Before Initial Query caused by Transaction ID	TIOVFBFQ
Resource Failure Before Initial Query, Caused by Component ID	CIOVFBFQ
Resource Failure After Query, Caused by Transaction ID	TIOVFAFQ
Resource Failure After Query, Caused by Component ID	CIOVFAFQ
SSP Time-out Awaiting Off-board Processor	RSPTMOUT
Invalid Command Message	INVCMDMG
Invalid Command Sequence	INVCMDSE
Maximum Queries Exceeded	MAXQEXCD
Maximum Parameter Count Exceeded per AMA Record	AMAMAX
AMA Parameters Received Prior to AMASlpID	AMASLPID
AMA Parameters Received in Conversation Package	AMACONV
<b>Note:</b> These are overflow registers.	

### **11.1.1 Traffic measurements**

In addition to non AIN SSP related traffic measurements, the AIN SSP keeps track of the AIN SSP specific traffic measurements that are detailed in the sections that follow.

#### **11.1.1.1 AIN Service Enablers triggers**

This measurement counts the number of times an AIN Service Enablers trigger occurs; that is, the number of times an AIN Service Enablers trigger is encountered and all its criteria are met.

#### **11.1.1.2 AIN shared interoffice calls**

This measurement counts the number of times the Shared\_Interoffice\_Trunk trigger occurs and all its criteria are met.

#### **11.1.1.3 AIN calls**

This measurement counts the number of AIN calls that occur on an SSP during the OM transfer period. An AIN call is as any call which triggers at least once.

Calls which fail after triggering are still AIN calls. Calls which escape from a trigger are not AIN calls. A trigger which occurs after the SCP forwards the call (that is, when the SSP receives a Forward\_Call response message) is considered a separate AIN call. A call that is forwarded by the SSP may be considered at most one AIN call.

AIN calls are separated by message set according to the message set of the first trigger encountered by the call. A message set of R01 indicates AIN Essentials. A message set of R02 indicates AIN Service Enablers.

### **11.1.2 Maintenance measurements**

Maintenance measurements keep count of the number of irregularity events detected by the SSP. It is possible that an irregularity event may fall under several categories. In this situation, the most specific measurement is used to count the event. The following subsections describe the various maintenance measurements that affect AIN SSP calls and AIN SSP TSTQuery.

#### **11.1.2.1 AIN call processing failure before initial query**

This measurement counts the number of AIN SSP calls that have failed due to an AIN SSP hardware or software initialization failure or AIN SSP call processing failure that occurred before the first AIN SSP query message was sent. Non AIN SSP-related call processing and initialization failures are measured by currently existing OMs.

#### **11.1.2.2 AIN call processing failure after initial query**

This measurement counts the number of AIN SSP calls that have failed due to an AIN SSP hardware or software initialization failure or AIN SSP call processing failure that occurred after a query was sent to an off-board

processor. Non-AIN SSP-related call processing and initialization failures are measured by currently existing OMs.

#### **11.1.2.3 Resource unavailable before initial query**

Currently, there are two OMs that keep track of this call irregularity. Each is based on a different cause of the irregularity.

**11.1.2.3.1 Transaction ID overflow or incorrect** This measurement counts the number of AIN SSP all failures that occur before the first AIN SSP query was sent and the failure was caused by an unavailable transaction identification resource or an incorrect transaction identification.

**11.1.2.3.2 Component ID overflow** This measurement counts the number of AIN SSP call failures that occur before the first AIN SSP query was sent. The failure occurred because the component identification resource was unavailable.

#### **11.1.2.4 Resource unavailable after initial query**

There are two OMs that keep track of this call irregularity. Similar to the previous OMs, each is based on a different cause of the failure.

**11.1.2.4.1 Transaction ID overflow or incorrect** This measurement counts the number of AIN SSP call failures that occur after the initial query was sent. In this case the failure occurred because the transaction identification resource was unavailable or the transaction identification provided was incorrect.

**11.1.2.4.2 Component ID overflow** This measurement counts the number of AIN SSP call failures that occur after the initial query was sent and the failure occurred because the component identification resource was unavailable.

#### **11.1.2.5 SSP time-out awaiting off-board processor**

This measurement counts the number of AIN SSP call failures and AIN SSP TSTQuery failures that occurred because the SSP has timed-out awaiting a response from an off-board processor.

#### **11.1.2.6 Invalid command message**

This measurement counts the number of times a message is received from an off-board processor that is not decipherable or has bad data.

#### **11.1.2.7 Invalid command sequence**

This measurement counts the number of times a message from an off-board processor is received incomplete or not in sequence.

**11.1.2.8 Maximum queries exceeded**

This measurement counts the number of AIN SSP call that failed because the limit on the number of AIN SSP queries per call was exceeded.

**11.1.2.9 Maximum AMA parameters exceeded**

This measurement counts the number of times an AMA parameter was received more times than allowed by the SSP for one AMA record.

**11.1.2.10 AMA parameters received prior to AMAsIpID parameter**

This measurement counts the number of times the SSP received AMA parameters before the AMAsIpID parameter was sent for the call.

**11.1.2.11 AMA parameters received in a Conversation package**

This measurement counts the number of times AMA parameters were received in a conversation package.

**11.2 AINACG OM group**

Group AINACG provides measurements for the automatic code gapping (ACG) feature in the SSP for AIN Service Essentials and Enablers. It is used to monitor blocking of AIN queries by ACG, ACG control list overflows, and count changes to ACG control lists. See Table 90.

**Table 90 AINACG OM group**

OM register	Description or item counted
BLKCASCP	blocked calls due to AIN SCP overload control
BLKCASMS	blocked calls due to AIN SMS overload control
SCPOVLDO	SCP overload, list overflowed
SMSOVLDO	SMS overload, list overflowed
CTRLCHA	control list changed

**11.3 FTROM OM group**

Group FTROM is the platform to capture feature data block (FDB) high-water marks and seizures. See Table 91 for a list of the registers.

**Table 91 FTROM OM group**

OM register	Description or item counted
FTRHI	records the maximum number of FDBs of each type that are in simultaneous use during an OM transfer period
FTRSEIZ	monitors the number of FDBs of each type that are successfully allocated

**Table 91 FTROM OM group**

OM register	Description or item counted
FTRSEIZ2	extension register for FTRSEIZ

At the beginning of each transfer period, the FTRSEIZ and FTRSEIZ2 active registers are initialized to zero. The active register increments when a request for a particular type of FDB is successful.

At the beginning of each transfer period, the FTRHI active register is initialized to the number of FDB that are currently in use. The active register is updated continuously throughout the transfer period whenever the number of FDBs that are currently in use exceeds the previously recorded value.

At the end of the transfer period, the active registers are transferred to the holding register where it is retained without change until it is overwritten at the end of the next transfer period.

The FTROM OM group provides one tuple for each of the current FDB types. This provides a more granular breakdown of FDB usage than what is listed in the EXT OM group. The FTROM OM group contains a key field, FTR\_NAME, in which the type of FDB must be specified.

The “info field” for the FTROM OM group contains the size of the FDB. Possible sizes are SMALL, MEDIUM, LARGE, and X\_LARGE, and CRITICAL. The size information allows one to relate the FDB type to the FDB size as stored in the EXT OM group under the corresponding tuples, as listed in Table 92.

**Table 92 Feature data block types for the EXT OM group**

Index	EXT_FORMAT_CODE	Office parameter	Size
81	SMALL_FEATURE_DATA	NO_OF_SMALL_FTR_DATA_BLKs	Small
82	MEDIUM_FEATURE_DATA	NO_OF_MEDIUM_FTR_DATA_BLKs	Medium
83	LARGE_FEATURE_DATA	NO_OF_LARGE_FTR_DATA_BLKs	Large
180	EXTRA_LARGE_FEATURE_DATA	NO_OF_EXTRA_LARGE_FTR_DATA_BLKs	Xlarge
86	CRITICAL_FEATURE_DATA	NO_OF_CRITICAL_FTR_DATA_BLKs	Critical

## 11.4 OMs that count AIN messages

AIN Service Enablers provides a set of OM registers to count call-related and non-call-related messages that are passed between the SSP and the SCP. These OMs count messages which are part of a transaction initiated by a trigger

which was datafilled in the TRIGDIG or TRIGINFO table with the MSGSET equal to R02.

The purpose of these message counters is to provide traffic engineering, monitoring, and maintenance capabilities. They are only active when SOC order code, AIN00210, is turned on.

The OM registers are organized into the five OM groups as summarized in Table 93 on page 333.

**Table 93 Message counter OM groups**

OM group	Call relation	Direction	Subscription	Description
AINOGOFF	Call-related	Outgoing	Office	See Section 11.4.1 on page 334.
AINOGSUB	Call-related	Outgoing	Subscribed	See Section 11.4.2 on page 335.
AINOGSB2	Call-related	Outgoing	Subscribed	See Section 11.4.3 on page 337
AINICOFF	Call-related	Incoming	Office	See Section 11.4.4 on page 337.
AINICSUB	Call-related	Incoming	Subscribed	See Section 11.4.5 on page 338.
AINNCR	Non-call-related	Both	N/A	See Section 11.4.6 on page 339.

Separate OM registers are provided for each type of message being counted. When a message can be sent from the SSP as a result of more than one kind of trigger or event, a separate OM register is provided for each trigger and event type. An OM register increments each time its corresponding message is successfully sent or received. A message is considered successfully sent once it has been encoded into the TCAP protocol. A message is considered successfully received once it has been decoded from the TCAP protocol.

Decoding TCAP messages involves several stages of error checking. The message is counted once the message parameters are decoded even when there are errors in the message parameters. Messages are not counted when an error is detected in the TCAP package or component. These include: all fatal protocol errors; errors as a result of a bad combination of message, package or component type; invalid response message; bad correlation IDs; duplicated messages.

A message is classified as office or subscribed based on the classification of the trigger which initiates the TCAP transaction. Table 94 shows the trigger classifications used by AIN Service Enablers OMs:

**Table 94 Trigger type classification**

TDP	Trigger	Classification
Origination_Attempt	Off-Hook_Immediate	Subscribed
Info_Collected	Off-Hook_Delay	Subscribed
Info_Collected	Shared_Interoffice_Trunk	Subscribed
Info_Collected	Channel_Setup_PRI	Subscribed
Info_Analyzed	Specific_Digit_String	Office
Info_Analyzed	N11	Office
Info_Analyzed	Public_Feature_Code	Subscribed
Info_Analyzed	Specific_Feature_Code	Subscribed
Info_Analyzed	Customized_Dialing_Plan	Subscribed
Network_Busy	AFR	Subscribed
O_Called_Party_Busy	O_Called_Party_Busy	Subscribed
O_No_Answer	O_No_Answer	Subscribed
Termination_Attempt	Termination_Attempt	Subscribed
T_busy	Termination_Busy	Subscribed
Term_Resource_Available	Term_Resource_Available	Subscribed

Although the AFR trigger can be provisioned as either office or subscribed, all messages sent as a result of this trigger are counted as subscribed.

#### 11.4.1 AINOGOFF OM group

The AINOGOFF group contains registers which count call-related, outgoing, office based, Service Enablers messages. These registers, their corresponding

message types, and the trigger or event type are presented in Table 95 in order of detection points.

**Table 95 AINOGOFF OM group**

OM register	Message	Trigger or Event	TDP or EDP
TOIASDS	Info_Analyzed	Specific_Digit_String	TDP-R
TOIAN11		N11	
EONB	Network_Busy	Network_Busy	EDP-R
EOOCB	O_Called_Party_Busy	O_Called_Party_Busy	EDP-R
EOONA	O_No_Answer	O_No_Answer	EDP-R
EOOANS	O_Answer	O_Answer	EDP-N
EOODCING	O_Disconnect Calling	O_Disconnect Calling	EDP-R
EOODCLED	O_Disconnect_Called	O_Disconnect_Called	EDP-R
EOTOUT	Timeout	Timeout	EDP-R
IOTN	Termination_Notification		
IOCIFR	Call_Info_From_Resource		
IORCLR	Resource_Clear		
IOCLOSO	Close		

#### 11.4.2 AINOFSUB OM group

The AINOFSUB group contains registers that count call-related, outgoing, subscribed, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 96 in order of detection points.

**Table 96 AINOFSUB OM group**

OM register	Message	Trigger or Event	TDP or EDP
TSOAOHI	Origination_Attempt	Off-Hook_Immediate	TDP-R
TSICOHD	Info_Collected	Off-Hook_Delay	TDP-R
TSICSIT		Shared_Interoffice_Trunk	
TSICPRIB		Channel_Setup_PRI	

**Table 96 AINOGSUB OM group (Continued)**

OM register	Message	Trigger or Event	TDP or EDP
TSIAPFC	Info_Analyzed	Public_Feature_Code	TDP-R
TSIASFC		Specific_Feature_Code	
TSIACDP		Customized_Dialing_Plan	
TSIA1PLS		One_Plus_Prefix	
TSIASPCR		Specified_Carrier	
TSIAOPSV		Operator_Services	
TSIAINT		International	
TSNBAFR	Network_Busy	AFR	TDP-R
ESNB		Network_Busy	EDP-R
TSOCBCB	O_Called_Party_Busy	O_Called_Party_Busy	TDP-R
ESOCB			EDP-R
TSONANA	O_No_Answer	O_No_Answer	TDP-R
ESONA			EDP-R
ESOANS	O_Answer	O_Answer	EDP-N
ESODCING	O_Disconnect Calling	O_Disconnect Calling	EDP-R
ESODCLED	O_Disconnect_Called	O_Disconnect_Called	EDP-R
ESOMTOUT	Timeout (O_Mid_Call)	Timeout	EDP-R
TSTATTA	Termination_Attempt	Termination_Attempt	TDP-R
ESTBSY	T_Busy	T_Busy	EDP-R
TSTBSY			TDP-R
ESTNA	T_No_Answer	T_No_Answer	EDP-R
TSTNA			TDP-R
ESTANS	T_Answer	T_Answer	EDP
TSTRSA	Term_Resource_Available	TRA	TDP-R
ISCIFR	Call_Info_From_Resource		

**Table 96 AINOGSUB OM group (Continued)**

OM register	Message	Trigger or Event	TDP or EDP
ISRCLR	Resource_Clear		
ISCLOSO	Close		
ISTN	Termination_Notification		

### 11.4.3 AINOGSB2 OM group

The AINOGSB2 group contains registers that count call-related, outgoing, subscribed, Service Enablers messages. These registers, their corresponding message types, and the trigger or event type are presented in Table 97 in order of detection points.

This group is similar to AINOGSUB and was introduced because AINOGSUB was full.

**Table 97 AINOGSB2 OM group**

OM register	Message	Trigger or Event	TDP or EDP
ESTMTOUT	Timeout (T_Mid_Call)	Timeout	EDP-R

### 11.4.4 AINICOFF OM group

The AINICOFF group contains registers which count call-related, incoming, office-based, Service Enablers messages. These registers and their corresponding message types are presented in Table 98.

**Table 98 AINICOFF OM group**

OM register	Message
IOCON	Continue
IOAR	Analyze_Route
IODISC	Disconnect
IOSTR	Send_To_Resource
IOCRE	Cancel_Resource_Event
IOCITR	Call_Info_To_Resource
IOSN	Send_Notification
IORRBE	Request_Report_BCM_Event

**Table 98 AINICOFF OM group**

OM register	Message
IOCLOSI	Close
IOCINFO	Collect_Information
IOCCALL	IO Create_Call

**11.4.5 AINICSUB OM group**

The AINICSUB group contains registers which count call-related, incoming, subscribed, Service Enablers messages. These registers and their corresponding message types are presented in Table 99.

**Table 99 AINICSUB OM group**

OM register	Message
ISAR	Analyze_Route
ISCON	Continue
ISAUTHT	Authorize_Termination
ISFC	Forward_Call
ISDISC	Disconnect
ISSTR	Send_To_Resource
ISCRE	Cancel_Resource_Event
ISCITR	Call_Info_To_Resource
ISSN	Send_Notification
ISRRBE	Request_Report_BCM_Event
ISCLOSI	Close
ISCINFO	Collect_Information
ISOFRCL	Offer_Call

### 11.4.6 AINNCR OM group

The AINNCR group contains registers that count non-call-related messages. These registers and their corresponding message types are presented in Table 100.

**Table 100 AINNCR OM group**

OM register	Message
NACG	ACG
NAOVFW	ACG_Overflow
NAGCR	ACG_Global_Ctrl_Restore
NAGCRS	ACG_Global_Ctrl_Restore_Success
NUPREQ	Update_Request
NUPDAT	Update_Data
NMFC	Monitor_For_Change
NMSUCC	Monitor_Success
NSREP	Status_Reported
NUPD	Update
NUSUCC	Update_Success

*Note:* OM groups AINICOFF and AINICSUB count non-call-related Send\_Notification messages. OM groups AINOGOFF and AINOGSUB count non-call-related Termination\_Notification messages.

The NAGCR, NAGCRS and the NAOVFW OM registers are only active when SOC order code AIN00210 is turned on.

## 11.5 AIN SSP feature operational measurements

AIN SSP is activated in the same manner as any call processing feature through the Feature Processing Environment (FPE). Several OMs measure AIN SSP feature activities which are listed in Table 101.

**Table 101 AIN Essentials feature operational measurements**

OM name	Register	Group
AIN Call Disconnected by Response Message	TFRAIND	TRMTFR2
AIN Call Routed to Final Treatment	TFRAINP	TRMTFR2

**Table 101 AIN Essentials feature operational measurements (Continued)**

OM name	Register	Group
Usage of AIN Feature Blocks	118 AIN_FTR_BLK	EXT
Usage of AIN Processing Blocks	122 AIN_PROCESSING__BLK	EXT
ACG gapped call due to SCP overload control	BLKCASCP	AINACG
ACG gapped call due to AIN SMS overload control	BLKASMS	AINACG
ACG SCP control list overflowed	SCPOVLDO	AINACG
ACG SMS control list overflowed	SMSOVLDO	AINACG
ACG control list changed	CTRLCHA	AINACG

## 11.6 Non-AIN SSP-specific maintenance measurements

TR-NWT-001284 specifies requirements for several maintenance measurements in addition to those discussed above. These OMs are currently provided on an office-wide basis by the SSP and do not necessarily provide measurements that are specific to AIN SSP. These office-wide OMs are

- Network Management Control Blocks Call (except for ACG, see Table 89 on page 328)
- Incoming Calls Abandoned
- All IEC Trunks Busy
- All Telco Trunks Busy

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## 12 OM group EXT

---

### 12.1 OM description

OM group extension block (EXT)

OM group EXT monitors the use of extension blocks. Extension blocks are auxiliary software resources allocated to calls for the following purposes:

- special billing records,
- data extensions for operator services
- custom calling features.

The primary purpose of an extension block is to provide additional storage for data associated with a call.

OM group EXT contains five registers: EXTHI, EXTHI2, EXTOVFL, EXTSEIZ, and EXTSEIZ2.

Register EXTHI records the maximum number of extension blocks in use at the same time during an OM transfer period. Register EXTHI2 is an extension register.

Register EXTOVFL increments when an extension block is not available. When the count is not zero, you must review the supply of extension blocks. You can increase the number of extension blocks in table OFCENG.

Register EXTSEIZ monitors the number of requests for a given type of extension block. Register EXTSEIZ2 is an extension register.

Data from OM group EXT indicates the most used extension blocks and the availability of a given type of extension block.

### 12.2 Registers

The following diagram illustrates OM group EXT registers as they appear on the MAP terminal display.

**Figure 108 MAP terminal display for OM group EXT registers**

```

OMSHOW EXT ACTIVE
EXT
CLASS:    ACTIVE
START:1996/11/16 14:30:00 WED; STOP: 1996/11/16 14:53:13 WED;
SLOWSAMPLES:    14 ; FASTSAMPLES:    143 ;
      KEY (EXT_FORMAT_CODE)
      INFO (EXTINFO)
      EXTSEIZ  EXTTOVFL      EXTHI  EXTSEIZ2
      EXTHI2
139 OSSAINRU
      0
      0      0      0      0
      0
143 OLNS_TCAP_EXT_BLK
      0
      0      0      0      0
      0
182 HUGE_HIS_DATA_BLOCK
      50
      0      0      0      0
      0
...## BASCPS_HUGE_EXT_BLK
      16
      0      0      0      0
      0

```

## 12.3 Release history

The OM group EXT was introduced before BCS20.

### 12.3.1 EUR009

Two key fields added: 512 DMS250\_FEATURE\_EXT\_FMT\_CD and 560 OVERFLOW\_CCB\_EXT\_FC.

### 12.3.2 TL010

Key field 198 DITM\_AGENT\_EXT\_BLOCKS added, indicating the number of data interface and topology mapping agent extension blocks provisioned (AF7401).

### 12.3.3 EUR008

Key field 180 X\_LARGE\_FEATURE\_DATA added, indicating the number of X\_LARGE\_FEATURE\_DATA blocks provisioned.

### 12.3.4 NA009

Key field BASCPS\_HUGE\_EXT\_BLK is introduced (AU2648).

Tuple HUGE\_HIS\_DATA\_BLK\_EXT\_FCEXT\_FORMAT\_CODE IS 182, is added to the EXTINFO information field (AU2626).

Added key field entry NS\_EXT\_FC.

#### **12.3.5 MSL07**

Removed index value 102 VCDR\_RECORDING\_UNIT for key field EXT\_FORMAT\_CODE

#### **12.3.6 EUR006**

Index value 148 EMERG\_EXT for key field EXT\_FORMAT\_CODE was introduced in EUR006.

#### **12.3.7 TOPS07**

Key field entries OSACRU and TOPS\_GEN\_TCAP\_EXT\_BLK were introduced in TOPS07.

#### **12.3.8 NA007**

Key field entry 172 AIN\_ORIG\_INFO was introduced in NA007.

#### **12.3.9 NA006**

Key field entry 135 MSGING\_EXT\_BLK replaced key field entry 135 SDS\_EXT\_BLK in NA006.

Functional group alternate billing services (ABS00001) introduced 143 originating line number screening (OLNS) transaction capabilities application part (TCAP) extension (EXT) block (BLK) (OLNS\_TCAP\_EXT\_BLK). Functional group OLNS\_TCAP\_EXT\_BLK was introduced as an entry of the key field EXT\_FORMAT\_CODE, through the TOPS OLNS Interface (ABS00012) functionality. Functional group 143 OLNS\_TCAP\_EXT\_BLK provides blocks of storage for OLNS information.

Functional group enhanced services (ENSV0001) introduced 139 operator services system advanced intelligent network (OSSAIN) recording units (RU) (OSSAINRU). Functional group OSSAINRU was introduced as an entry of the key field EXT\_FORMAT\_CODE, through operator services advanced intelligent network (AIN) (ENSV0014) functionality.

#### **12.3.10 TOPS05**

Key field entry 147 CRS\_SUBRU\_POOL5 was introduced in TOPS05.

#### **12.3.11 NA005Aa**

OM group EXT changed for GSF software release in NA005Aa.

#### **12.3.12 NA005**

Key field entry AIN\_TN\_EXT\_FMT\_CODE was introduced in NA005.

**12.3.13 NA004**

Key field entries EA\_MF\_SS7\_EXT\_BLOCK, 135 SDS\_EXT\_BLK, and RTRS\_TCAP\_EXT\_BLK were introduced in NA004.

**12.3.14 BCS36**

Key field entries CNAMD\_TCAP\_EXT\_BLK, FBS\_EXT\_FMT\_CODE, REDIR\_EXT\_BLK, and DATA\_CALL\_TESTER\_EXT were introduced in BCS36.

**12.3.15 BCS35**

Key field entries DSD\_EXT\_BLK, TC\_AP\_COMPONENT\_EXT\_BLK, GSM\_MESSAGE\_BLOCKS, and CRS\_PRU\_POOL3 were introduced in BCS35. These Key fields replaced SMDR\_RECORDING\_UNIT, which did not appear in BCS36.

**12.3.16 BCS34**

Key field entries DINA\_EXT\_BLOCK, WIDEBAND\_EXT\_BLOCK, SBS\_EXT\_BLOCK, and CAMA\_CALLED\_EXT\_BLK\_ST were introduced in BCS34.

The E911 feature data blocks (FDB) replaced E911 extension blocks. Office parameter E911\_NUMBER\_OF\_EXT\_BLOCK Kobe was replaced by two office parameters: NO\_OF\_CRITICAL\_FTR\_DATA\_BLOCKS and E911\_NUMBER\_OF\_FDBS.

**12.3.17 BCS33**

Key field entries REGULAR\_HISTORY\_DATA, LARGE\_HISTORY\_DATA, EXTRA\_LARGE\_HISTORY\_DATA, CRS\_SUBRU\_POOL2, CRS\_PRU\_POOL1, CDR300\_EXTND\_EXT\_FC, and NSS\_RDD\_TCAP\_EXT\_BLK were introduced in BCS33.

A Key field entry HIS\_DATA\_BLOCK\_EXT\_FC was removed in BCS33.

**12.3.18 BCS32**

Key field entries CRS\_SUBRU\_POOL1, CRS\_SUBRU\_POOL2, CRS\_SUBRU\_POOL3, CRS\_SUBRU\_POOL4, CRS\_PRU\_POOL1, CRS\_PRU\_POOL2, MCI\_POPS\_REC\_UNIT, SMALL\_EE\_EXT\_BLK, MEDIUM\_EE\_EXT\_BLK, LARGE\_EE\_EXT\_BLK, and VCDR\_RECORD\_UNIT were introduced in BCS32.

Key field entries BC\_RECORDING\_UNIT, BC\_LAMA\_REC\_UNIT, MDR\_EXT\_BLOCK, and REAL\_EXTENSION\_BLOCK were removed in BCS32.

**12.3.19 BCS31**

Key field entries OVERFLOW\_CCB\_EXT\_FC, MTX\_EXT\_BLOCK, and RC\_EXT\_FMT\_CODE DMS250\_EOPS\_EXT\_FC were introduced in BCS31.

Key field entry DMS250\_EOPS\_VAL\_EXT\_FMT\_CD was renamed in BCS31.

Registers EXTSEIZ2 and EXTHI2 were introduced in BCS31.

**12.3.20 BCS30**

Key field TC\_AP\_MEDIUM\_EXT\_BLK was introduced in BCS30.

**12.3.21 BCS29**

Key field entries REAL\_EXTENSION\_BLOCK, MDR\_EXT\_BLOCK, SMPDB\_FC, and INTL\_CCMTR\_EXT\_BLOCK were introduced in BCS29.

**12.3.22 BCS28**

Key field entries E911\_FMT\_CODE, ACD\_OVFLINQ\_EXTENSION, INTL250\_RECORDING\_UNIT, and ZERO\_PLUS\_EXT\_FC were introduced in BCS28.

**12.3.23 BCS27**

Key field entries EOPS\_RECORDING\_UNIT, ECCBX\_EXT\_FC, TPBX\_CCB\_EXTENSION, and MTX\_EXTENSION\_BLOCKS were introduced in BCS27.

**12.3.24 BCS26**

Key field entries DMS250\_MCI\_EOPS\_EXT\_FC, PVN\_TERM\_EXT\_BLK, DMS250\_BBF\_EXT\_BLK, FCSCS\_EXT\_BLK\_FC, ICT\_FORMAT\_CODE, and SCRATCHPAD\_250\_EXT\_FMT\_CD were introduced in BCS26.

**12.3.25 BCS25**

Register EXTUSAGE was not included in BCS25.

Key field entries CDRMTX\_EXT\_FMT\_CD and AUX\_EXTENSION\_BLOCK were introduced in BCS25.

**12.3.26 BCS24**

Register EXTUSAGE was set to zero in BCS24.

Key field entries ITOPSRU and DMS-250\_FEATURE\_EXT\_FMT\_CD were introduced in BCS24.

**12.3.27 BCS23**

Register EXTHI was introduced in BCS23.

Key field entries ICAMA\_RECORDING\_UNIT, POTS\_CFZ\_EXTENSION, and RTEB\_EXTENSION were introduced in BCS23.

**12.3.28 BCS22**

Key field entry FTR\_XLA\_BLOCK\_EXT\_FC was introduced in BCS22.

**12.3.29 BCS21**

Key field entry ISUP\_MSG\_EXT\_FC was introduced in BCS21.

**12.3.30 BCS20**

Key field entries CFD\_EXTENSION, CDIV\_EXTENSION, NTL\_RECORDING\_UNIT, and DCR\_EXTENSION were introduced in BCS20.

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## 13 OM group AIN

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### 13.1 OM description

OM group advanced intelligent network (AIN)

OM group AIN is the platform for traffic and maintenance measurements that are specific to AIN.

### 13.2 Registers

The MAP terminal display that follows shows registers for OM group AIN.

**Figure 1 MAP terminal display for OM group AIN registers**

TRIG	TRIG2	INTROFF	INTROFF2
CPFLBFQ	CPFLAFQ	MAXQEXCD	TIOVFBFQ
CIOVFBFQ	TIOVFAFQ	CIOVFAFQ	RSPTMOUT
INVCMDMG	INVCMDSE	AMAMAX	AMASLPID
AMACONV	AINCALL	AINCALL2	AUGPEXH
CCTMOUT	DLFL		

The MAP terminal display that follows shows registers for OM group AIN.

Figure 2 OM group AIN registers

```

AIN

CLASS:  ACTIVE
START:1995/02/28 10:00:00 TUE; STOP: 1995/02/28
10:18:58 TUE
SLOWSAMPLES:      1 ;      FASTSAMPLES:      4 ;

KEY (AIN_MSGSET)
      TRIG      TRIG2      INTROFF      INTROFF2
      CPFLBFQ    CPFLAFQ    MAXQEXCD    TIOVFBFQ
      CIOVFBFQ    TIOVFAFQ    CIOVFAFQ    RSPTMOUT
      INVCMDMG    INVCMDSE      AMAMAX      AMASLPID
      AMACONV     AINCALL     AINCALL2     AUGPEXH
      CCTMOUT     DLFL

1 RO1
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0

7 RO2
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0

```

The MAP terminal display that follows shows registers for OM group AIN for the European DMS-100 (DMS-100EUR) switch.

**Figure 3 OM group AIN registers for the European DMS-100 (DMS-100EUR)**

```

AIN

CLASS:  ACTIVE
START:1995/02/28 10:00:00 TUE; STOP: 1995/02/28
10:18:58 TUE
SLOWSAMPLES:          12 ;    FASTSAMPLES:          114 ;

KEY (AIN_MSGSET)
      TRIG      TRIG2      INTROFF      INTROFF2
      CPFLBFQ   CPFLAFQ   MAXQEXCD   TIOVFBFQ
      CIOVFBFQ   TIOVFAFQ   CIOVFAFQ   RSPTMOUT
      INVCMDMG   INVCMDSE   AMAMAX     AMASLPID
      AMACONV

6 INAPV8
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0          0          0          0
      0

```

*Note:* The DMS-100EUR switch uses key field 6 INAPV8 only.

### 13.3 Group structure

OM group AIN provides one tuple for each key.

**Key field:**

AIN\_MSGSET is the AIN application identifier for a call.

This OM group enables increments for R01 and R02 messages.

INAPV8 is the key field for CS-1R on the DMS-SSP. This OM group allows increments for CSR calls.

**Info field:**

None

### 13.4 Related OM groups

There are no related OM groups.

### 13.5 Related functional groups

There are no related functional groups.

## 13.6 Related functionality codes

Related functionality codes for OM group AIN follow.

**Table 1 Related functionality codes for OM group AIN**

<b>Functionality</b>	<b>Code</b>
AIN Base	NTXQ42AA
DSSP OAM (DMS-100EUR)	does not apply
AUS A/I-ISUP INAP I/W	AUS00038
JPN SSP to TOPS Fallback	JPN00032

For CS-1R OM increments, refer to OM group AIN of this document.

The logical flow for OM group AIN registers follows.

Figure 4 Logic flow for OM group AIN registers

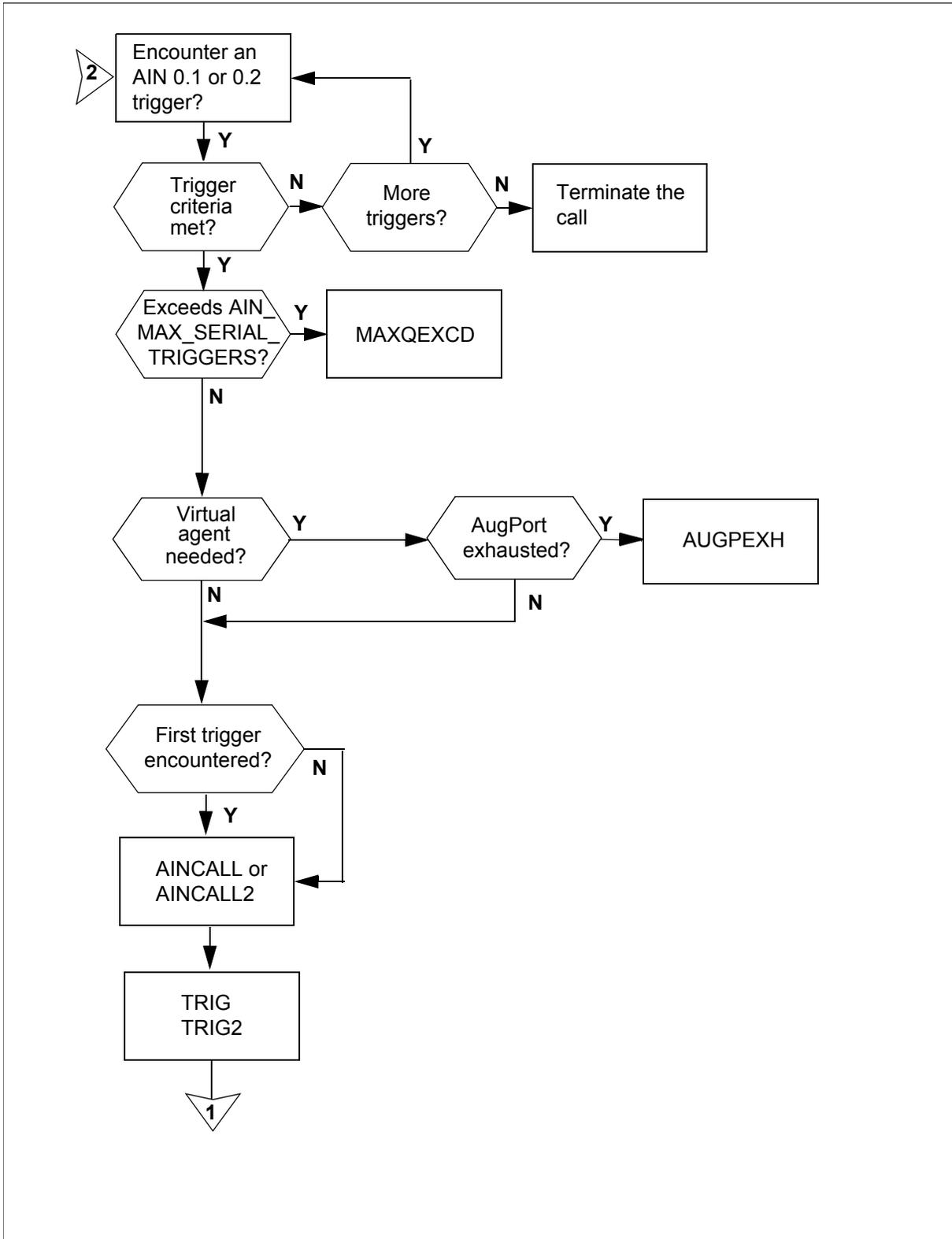


Figure 4 Logic flow for OM group AIN registers (continued)

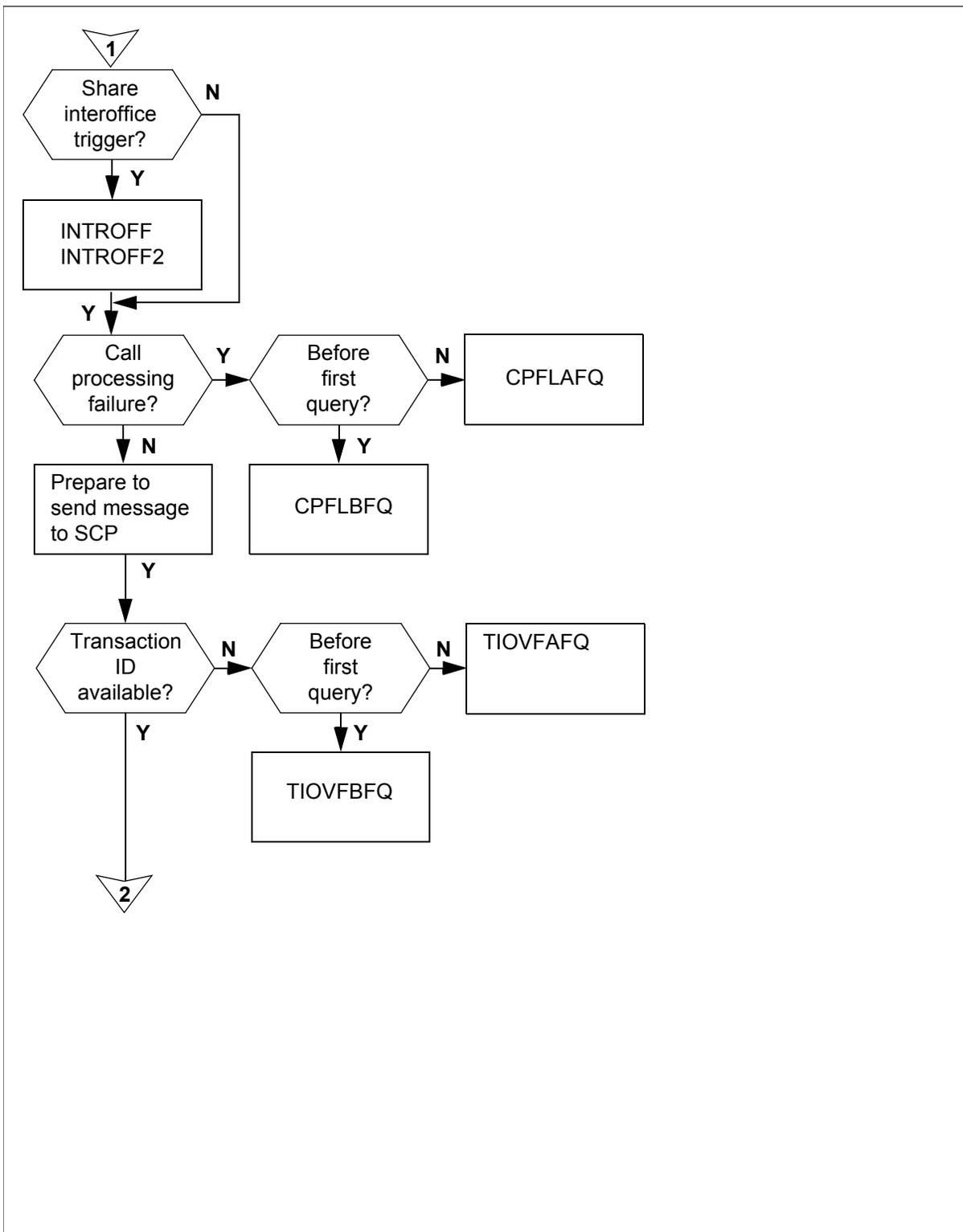


Figure 4 Logic flow for OM group AIN registers (continued)

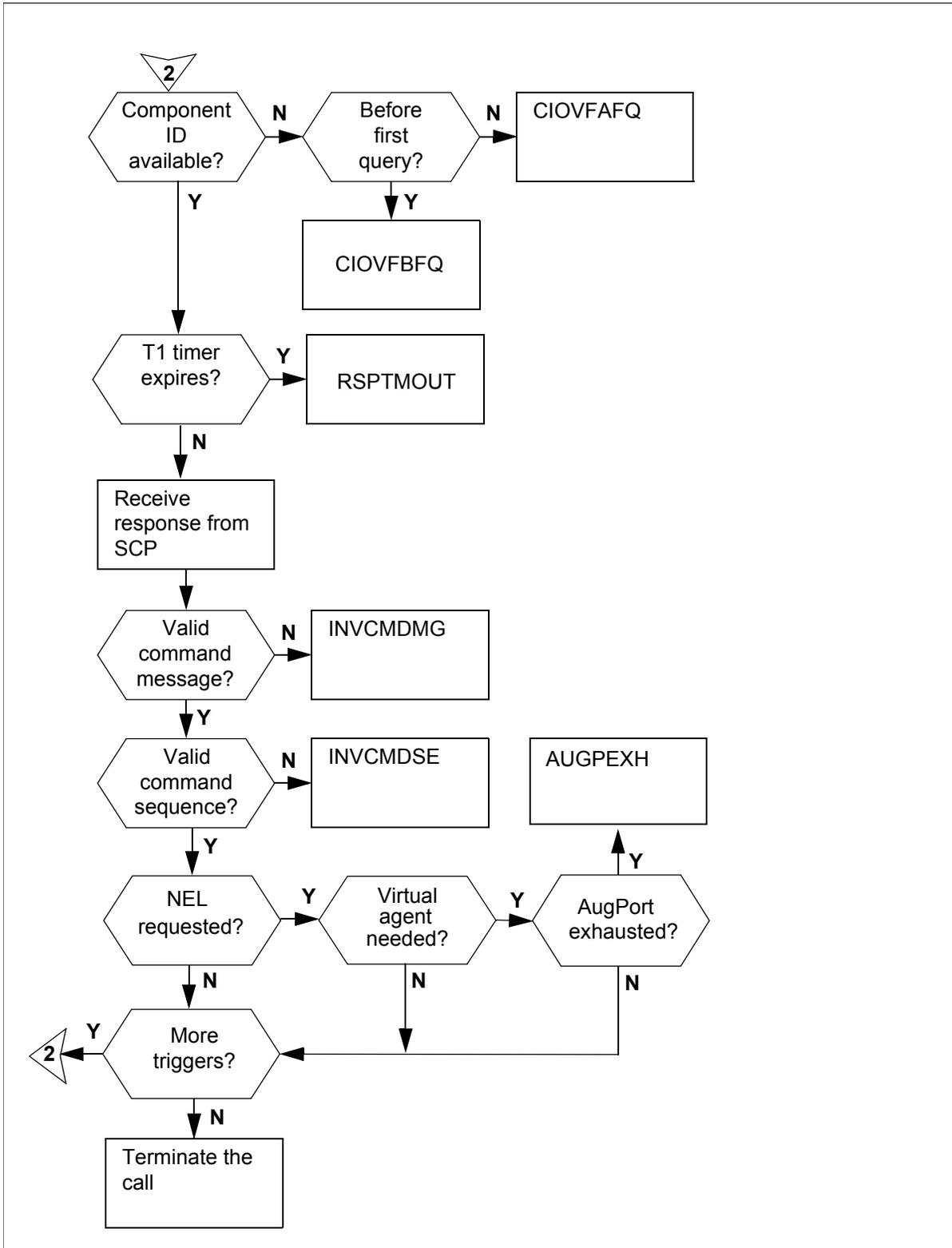
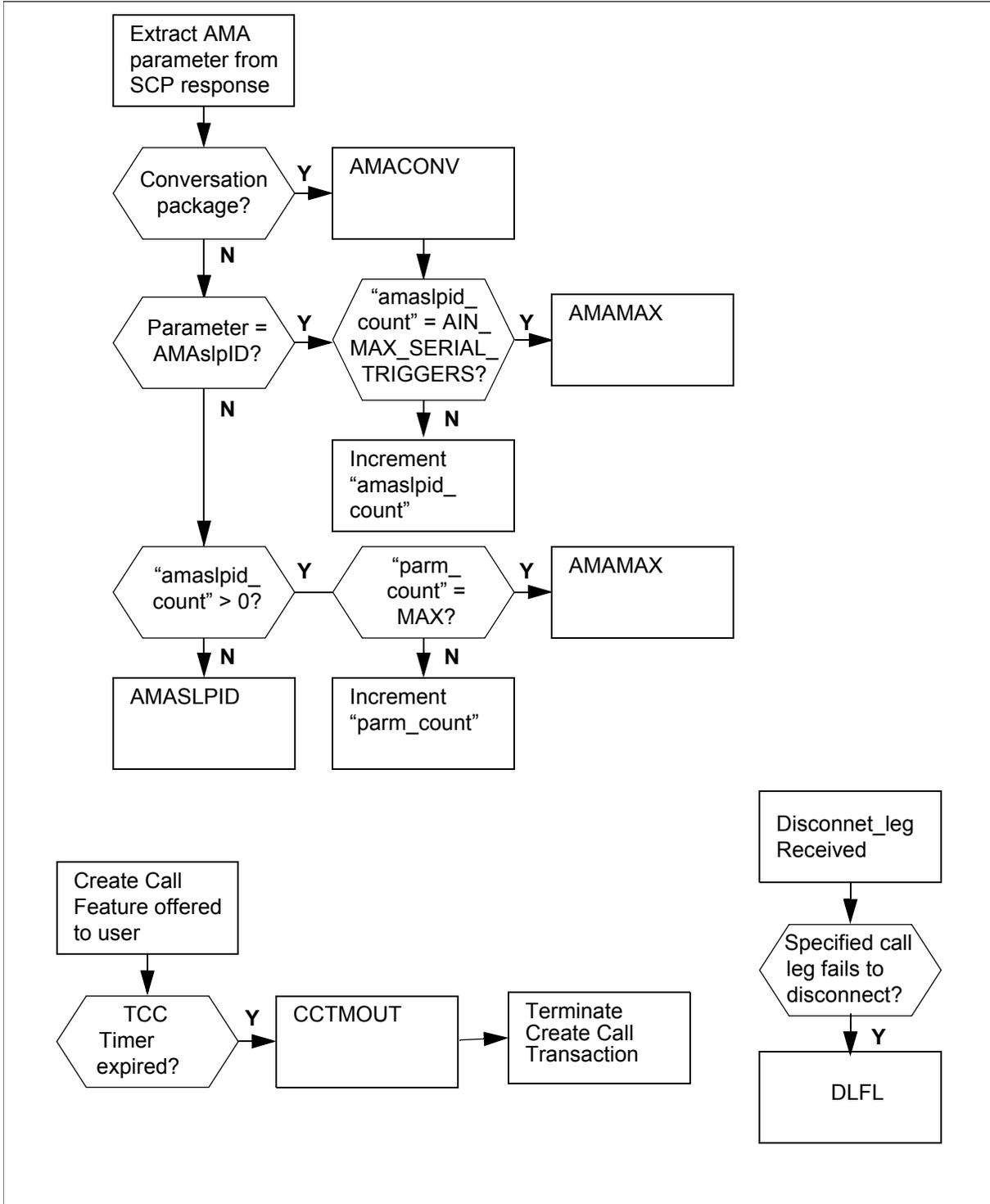


Figure 4 Logic flow for OM group AIN registers (continued)



## 13.7 Register AINCALL

AIN calls

Register AINCALL counts the number of AIN calls. A call that triggers is an AIN call.

For AIN, register AINCALL increments when the first AIN trigger for a call is encountered and the call meets the trigger criteria. When the call meets the trigger criteria for more than one trigger, the triggers that follow the first AIN trigger do not count as new calls. A call that fails after the call meets the trigger criteria counts as an AIN call. A call that meets switch-based call forwarding or AIN call forwarding counts as one call. A call that escapes from an AIN trigger counts as an AIN call.

*Note:* The occurrence of a Termination\_Attempt trigger (TAT) followed by a Forward\_Call message is considered another call.

### 13.7.1 Register AINCALL release history

The NA009 product release introduced register AINCALL.

### 13.7.2 Related registers

TRIG, TRIG2

### 13.7.3 Related logs

None

### 13.7.4 Extension registers

AINCALL2

## 13.8 Register AMACONV

Automatic message accounting conversation (AMACONV)

Register AMACONV increments any time parameter automatic message accounting (AMA) arrives at the service switching point (SSP). For register AMACONV to increase, the AMA must arrive at the SSP in a conversation package from an off-board processor.

### 13.8.1 Register AMACONV release history

The BCS36 product release introduced register AMACONV.

### 13.8.2 Related registers

There are no related registers.

### 13.8.3 Related logs

There are no related logs.

### **13.8.4 Extension registers**

There are no extension registers.

## **13.9 Register AMAMAX**

Automatic message accounting maximum (AMAMAX)

Register AMAMAX increases when the maximum AMA parameters allowed for a single AMA record are exceeded. The system defines AIN AMA maximum as follows:

- the maximum number of AMAslpID parameters equals the setting of office parameter AIN\_MAX\_SERIAL\_TRIGGERS
- 6 AMADigitsDialedWC
- 2 AMALineNumber
- 1 AMABusinessCustomerID
- 1 AMAAlternateBillingNumber

### **13.9.1 Register AMAMAX release history**

The BCS36 product release introduced register AMAMAX.

### **13.9.2 Related registers**

There are no related registers.

### **13.9.3 Related logs**

There are no related logs.

### **13.9.4 Extension registers**

There are no extension registers.

## **13.10 Register AMASLPID**

Automatic message accounting slpID (AMASLPID)

Register AMASLPID increments when any AMA parameter arrives at the SSP. For register AMASLPID to increase, the AMA must arrive in an off-board processor response message before parameter AMAslpID is received.

### **13.10.1 Register AMASLPID release history**

The BCS36 product release introduced register AMASLPID.

### **13.10.2 Related registers**

There are no related registers.

### 13.10.3 Related logs

There are no related logs.

### 13.10.4 Extension registers

There are no extension registers.

## 13.11 Register AUGPEXH

AugPort resource exhausted (AUGPEXH)

Register AUGPEXH counts the number of AIN calls that fail because the system used all its AugPort resources. AugPort resources stores snapshots of call data. The system uses AugPort resources to create virtual agents.

*Note 1:* The system increments the counter for the R02 tuple of register AUGPEXH when the last virtual agent was created by one of the following:

- an R02 trigger
- a NEL
- a switch-based CFW
- DISA
- a VFG

*Note 2:* The system increments the counter for the R01 tuple of register AUGPEXH when an R01 trigger created the last virtual agent.

### 13.11.1 Register AUGPEXH release history

The NA012 product release introduced register AUGPEXH.

### 13.11.2 Related registers

There are no related registers.

### 13.11.3 Related logs

There are no related logs.

### 13.11.4 Extension registers

There are no extension registers.

## 13.12 Register CCTMOUT

Register Create\_Call Timeout (CCTMOUT) counts the number of times that the user rejects the Create\_Call service by allowing a timeout after Create\_Call gives notification to the user.

### 13.12.1 Register CCTMOUT release history

The NA013 product release introduces register CCTMOUT.

### **13.12.2 Related registers**

OM register IOCCALL in OM group AINICOFF counts the number of times that the SSP receives valid Create\_Call messages with the AIN00271 SOC option ON. Register IOCLOSO records the number of CLOSE messages sent by Create\_Call functionality in addition to CLOSE messages from other AIN applications in the SSP.

### **13.12.3 Related logs**

There are no related logs.

### **13.12.4 Extension registers**

There are no extension registers.

## **13.13 Register CIOVFAFQ**

Register component identification overflow after the first AIN query (CIOVFAFQ).

Register CIOVFAFQ counts the number of AIN calls that fail after the system sends the first AIN query. AIN calls fail because the invoke identification is not available for the invoke component. AIN calls can fail after the system sends the first AIN query.

### **13.13.1 Register CIOVFAFQ release history**

The BCS36 product release introduced register CIOVFAFQ.

### **13.13.2 Related registers**

There are no related registers.

### **13.13.3 Related logs**

There are no related logs.

### **13.13.4 Extension registers**

There are no extension registers.

## **13.14 Register CIOVFBFQ**

Component identification overflow before the first AIN query (CIOVFBFQ).

Register CIOVFBFQ counts the number of AIN calls that fail because an invoke identification for the invoke component was not available. Register CIOVFBFQ counts the calls that fail before the system sends the first AIN query.

### **13.14.1 Register CIOVFBFQ release history**

The BCS36 product release introduced register CIOVFBFQ.

**13.14.2 Related registers**

There are no related registers.

**13.14.3 Related logs**

There are no related logs.

**13.14.4 Extension registers**

There are no extension registers.

**13.15 Register CPFLAFQ**

Register AIN call processing failure after the first query for AIN calls (CPFLAFQ).

Register CPFLAFQ counts AIN calls that fail when an SSP is off-line because of a hardware or software initialization problem. Register CPFLAFQ counts calls that fail because of a failure in the AIN call processing routine. Register CPFLAFQ counts these failures after the system sends the first AIN query.

When registers INVCMDMG and INVCMDSE count call failures, register CPFLAFQ does not count these call failures.

Register CPFLAFQ counts failures that occur for either of the following reasons:

- An AIN sub-system is out of service.
- The system receives a CONTINUE message from the SCP (The message indicates that there are more triggers at the INFO\_ANALYZED TDP that are not present, and that sufficient information to continue normal routing is not available.).

**13.15.1 Register CPFLAFQ release history**

The BCS36 product release introduced register CPFLAFQ.

**13.15.2 Related registers**

There are no related registers.

**13.15.3 Related logs**

There are no related logs.

**13.15.4 Extension registers**

There are no extension registers.

**13.16 Register CPFLBFQ**

AIN call processing failure before the first query for AIN calls (CPFLBFQ)

Register CPFLBFQ counts AIN calls that fail. Failures occur:

- because of a failure in the AIN call processing routine
- when the system terminates an SSP because of a hardware or software initialization problem
- before the system sends the first AIN query message

The system sends an AIN query message to the SS7 transport link that goes to the SCP.

Register CPFLBFQ counts failures that occur before the first query goes to the SCP. Failures occur for one of the following reasons:

- the system detects an AIN sub-system that is experiencing an out-of-service failure before the system sends the query to the SS7 transport link
- the system can not build the AIN required parameter BEARER\_CAPABILITY. The system can not build BEARER\_CAPABILITY because the system cannot map the incoming BEARER\_CAPABILITY parameter to the correct AIN BEARER\_CAPABILITY parameter.
- the system has not fulfilled requirements related with the requested digit-collection format (This results in a call take-down during pre-query digit collection.)

#### **13.16.1 Register CPFLBFQ release history**

The BCS36 product release introduced register CPFLBFQ.

#### **13.16.2 Related registers**

There are no related registers.

#### **13.16.3 Related logs**

There are no related logs.

#### **13.16.4 Extension registers**

There are no extension registers.

### **13.17 Register INTROFF**

AIN share interoffice trunk triggers (INTROFF)

Register INTROFF counts the number of AIN shared interoffice trunk triggers to accumulate the number of shared interoffice trunk calls.

For AIN calls, only the R01 and R02 INTROFF registers increase. The registers increase when a call triggers the shared interoffice trunk trigger.

**13.17.1 Register INTROFF release history**

The BCS36 product release introduced register INTROFF.

**13.17.2 Related registers**

There are no related registers.

**13.17.3 Related logs**

There are no related logs.

**13.17.4 Extension registers**

INTROFF2

**13.18 Register INTROFF2**

AIN share interoffice trunk triggers 2 is an overflow register for register INTROFF.

**13.18.1 Register INTROFF2 release history**

The BCS36 product release introduced register INTROFF2.

**13.18.2 Related registers**

INTROFF

**13.18.3 Related logs**

There are no related logs.

**13.18.4 Extension registers**

There are no extension registers.

**13.19 Register INVCMDMG**

Invalid command message for AIN calls (INVCMDMG)

Register INVCMDMG counts calls that fail. Register INVCMDMG counts call failures that occur because the SSP receives a response from the SCP. The system cannot translate the response, or the response contains wrong data.

Register INVCMDMG increases when the SSP receives an AIN message from the SCP that contains one of the following errors:

- unrecognized correlation ID
- unrecognized operation code
- missing required parameters
- missing conditional parameters
- not planned parameter sequence

- not planned communication
- not planned message
- wrong data value
- wrong parameters

#### **13.19.1 Register INVCMDMG release history**

The BCS36 product release introduced register INVCMDMG.

#### **13.19.2 Related registers**

There are no related logs.

#### **13.19.3 Related logs**

There are no related logs.

#### **13.19.4 Extension registers**

There are no extension registers.

### **13.20 Register INVCMDSE**

Invalid command sequence for AIN calls (INVCMDSE)

Register INVCMDSE counts calls that fail. Call failures occur because the SSP receives a response from the SCP that contains not complete or out-of-sequence commands.

Register INVCMDSE increases when the SSP receives an unplanned AIN message sequence.

#### **13.20.1 Register INVCMDSE release history**

Register INVCMDSE was introduced in the BCS36 product release.

#### **13.20.2 Related registers**

There are no related registers.

#### **13.20.3 Related logs**

There are no related logs.

#### **13.20.4 Extension registers**

There are no extension registers.

### **13.21 Register MAXQEXCD**

Maximum number of AIN queries exceeded for an AIN call (MAXQEXCD)

Register MAXQEXCD counts the number of AIN calls that fail because the limit on the number of AIN queries is exceeded.

For AIN calls, register MAXQEXCD increments when an AIN call fails because the limit on the number of AIN queries is exceeded.

Office parameter AIN\_MAX\_SERIAL\_TRIGGERS in table OFCENG determines the number of times that an AIN call triggers without being routed out of the SSP. The default value for this parameter is 6.

CS-1R calls can trigger once.

#### **13.21.1 Register MAXQEXCD release history**

Register MAXQEXCD was introduced in the BCS36 product release.

#### **13.21.2 Related registers**

There are no related registers.

#### **13.21.3 Related logs**

There are no related logs.

#### **13.21.4 Extension registers**

There are no extension registers.

### **13.22 Register RSPTMOUT**

SSP time-out awaiting SCP response to an AIN or CS-1R query (RSPTMOUT)

Register RSPTMOUT counts the number of calls that fail because a reply is not sent to the SSP from the SCP, within the time interval specified by one of the following office parameters:

- AIN\_T1\_TIMER
- INAP\_TSSF\_WFI\_TIMER

Register RSPTMOUT increments when a reply, in response to an AIN query, is not sent to the SSP from the SCP within the interval defined by the AIN\_T1\_TIMER.

#### **13.22.1 Register RSPTMOUT release history**

The BCS36 product release introduced register RSPTMOUT.

#### **13.22.2 Related registers**

There are no related registers.

#### **13.22.3 Related logs**

There are no related logs.

#### **13.22.4 Extension registers**

There are no extension registers.

### **13.23 Register TIOVFAFQ**

Transaction identification overflow or wrong after the first AIN query (TIOVFAFQ).

Register TIOVFAFQ counts AIN calls that fail. The register counts the failures that occur because the transaction identification was not available in the SSP. For the register to increment, the transaction identification must be available after the system sends the first AIN or CS-IR query.

#### **13.23.1 Register TIOVFAFQ release history**

The BCS36 product release introduced register TIOVFAFQ.

#### **13.23.2 Related registers**

There are no related registers.

#### **13.23.3 Related logs**

There are no related logs.

#### **13.23.4 Extension registers**

There are no extension registers.

### **13.24 Register TIOVFBFQ**

Transaction identification overflow or wrong before the first AIN query (TIOVFBFQ).

Register TIOVFBFQ counts AIN calls that fail because the transaction identification is not available in the SSP. For the register to increase the failure must occur before the system sends the first AIN query.

#### **13.24.1 Register TIOVFBFQ release history**

The BCS36 product release introduced register TIOVFBFQ.

#### **13.24.2 Related registers**

There are no related registers.

#### **13.24.3 Related logs**

There are no related logs.

#### **13.24.4 Extension registers**

There are no extension registers.

## 13.25 Register TRIG

AIN triggers (TRIG)

Register TRIG counts the number of AIN or CS-IR triggers that occur.

Register TRIG increments when one of the following system activities occurs:

- The system encounters an AIN subscribed trigger (that includes trigger shared interoffice trunk).
- The system meets all the requirements of the subscribed trigger.
- The system correctly initiates the IN feature.

The system provides a second register (TRIG2) because of the potentially large number of increments to this register.

### 13.25.1 Register TRIG release history

The BCS36 product release introduced register TRIG.

### 13.25.2 Related registers

TRIG2

### 13.25.3 Related logs

There are no related logs.

### 13.25.4 Extension registers

There are no extension registers.

## 13.26 Register TRIG2

AIN triggers 2 (TRIG2) is an overflow register for register TRIG.

### 13.26.1 Register TRIG2 release history

The BCS36 product release introduced register TRIG2.

### 13.26.2 Related registers

TRIG

### 13.26.3 Related logs

There are no related logs.

### 13.26.4 Extension registers

There are no extension registers.

## **13.27 Register DLFL**

Register Disconnect Leg Failures counts the number of times that the Disconnect Leg response fails to complete its task.

### **13.27.1 Register DLFL release history**

The SN07 product release introduces register DLFL.

### **13.27.2 Related registers**

Register ISDL records the number of subscriber-based Disconnect Leg messages received by the DMS. Register IODL records the number of office-based Disconnect Leg messages received by the SSP.

### **13.27.3 Related logs**

There are no related logs.

### **13.27.4 Extension registers**

There are no extension registers.

## **13.28 Release history**

### **13.28.1 SN07 (DMS)**

The SN07 (DMS) product release introduces register DLFL for CR Q00765666.

### **13.28.2 BCS36**

The BCS36 product release introduced OM group AIN.

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## 14 OM group AINICOFF

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### 14.1 OM description

Advanced intelligent networks incoming office-based (AINICOFF)

OM group AINICOFF counts AIN Service Enablers office-based messages that the service control point (SCP) sends to the service switching point (SSP). OM group AINICOFF monitors the incoming traffic to the SSP.

When different triggers or events cause the SSP to send a message, a separate OM register provides a count for each trigger and event type. OM registers increment when the system correctly sends or receives the message that corresponds to that register. The system correctly sends a message when the message is encoded into the transaction capability application part (TCAP) protocol. The system correctly receives a message when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts messages after the decoding of message parameters or when errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or component.

Errors that can occur in the TCAP package or component follow.

- all fatal protocol errors
- errors as a result of a bad group of messages, packages, or component types
- an invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINICOFF contains registers that count call-related, incoming, office-based, Service Enablers messages. The system counts messages entered as R02 in tables TRIGDIG, TRIGITM, or TRIGINFO.

Operating company personnel can subscribe to the office-based triggers that follow:

- Specific\_Digit\_String
- N11

## 14.2 Registers

The following figure illustrates OM group AINICOFF registers as they appear on the MAP terminal display.

**Figure 1 MAP terminal display of OM group AINICOFF registers**

IOAR	IOCON	IODISC	IOSTR
IOCRE	IOCITR	IOSN	IORRBE
IOCLOSI	IOCINFO	IOCCALL	IOCTR
IODL			

## 14.3 Group structure

OM group AINICOFF provides one tuple per office.

**Key field:**

None

**Info field:**

None

## 14.4 Related OM groups

The following related OM groups provide AIN Service Enablers message counts:

- AIN outgoing office-based (AINOGOFF) counts the AIN Service Enablers office-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN outgoing subscription-based (AINOGSUB) counts the AIN Service Enablers subscription-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages sent from the SCP to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SCP on a non-call-related basis.

- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. OM group AIN counts messages entered as R01 in tables TRIGDIG, TRIGINFO, or TRIGITM.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors AIN R0.1 and R0.2 queries: ACG, ACG control list overflows, and changes made to the ACG control lists.

Related OM group validation formulas follow.

- total of AINICOFF group + total of AINOGOFF group + total of AINOFSUB group + total of AINICSUB group = total call-related messages
- total of AINICOFF group + total of AINICSUB group + AINNCR registers NACG + NAGCR + NUPREQ + NMFC = total incoming Service Enablers messages received from the SCP

## 14.5 Related functional groups

There are no related functional groups.

## 14.6 Related functionality codes

There are no related functionality codes.

The figure that follows illustrates the logical flow of OM group AINICOFF registers.

Figure 2 Logic flow for OM group AINICOFF registers

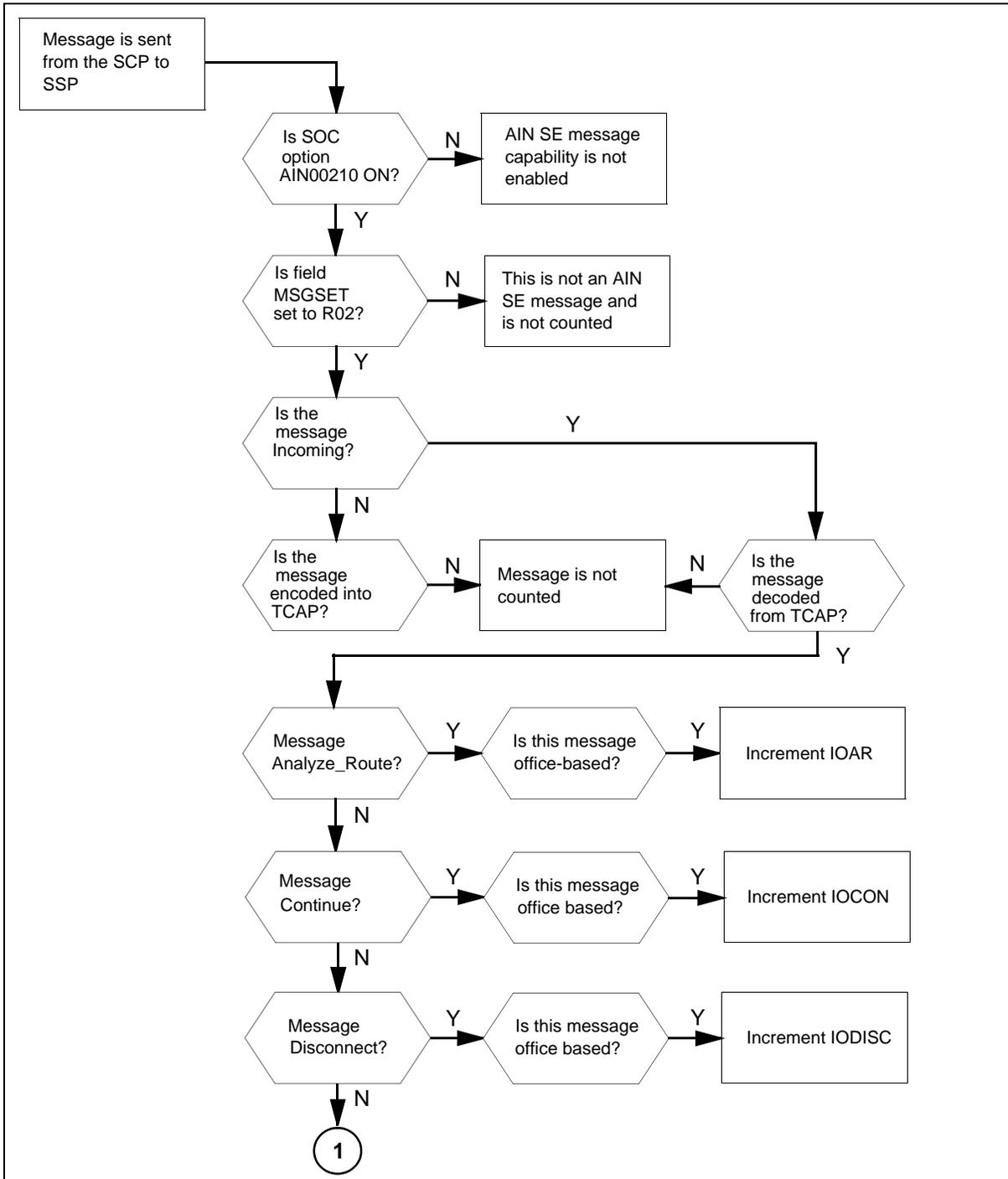


Figure 2 Logic flow for OM group AINICOFF registers (continued)

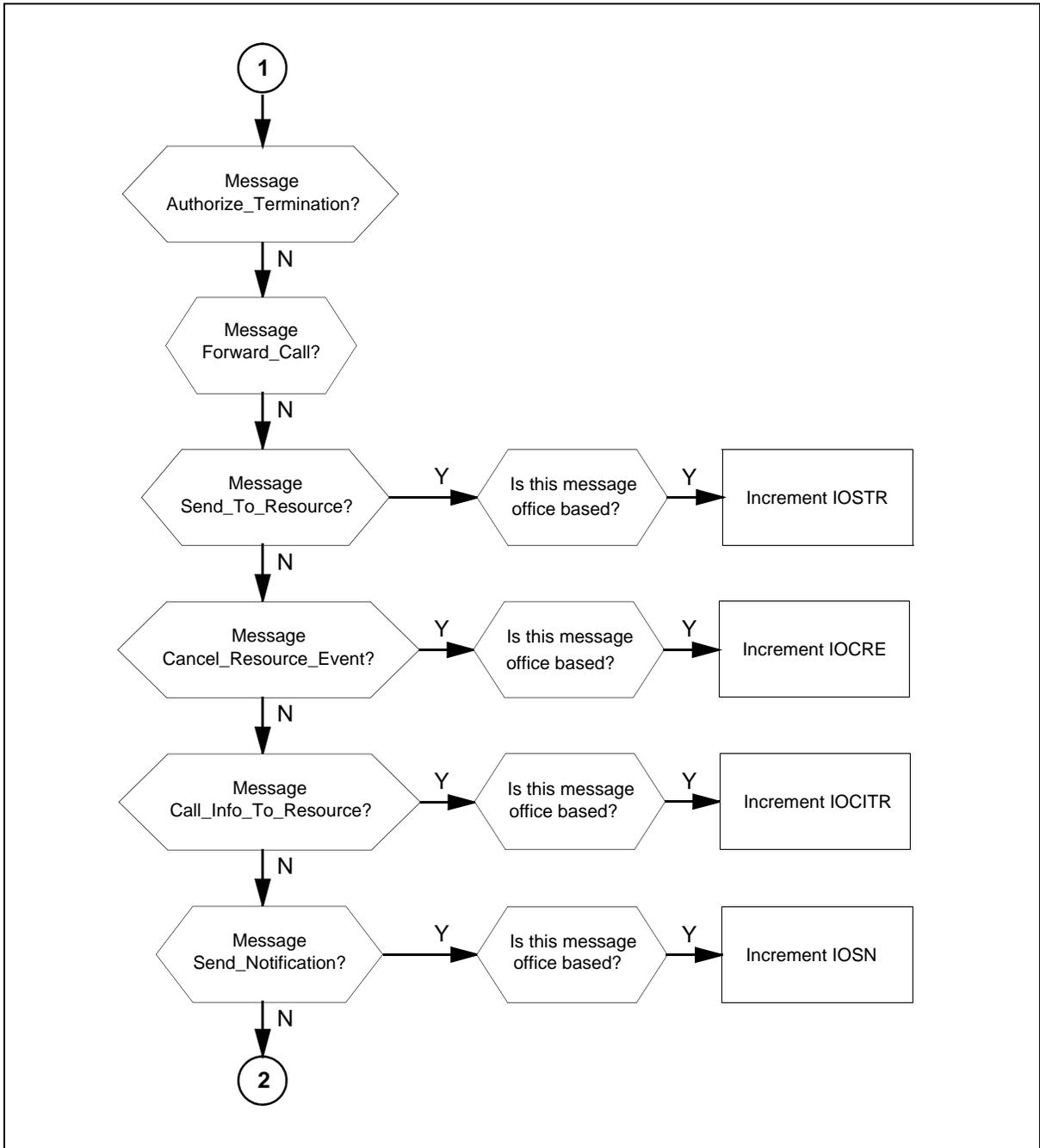
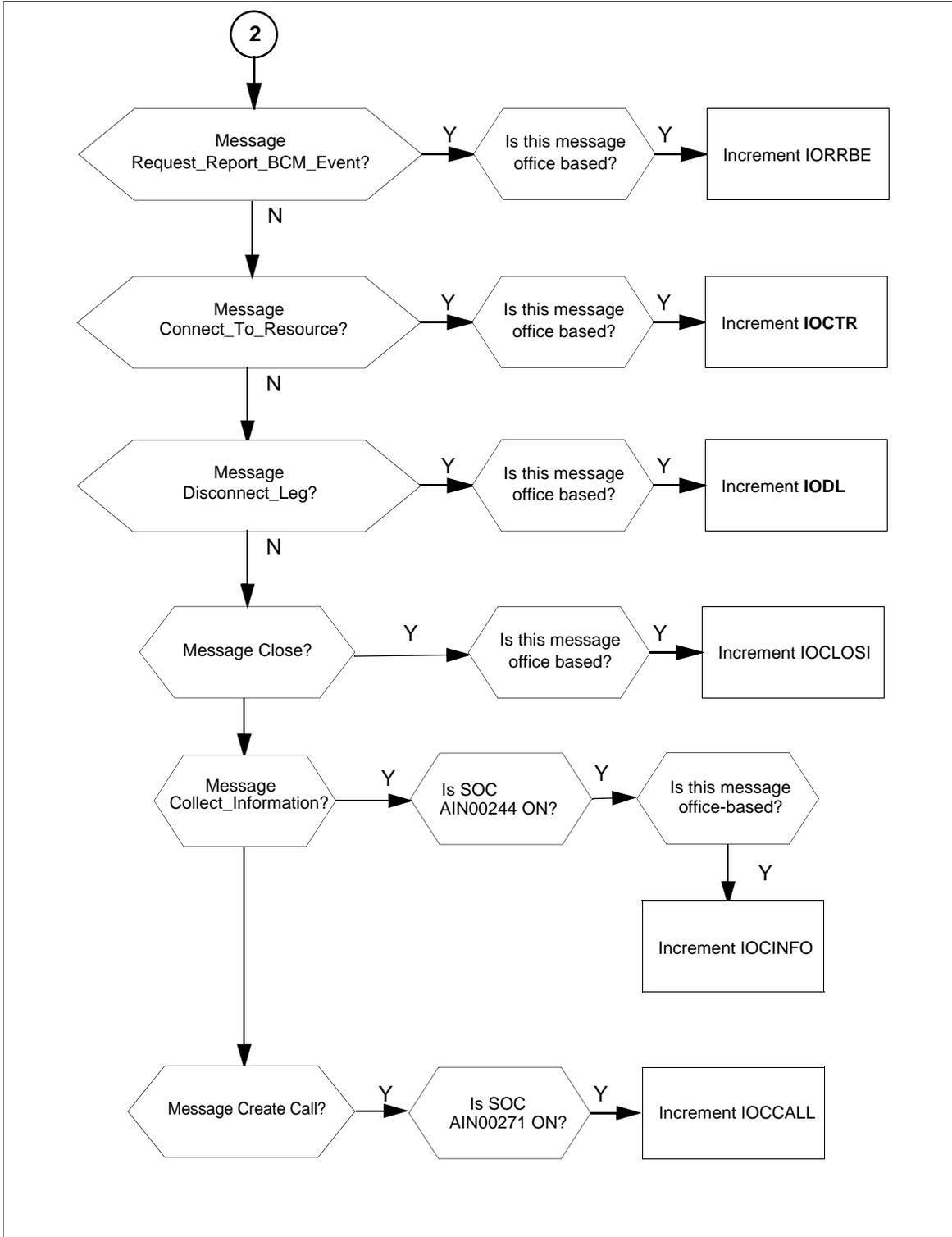


Figure 2 Logic flow for OM group AINICOFF registers (continued)



## 14.7 Register IOAR

Register IO Analyze\_Route (IOAR) counts the Analyze\_Route messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

### 14.7.1 Register IOAR release history

The NA008 product release introduced register IOAR.

### 14.7.2 Related registers

Register ISAR counts the Analyze\_Route messages the SSP receives from the SCP in a transaction that a line-subscribed message initiates. Registers IOAR + ISAR = total Analyze\_Route messages.

### 14.7.3 Related logs

There are no related logs.

### 14.7.4 Extension registers

There are no extension registers.

## 14.8 Register IOCON

Register IO Continue (IOCON) counts the Continue messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

### 14.8.1 Register IOCON release history

The NA008 product release introduced register IOCON.

### 14.8.2 Related registers

Register ISCON counts the messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers IOCON + ISCON = total Continue messages.

### 14.8.3 Related logs

There are no related logs.

### 14.8.4 Extension registers

There are no extension registers.

## 14.9 Register IOCTR

Register IO Connect\_To\_Resource (IOCTR) counts the incoming Connect\_To\_Resource messages received at the SSP from the SCP in transactions initiated by office-based messages.

### 14.9.1 Register IOCTR release history

The NA017 product release introduced register IOCTR.

### **14.9.2 Related registers**

Register IOCTR counts all the Incoming Connect\_To\_Resource messages and outgoing CTR\_Clear messages.

### **14.9.3 Related logs**

There are no related logs.

### **14.9.4 Extension registers**

There are no extension registers.

## **14.10 Register IODISC**

Register IO Disconnect (IODISC) counts the disconnect messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

### **14.10.1 Register IODISC release history**

The NA008 product release introduced register IODISC.

### **14.10.2 Related registers**

Register ISDISC counts the disconnect messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers IODISC + ISDISC = total disconnect messages.

### **14.10.3 Related logs**

There are no related logs.

### **14.10.4 Extension registers**

There are no extension registers.

## **14.11 Register IOSTR**

Register IO Send\_To\_Resource (IOSTR) counts the Send\_To\_Resource messages received at the SSP from the SCP in a transaction that an office-based message initiates.

### **14.11.1 Register IOSTR release history**

The NA008 product release introduced register IOSTR.

### **14.11.2 Related registers**

Register ISSTR counts the Send\_To\_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

Register IORCLR counts the Resource\_Clear messages sent from the SSP to the SCP in a transaction that an office-based message initiates.

Register ISRCLR counts the Resource\_Clear messages sent from the SSP to the SCP in a transaction that a subscribed message initiates.

Register IOCRE counts the Cancel\_Resource\_Event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

Register ISCRE counts the Cancel\_Resource\_Event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formula for related registers follow.

- $IOSTR + ISSTR = \text{total Send\_To\_Resource messages}$
- $IOCRE + ISCRE = \text{total Cancel\_Resource\_Event messages}$

### 14.11.3 Related logs

There are no related logs.

### 14.11.4 Extension registers

There are no extension registers.

## 14.12 Register IOCRE

Register Cancel\_Resource\_Event counts the Cancel\_Resource\_Event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

### 14.12.1 Register IOCRE release history

The NA008 product release introduced register IOCRE.

### 14.12.2 Related registers

ISCRE counts the Send\_To\_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

IORCLR counts the Resource\_Clear messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

ISRCLR counts the Resource\_Clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

IOSTR counts the Send\_To\_Resource messages the SSP receives from the SCP in a transaction that an office-based message initiates.

ISSTR counts the Send\_To\_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formulas for related registers follow.

- $IOCRE + ISCRE = \text{total Cancel\_Resource\_Event messages}$
- $IOSTR + ISSTR = \text{total Send\_To\_Resource messages}$

### **14.12.3 Related logs**

There are no related logs.

### **14.12.4 Extension registers**

There are no extension registers.

## **14.13 Register IOCITR**

Register IO Call\_Info\_To\_Resource (IOCITR) counts the Call\_Info\_To\_Resource messages received at the SSP from the SCP in a transaction that an office-based message initiates.

### **14.13.1 Register IOCITR release history**

The NA008 product release introduced register IOCITR.

### **14.13.2 Related registers**

Register ISCITR counts the Call\_Info\_To\_Resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers  $IOCITR + ISCITR = \text{total Call\_Info\_To\_Resource messages}$ .

Register IOCIFR counts the Call\_Info\_From\_Resource messages sent from the SSP to the SCP in a transaction that an office-based message initiates.

Register ISCIFR counts the Call\_Info\_From\_Resource messages sent from the SSP to the SCP in a transaction that a subscribed message initiates.

### **14.13.3 Related logs**

There are no related logs.

### **14.13.4 Extension registers**

There are no extension registers.

## **14.14 Register IOSN**

Register IO Send\_Notification (IOSN) counts the Send\_Notification messages received at the SSP from the SCP in a transaction that an office-based message initiates.

### **14.14.1 Register IOSN release history**

The NA008 product release introduced register IOSN.

**14.14.2 Related registers**

Register ISSN counts the Send\_Notification messages that the SSP receives from the SCP in a transaction that a subscribed message initiates. Registers IOSN + ISSN = total Send\_Notification messages.

Register IOTN counts the Termination\_Notification messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Register ISTN counts the Termination\_Notification messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

**14.14.3 Related logs**

There are no related logs.

**14.14.4 Extension registers**

There are no extension registers.

**14.15 Register IORRBE**

Register IO Request\_Report\_BCM\_Event (IORRBE) counts the Request\_Report\_BCM\_Event messages that the SSP receives from the SCP in a transaction that an office-based message initiates. Registers IORRBE + ISRRBE = total Request\_Report\_BCM\_Event messages.

**14.15.1 Register IORRBE release history**

The NA008 product release introduced register IORRBE.

**14.15.2 Related registers**

There are no related registers.

**14.15.3 Related logs**

There are no related logs.

**14.15.4 Extension registers**

There are no extension registers.

**14.16 Register IOCLOSI**

Register IO Close (IOCLOSI) counts the close messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

**14.16.1 Register IORRBE release history**

The NA008 product release introduced register IORRBE.

**14.16.2 Related registers**

There are no related registers.

### **14.16.3 Related logs**

There are no related logs.

### **14.16.4 Extension registers**

There are no extension registers.

## **14.17 Register IOCINFO**

Register IO Collect\_Information (IOCINFO) counts the Collect\_Information messages received in response to an office-based trigger encounter. The register increments when the SSP correctly decodes a Collect\_Info message and when AIN SOC AIN00244 is ON.

### **14.17.1 Register IOCINFO release history**

The NA010 product release introduced register IOCINFO.

### **14.17.2 Related registers**

Register ISCINFO counts the Collect\_Information messages received in response to a subscribed trigger encounter.

Registers IOCINFO + ISCINFO = total Collect\_Information messages.

### **14.17.3 Related logs**

There are no related logs.

### **14.17.4 Extension registers**

There are no extension registers.

## **14.18 Register IOCCALL**

Register IO Create\_Call counts the incoming Create\_Call messages that the SSP receives from the SCP. The register increments when the SSP correctly decodes Create\_Call messages and when AIN SOC AIN00271 is ON.

### **14.18.1 Register IOCCALL release history**

The NA013 product release introduces register IOCCALL.

### **14.18.2 Related registers**

OM register CCTMOUT in OM group AIN counts the number of times that the user rejects the Create\_Call service by allowing a time-out after Create\_Call gives notification to the user. Register IOCLOSO records the number of CLOSE messages sent by Create\_Call functionality in addition to CLOSE messages from other AIN applications in the SSP.

### **14.18.3 Related logs**

There are no related logs.

#### **14.18.4 Extension registers**

There are no extension registers.

### **14.19 Register IODL**

Register Incoming Office-based Disconnect Leg (IODL) counts the number of incoming office-based Disconnect Leg responses received by the SSP.

#### **14.19.1 Register IOCCALL release history**

The NA019 product release introduces register IODL.

#### **14.19.2 Related registers**

Register ISDL records the number of subscriber-based Disconnect Leg messages received by the SSP.

Register DLFL counts the number of times that the Disconnect Leg response fails to complete its task.

#### **14.19.3 Related logs**

There are no related logs.

#### **14.19.4 Extension registers**

There are no extension registers.

### **14.20 Release history**

#### **14.20.1 SN07 (DMS)**

The register IODL was added by CR Q00765666.

#### **14.20.2 NA017**

The register IOCTR was added, (59037140).

#### **14.20.3 NA008**

The NA008 product release introduced OM group AINICOFF.



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# 15 OM group AINICSUB

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## 15.1 OM description

Advanced intelligent network incoming subscription-based (AINICSUB) counts AIN Service Enablers subscription-based messages. The service control point (SCP) sends these messages to the service switching point (SSP). The system uses AINICSUB to monitor the incoming subscription traffic to the SSP.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. An OM register increases when the system correctly sends or receives the message that goes with the OM register. The system sends a message correctly when the system codes the message into the transaction capability application part (TCAP) protocol. The system receives a message correctly when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts the message after the system decodes the message parameters. The system decodes messages if errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or component.

Types of errors in the TCAP package or component follow:

- very important protocol errors
- errors as a result of a bad group of messages, packages or component types
- invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINICSUB contains registers that count call-related, incoming, subscribed, AIN Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG, TRIGINFO, and TRIGITM.

The system can subscribe to the triggers that follow by line or by group:

- Off-Hook\_Immediate
- Off-Hook\_Delay
- Shared\_Interoffice\_Trunk
- Public\_Feature\_Code
- Specific\_Feature\_Code
- Customized\_Dialing\_Plan
- automatic flexible routing (AFR)

*Note:* An AFR trigger can be office-based or subscribed. The system counts messages sent as a result of this trigger as subscribed.

- O\_Called\_Party\_Busy
- O\_No\_Answer
- Termination\_Attempt
- Prefix
- T\_Busy
- T\_No\_Answer

## Registers

OM group AINICSUB registers display on the MAP terminal as follows:

ISAR	ISCON	ISAUTHT	ISFC
ISDISC	ISSTR	ISCRE	ISCITR
ISSN	ISRRBE	ISCLOSI	ISCINFO
ISOFRCL	ISCTR	ISDL	

## 15.2 Group structure

OM group AINICSUB provides one tuple per office.

**Key field:**

There is no Key field.

**Info field:**

There is no Info field.

### 15.3 Related OM groups

Related OM groups that provide message counts for AIN Service Enablers follow:

- AIN outgoing office-based (AINOGOFF) counts the AIN Service Enablers office-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN outgoing subscription-based (AINOGSUB) counts AIN Service Enablers subscription-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages that the SCP sends to the SSP. This OM group monitors the incoming traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SCP on a non-call-related basis.
- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. OM group AIN counts messages entered as R01 in tables TRIGDIG, TRIGINFO, and TRIGITM.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the blocking of AIN R0.1 queries by: ACG, ACG control list overflows, and changes made to the ACG control lists.

Related validation formulas for the OM group follow:

- total of AINICSUB group + total of AINICOFF group = total of all incoming call-related AIN Service Enablers messages
- total of AINICSUB group + total of AINICOFF group + AINNCR registers NACG + NAGCR + NUPREQ + NMFC + NUPD + NUSUCC = total incoming AIN Service Enablers messages received from the SCP
- total of AINICSUB group + total of AINOGSUB group + total of AINICOFF group + total of AINOGOFF group = total call-related messages

### 15.4 Related functional groups

There are no related functional groups.

### 15.5 Related functionality codes

There are no correct functionality codes.

Figure 1 OM group AINICSUB registers

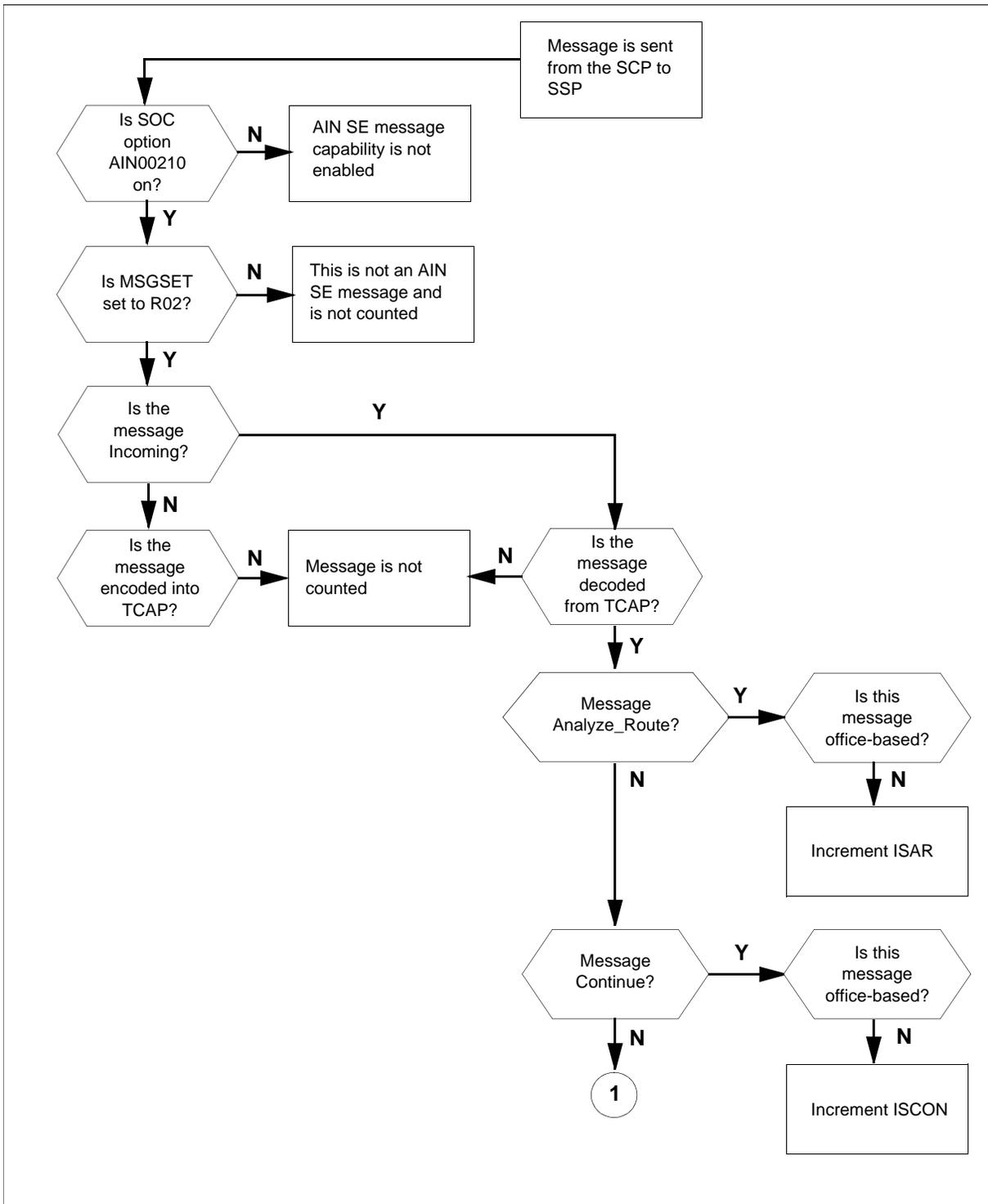


Figure 2 OM group AINICSUB registers (continued)

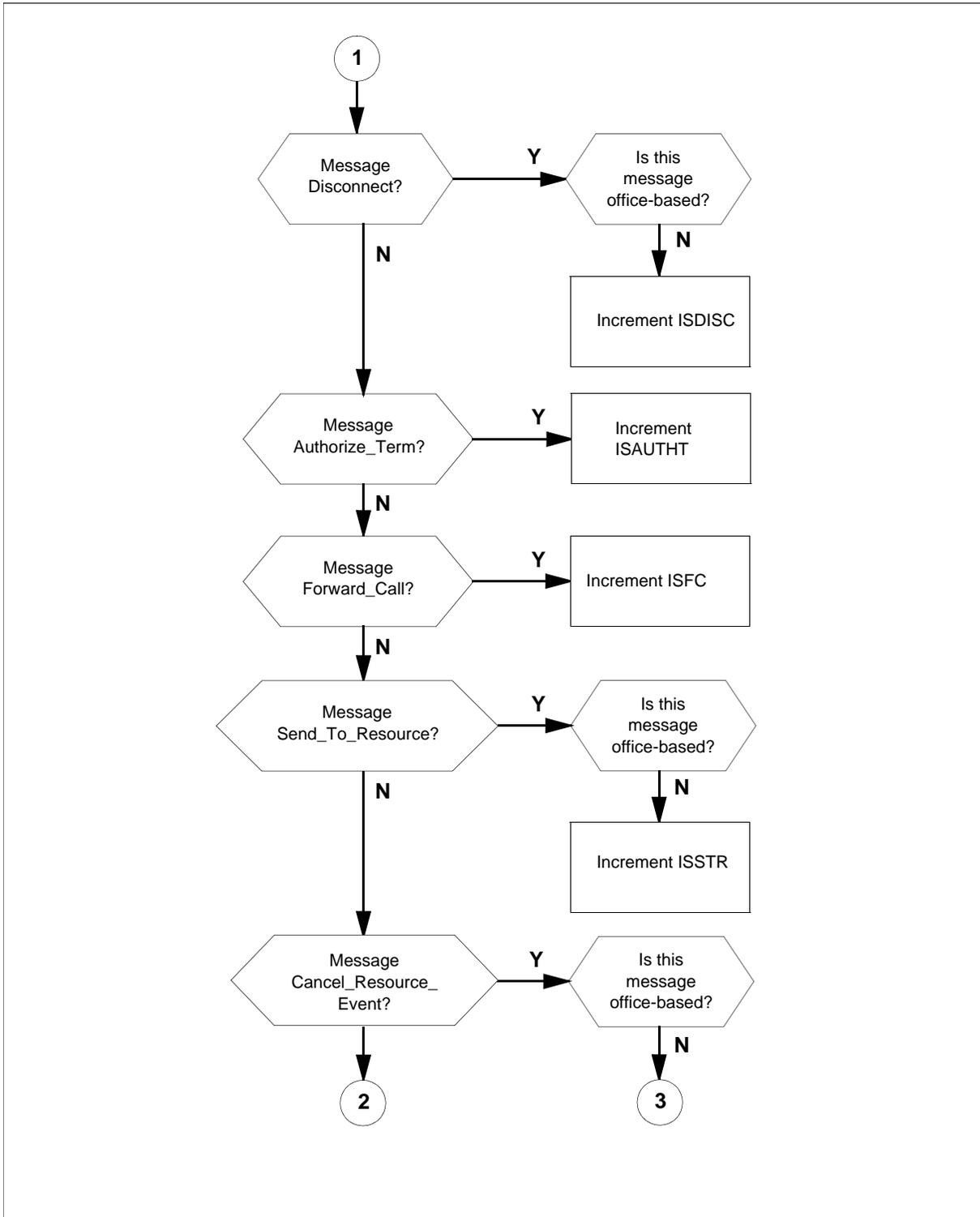


Figure 3 OM group AINICSUB registers (continued)

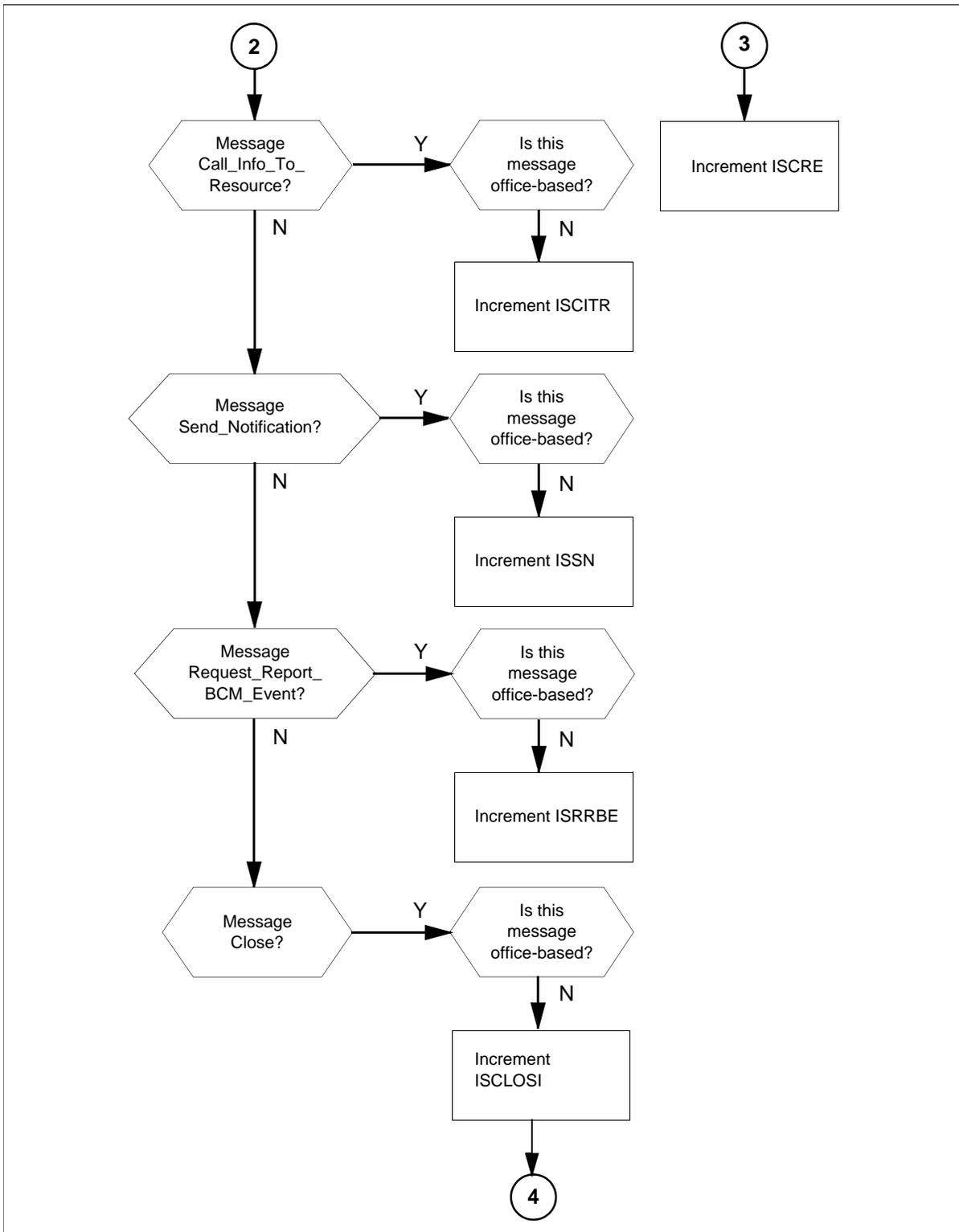
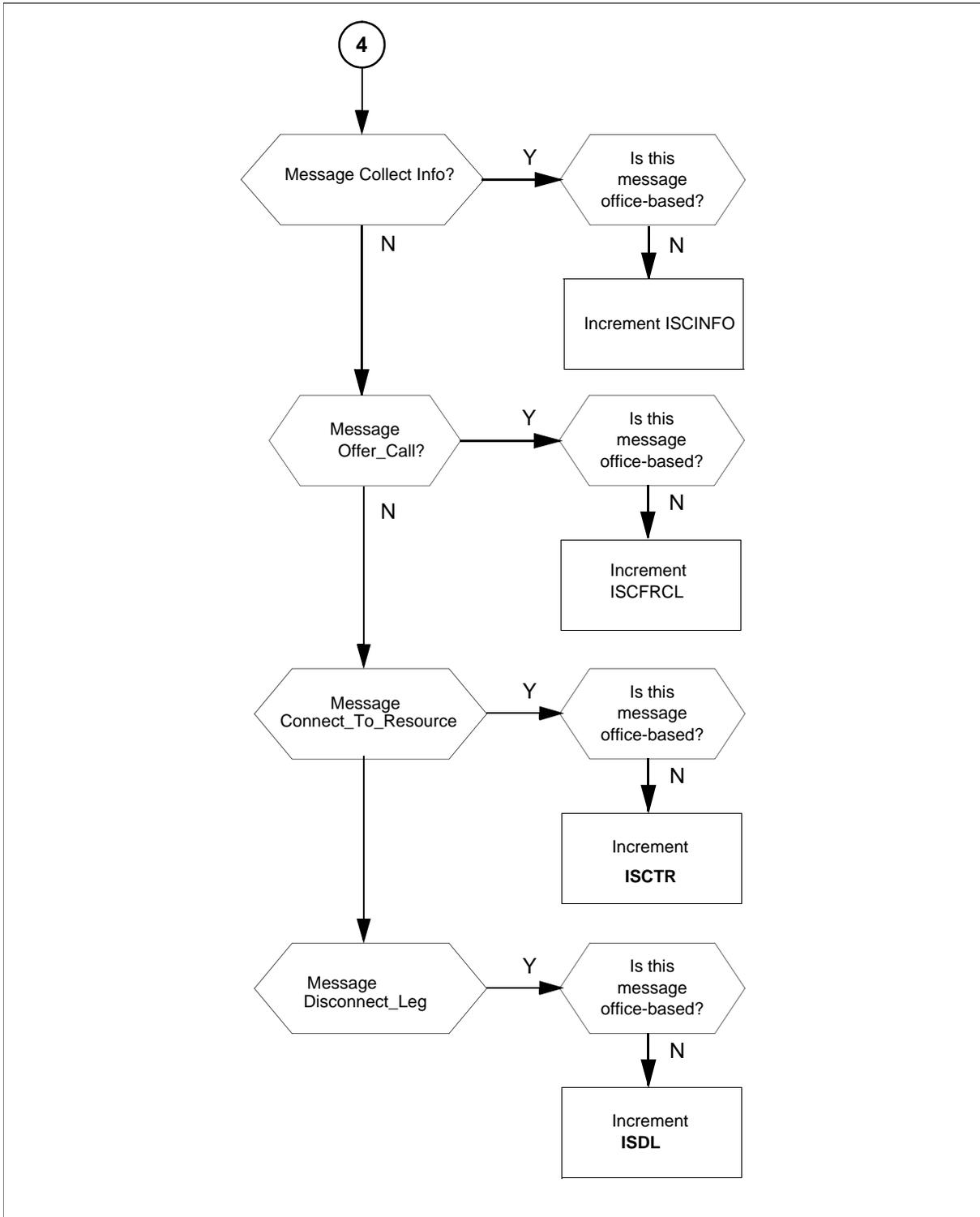


Figure 4 OM group AINICSUB registers (continued)



## 15.6 Register ISAR

IS Analyze\_Route (ISAR)

The ISAR register counts analyze\_route messages that the SSP receives from the SCP in a transaction that an subscribed message initiates.

### 15.6.1 Register ISAR release history

NA008 introduced the ISAR register.

### 15.6.2 Related registers

The IOAR register counts the analyze\_route messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is  $ISAR + IOAR = \text{total analyze\_route messages}$

### 15.6.3 Related logs

There are no related logs.

### 15.6.4 Extension registers

There are no extension registers.

## 15.7 Register ISCINFO

Interactive Subscribed Collect\_Information (ISCINFO)

The ISCINFO register counts the Collect\_Information messages received in response to a line-subscribed trigger encounter.

### 15.7.1 Register ISCINFO release history

NA010 introduced the ISCINFO register.

### 15.7.2 Related registers

The IOCINFO register counts the Collect\_Information messages that the SSP receives when the SSP hits an office subscribed trigger.

The validation formula for this register is  $ISCINFO + IOCINFO = \text{total Collect\_Information messages}$

### 15.7.3 Related logs

There are no related logs.

### 15.7.4 Extension registers

There are no extension registers.

## 15.8 Register ISCON

IS Continue (ISCON)

The ISCON register counts continue messages that the SSP receives from the SCP, in a transaction that a subscribed message initiates.

### 15.8.1 Register ISCON release history

NA008 introduced the ISCON register.

### 15.8.2 Related registers

The IOCON register counts the continue messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is  $ISCON + IOCON = \text{total continue messages}$

### 15.8.3 Related logs

There are no related logs.

### 15.8.4 Extension registers

There are no extension registers.

## 15.9 Register ISAUTHT

IS Authorize\_Termination (ISAUTHT)

The ISAUTHT register counts authorize\_termination messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

### 15.9.1 Register ISAUTHT release history

NA008 introduced the ISAUTHT register.

### 15.9.2 Related registers

There are no related registers.

### 15.9.3 Related logs

There are no related logs.

### 15.9.4 Extension registers

There are no extension registers.

## 15.10 Register ISCTR

Register IS Connect\_To\_Resource (ISCTR) counts the Connect\_To\_Resource messages the SSP receives from the SCP in a subscribed-message initiated transaction.

### **15.10.1 Register ISCTR release history**

The NA017 product release introduced the ISCTR register.

### **15.10.2 Related registers**

There are no related registers.

### **15.10.3 Related logs**

There are no related logs.

### **15.10.4 Extension registers**

There are no extension registers.

## **15.11 Register ISFC**

IS Forward\_Call (ISFC)

The ISFC register counts forward\_call messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

### **15.11.1 Register ISFC release history**

NA008 introduced the ISFC register.

### **15.11.2 Related registers**

There are no related registers.

### **15.11.3 Related logs**

There are no related logs.

### **15.11.4 Extension registers**

There are no extension registers.

## **15.12 Register ISDISC**

IS Disconnect (ISDISC)

The ISDISC register counts the disconnect messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

### **15.12.1 Register ISDISC release history**

NA008 introduced the ISDISC register.

### **15.12.2 Related registers**

The IODISC register counts the disconnect messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is  $IODISC + ISDISC = \text{total disconnect messages}$

### 15.12.3 Related logs

There are no related logs.

### 15.12.4 Extension registers

There are no extension registers.

## 15.13 Register ISSTR

IS Send\_To\_Resource (ISSTR)

The ISSTR register counts the send\_to\_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

### 15.13.1 Register ISSTR release history

NA008 introduced the ISSTR register.

### 15.13.2 Related registers

The IOCRE register counts the cancel\_resource\_event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The IOSTR register counts the send\_to\_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISRCLR register counts the resource\_clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

The IORCLR register counts the resource\_clear messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Validation formulas for the related registers follow:

- $IOCRE + ISCRE = \text{total cancel\_resource\_event messages}$
- $IOSTR + ISSTR = \text{total send\_to\_resource messages}$

### 15.13.3 Related logs

There are no related logs.

### 15.13.4 Extension registers

There are no extension registers.

## 15.14 Register ISCRE

IS Cancel\_Resource\_Event (ISCRE)

The ISCRE register counts the cancel\_resource\_event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

#### **15.14.1 Register ISCRE release history**

NA008 introduced the ISCRE register.

#### **15.14.2 Related registers**

The IOCRE register counts the cancel\_resource\_event messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISSTR register counts the send\_to\_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The IOSTR register counts the send\_to\_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The ISRCLR register counts the resource\_clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

The IORCLR register counts the resource\_clear messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

Validation formulas for related registers follow:

- $IOCRE + ISCRE = \text{total cancel\_resource\_event messages}$
- $ISSTR + IOSTR = \text{total send\_to\_resource messages}$

#### **15.14.3 Related logs**

There are no related logs.

#### **15.14.4 Extension registers**

There are no extension registers.

### **15.15 Register ISCITR**

IS Call\_Info\_To\_Resource (ISCITR)

The ISCITR register counts call\_info\_to\_resource messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

#### **15.15.1 Register ISCITR release history**

NA008 introduced the ISCITR register.

#### **15.15.2 Related registers**

The IOCITR register counts the call\_info\_to\_resource messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is  $IOCITR + ISCITR = \text{total call\_info\_to\_resource messages}$

The IOCIFR register counts the call\_info\_from\_resource messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

The ISCIFR register counts the call\_info\_from\_resource messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

### **15.15.3 Related logs**

There are no related logs.

### **15.15.4 Extension registers**

There are no extension registers.

## **15.16 Register ISSN**

IS Send\_Notification (ISSN)

The ISSN register counts the send\_notification messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

### **15.16.1 Register ISSN release history**

NA008 introduced the ISSN register.

### **15.16.2 Related registers**

The IOSN register counts the send\_notification messages that the SSP receives from the SCP in a transaction that an office-based message initiates.

The validation formula for this register is  $\text{IOSN} + \text{ISSN} = \text{total send\_notification messages}$

The IOTN register counts the termination\_notification messages that the SSP sends to the SCP in a transaction that an office-based message initiates.

The ISTN register counts the termination\_notification messages that the SSP sends to the SCP in a transaction that a subscribed message initiates.

### **15.16.3 Related logs**

There are no related logs.

### **15.16.4 Extension registers**

There are no extension registers.

## **15.17 Register ISRRBE**

IS Request\_Report\_BCM\_Event (ISRRBE)

The ISRRBE register counts request\_report\_BCM\_event messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

The validation formula for this register is  $ISRRBE + IORRBE = \text{total request\_report\_BCM\_event messages}$

#### **15.17.1 Register ISRRBE release history**

NA008 introduced the ISRRBE register.

#### **15.17.2 Related registers**

There are no related registers.

#### **15.17.3 Related logs**

There are no related logs.

#### **15.17.4 Extension registers**

There are no extension registers.

### **15.18 Register ISCLOSI**

IS Close (ISCLOSI)

The ISCLOSI register counts close messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

#### **15.18.1 Register ISCLOSI release history**

NA008 introduced the ISCLOSI register.

#### **15.18.2 Related registers**

There are no related registers.

#### **15.18.3 Related logs**

There are no related logs.

#### **15.18.4 Extension registers**

There are no extension registers.

### **15.19 Register ISOFRCL**

Interactive, Subscribed, Offer\_Call (ISOFRCL)

The ISOFRCL register counts Offer\_Call messages that the SSP receives from the SCP in a transaction that a subscribed message initiates.

#### **15.19.1 Register ISOFRCL release history**

NA011 introduces the ISOFRCL register.

#### **15.19.2 Related registers**

There are no related registers.

**15.19.3 Related logs**

There are no related logs.

**15.19.4 Extension registers**

There are no extension registers.

**15.20 Register ISDL**

Incoming Subscriber Disconnect Leg (ISDL).

The ISDL register counts the number of incoming subscriber-based Disconnect Leg responses received by the SSP.

**15.20.1 Register ISDL release history**

The NA019 product release introduces register ISDL.

**15.20.2 Related registers**

Register IODL records the number of office-based Disconnect Leg messages received by the SSP.

Register DLFL counts the number of times that the Disconnect Leg response fails to complete its task.

**15.20.3 Related logs**

There are no related logs.

**15.20.4 Extension registers**

There are no extension registers.

**15.21 Release history****15.21.1 SN07 (DMS)**

The register ISDL was added to OM group AINICSUB, (Q00765666).

**15.21.2 NA017**

The register ISCTR was added to OM group AINICSUB, (59037140).

**15.21.3 NA008**

NA008 introduced OM group AINICSUB.



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## 16 OM group AINNCR

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### 16.1 OM description

Advanced intelligent networks non-call-related (AINNCR) counts AIN Service Enablers non-call-related messages. These messages pass between the service control point (SCP) and the service switching point (SSP).

*Note:* A non-call-related (NCR) message refers to a message that does not affect call processing.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. An OM register increments when the system correctly sends or receives a message that corresponds to that OM register. The system correctly sends a message when the system encodes the message into the transaction capability application part (TCAP) protocol. The system receives a message correctly when the system decodes the message from the TCAP protocol.

To decode a TCAP message involves several stages of error checking. The system counts the message after the message parameters are decoded. The system decodes messages even when errors are present in the message parameters. The system does not count the message when the system detects an error in the TCAP package or component.

Errors in the TCAP package or component are as follows:

- all fatal protocol errors
- errors as a result of a bad group of message, package or component type
- invalid response message
- bad correlation identifiers
- duplicated messages

OM group AINNCR contains 11 registers that count all non-call-related AIN Service Enablers messages. Messages entered as R02 in tables TRIGDIG or TRIGINFO are counted.

## 16.2 Registers

The following figure illustrates OM group AINNCR registers as they appear on the MAP terminal display.

**Figure 117 MAP terminal display of OM group AINNCR registers**

NACG	NAOVFW	NAGCR	NAGCRS
NUPREQ	NUPDAT	NMFC	NMSUCC
NSREP	NUPD	NUSUCC	

## 16.3 Group structure

OM group AINNCR provides one tuple per office.

**Key field:**

There is no Key field

**Info field:**

There is no Info field

## 16.4 Associated OM groups

The following associated OM groups provide message counts for AIN Service Enablers:

- AIN outgoing office-based messages (AINOGOFF) counts the AIN Service Enablers office-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based messages (AINICOFF) counts AIN Service Enablers office-based messages the SCP sends to the SSP. This OM group monitors the incoming traffic to the SSP.
- AIN outgoing subscription-based messages (AINOGSUB) counts the AIN Service Enablers subscription-based messages. These messages are sent from the SSP to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming subscription-based messages (AINICSUB) counts the AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the blocking of AIN R0.1 queries by ACG, ACG control list overflows, and changes made to the ACG control lists.

The associated OM group validation formulas are as follows:

- total of AINNCR group = total non-call-related messages
- AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP + total of AINOCSUB group + total of AINOGOFF group = total outgoing messages
- AINNCR registers NACG + NAGCR + NUPREQ + NMFC + NUPD + NUSUCC + total of AINICSUB group + total of AINICOFF group = total incoming messages

## 16.5 Associated functional groups

There are no correct associated functional groups.

## 16.6 Associated functionality codes

There are no correct associated functionality codes.

The following figure illustrates the logical flow for OM group AINNCR registers.

Figure 118 Logic flow for OM group AINNCR registers

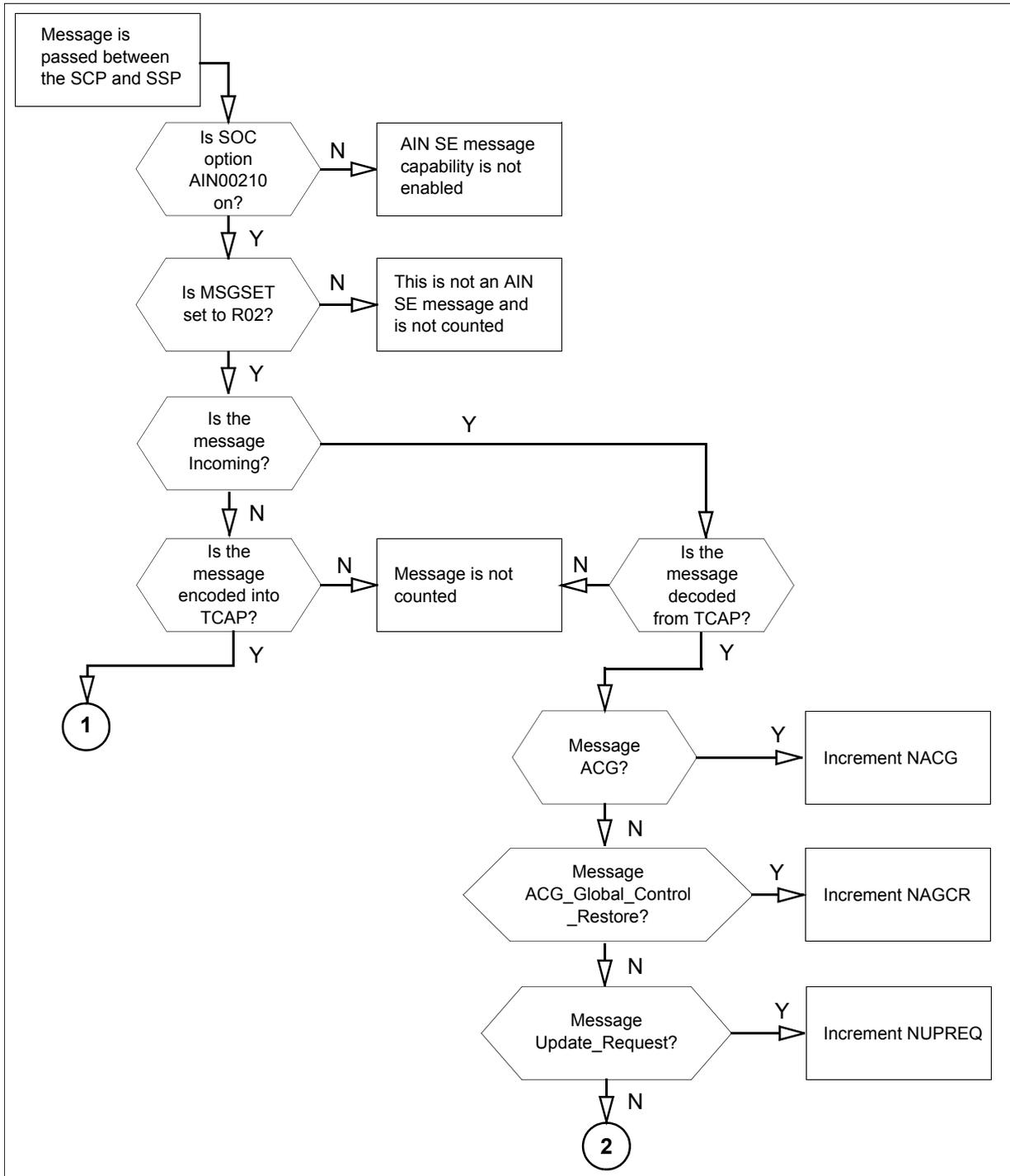
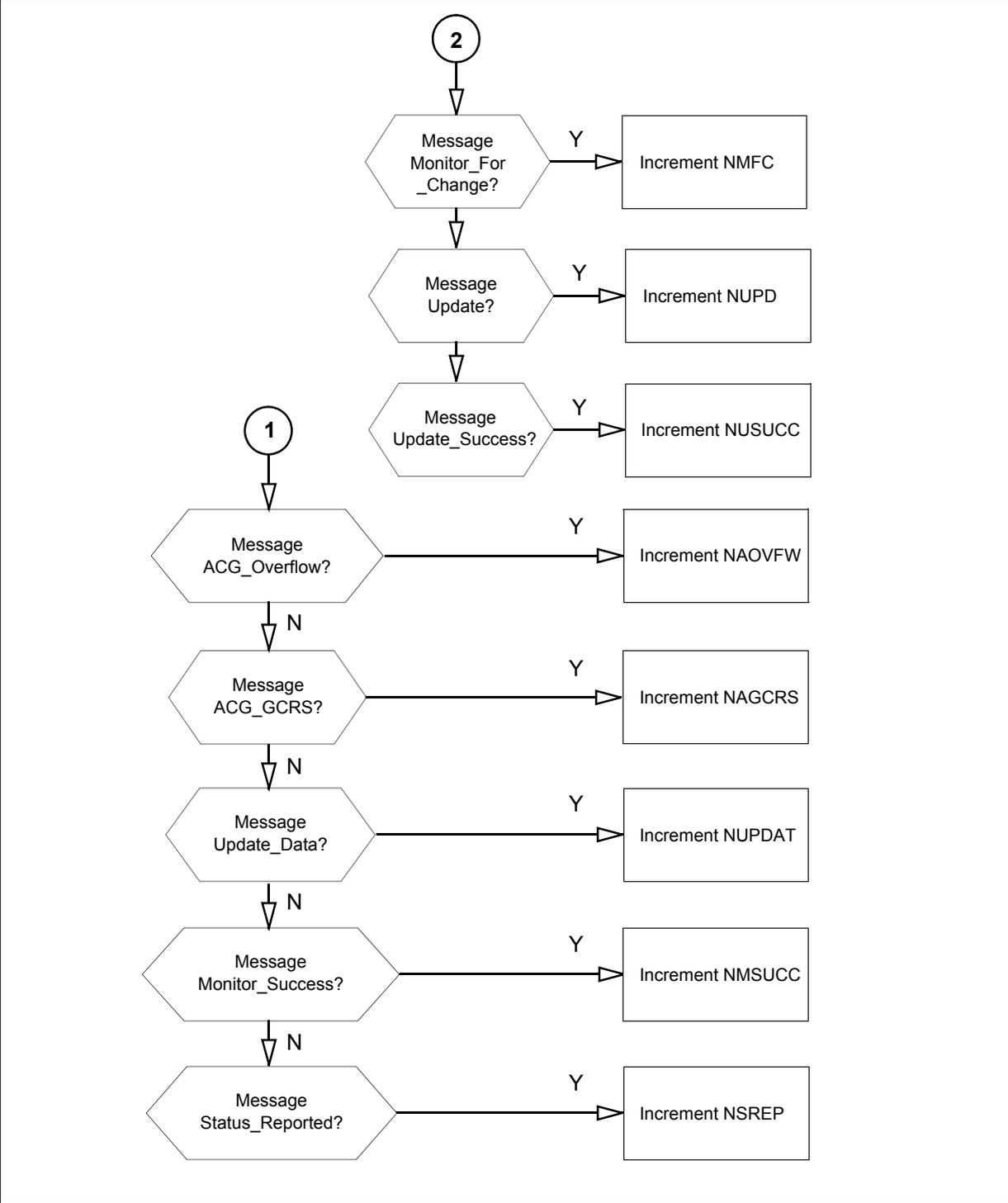


Figure 118 Logic flow for OM group AINNCR registers (continued)



## 16.7 Register NACG

Register N Automatic\_Code\_Gap (NACG) counts Automatic\_Code\_Gap messages the SSP receives from the SCP.

The following are validation formulas for register NACG:

- AINNCR registers  $NACG + NAGCR + NUPREQ + NMFC =$  total of all incoming, non-call-related messages
- AINNCR registers  $NACG + NAGCR + NUPREQ + NMFC +$  total of AINICSUB group + total of AINICOFF group = total incoming messages
- AINNCR registers  $NACG + NUPREQ + NAGCR + NMFC =$  total of all incoming, unsolicited, non-call-related messages

### 16.7.1 Register NACG release history

Register NACG was introduced in NA008.

### 16.7.2 Associated registers

There are no associated registers

### 16.7.3 Associated logs

There are no associated logs.

### 16.7.4 Extension registers

There are no extension registers.

## 16.8 Register NAOVFW

Register N ACG\_Overflow (NAOVFW) counts ACG\_Overflow messages sent from the SSP sends to the SCP.

The following are validation formulas for register NAOVFW:

- AINNCR registers  $NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP =$  total of all outgoing non-call-related messages
- AINNCR registers  $NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP +$  total of AINOFSUB group + total of AINOFSOFF group = total outgoing messages

### 16.8.1 Register NAOVFW release history

Register NAOVFW was introduced in NA008.

### 16.8.2 Associated registers

There are no associated registers.

### 16.8.3 Associated logs

There are no associated logs.

#### 16.8.4 Extension registers

There are not extension registers.

### 16.9 Register NAGCR

Register N ACG\_Global\_Control\_Restore (NAGCR) counts ACG\_global\_control\_restore messages the SSP receives from the SCP.

The following are validation formulas for register NAGCR:

- AINNCR registers  $NAGCR + NACG + NUPREQ + NMFC$  = total of all incoming, non-call-related messages
- AINNCR registers  $NAGCR + NACG + NUPREQ + NMFC$  + total of AINICSUB group + total of AINICOFF group = total incoming messages
- AINNCR registers  $NAGCR + NACG + NUPREQ + NMFC$  = total of all incoming, unsolicited, non-call-related messages

#### 16.9.1 Register NAGCR release history

Register NAGCR was introduced in NA008.

#### 16.9.2 Associated registers

There are no associated registers.

#### 16.9.3 Associated logs

There are no associated logs.

#### 16.9.4 Extension registers

There are no extension registers.

### 16.10 Register NAGCRS

N ACG\_Global\_Control\_Restore\_Success (NAGCRS) counts ACG\_global\_control\_restore\_success messages the SSP sends to the SCP.

The following are validation formulas for register NAGCRS:

- AINNCR registers  $NAGCRS + NAOVFW + NUPDAT + NMSUCC + NSREP$  = total of all outgoing non-call-related messages
- AINNCR registers  $NAGCRS + NAOVFW + NUPDAT + NMSUCC + NSREP$  + total of AINOFSUB group + total of AINOFSOFF group = total outgoing messages

#### 16.10.1 Register NAGCRS release history

Register NAGCRS was introduced in NA008.

#### 16.10.2 Associated registers

There are no associated registers.

### 16.10.3 Associated logs

There are no associated logs.

### 16.10.4 Extension registers

There are no extension registers.

## 16.11 Register NUPREQ

Register N Update\_Request (NUPREQ) counts Update\_Request messages the SSP receives from the SCP.

The following are validation formulas for register NUPREQ:

- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, non-call-related messages}$
- $\text{AINNCR registers NUPREQ} + \text{NACG} + \text{NAGCR} + \text{NMFC} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NUPREQ} + \text{NAGCR} + \text{NACG} + \text{NMFC} = \text{total of all incoming, unsolicited, non-call-related messages}$

### 16.11.1 Register NUPREQ release history

Register NUPREQ was introduced in NA008.

### 16.11.2 Associated registers

There are no associated registers.

### 16.11.3 Associated logs

There are no associated logs.

### 16.11.4 Extension registers

There are no extension registers.

## 16.12 Register NUPDAT

Register N Update\_Data (NUPDAT) counts Update\_Data messages the SSP sends to the SCP.

The following are validation formulas for register NUPDAT:

- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NUPDAT} + \text{NAGCRS} + \text{NAOVFW} + \text{NMSUCC} + \text{NSREP} + \text{total of AINOFSUB group} + \text{total of AINOGOFF group} = \text{total outgoing messages}$

### 16.12.1 Register NUPDAT release history

Register NUPDAT was introduced in NA008.

**16.12.2 Associated registers**

There are no associated registers.

**16.12.3 Associated logs**

There are no associated logs.

**16.12.4 Extension registers**

There are no extension registers.

**16.13 Register NMFC**

Register N Monitor\_For\_Change (NMFC) counts Monitor\_For\_Change messages the SSP receives from the SCP.

The following are validation formulas for register NMFC:

- $\text{AINNCR registers NMFC} + \text{NACG} + \text{NAGCR} + \text{NUPREQ} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NUPREQ} + \text{NACG} + \text{total of AINICSUB group} + \text{total of AINICOFF group} = \text{total incoming messages}$
- $\text{AINNCR registers NMFC} + \text{NAGCR} + \text{NACG} + \text{NUPREQ} = \text{total of all incoming, unsolicited, non-call-related messages}$

**16.13.1 Register NMFC release history**

Register NMFC was introduced in NA008.

**16.13.2 Associated registers**

There are no associated registers.

**16.13.3 Associated logs**

There are no associated logs.

**16.13.4 Extension registers**

There are no extension registers,

**16.14 Register NMSUCC**

Register N Monitor\_Success (NMSUCC) counts Monitor\_Success messages sent from the SSP sends to the SCP.

The following are validation formulas for register NMSUCC:

- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NUPDAT} + \text{NAOVFW} + \text{NSREP} = \text{total of all outgoing non-call-related messages}$
- $\text{AINNCR registers NMSUCC} + \text{NAGCRS} + \text{NAOVFW} + \text{NUPDAT} + \text{NSREP} + \text{total of AINOgsub group} + \text{total of AINOgOFF group} = \text{total outgoing messages}$

#### **16.14.1 Register NMSUCC release history**

Register NMSUCC was introduced in NA008.

#### **16.14.2 Associated registers**

There are no associated registers.

#### **16.14.3 Associated logs**

There are no associated logs.

#### **16.14.4 Extension registers**

There are no extension registers.

### **16.15 Register NSREP**

Register N Status\_Reported (NSREP) counts Status\_Reported messages the SSP sends to the SCP.

The following are validation formulas for register NSREP:

- AINNCR registers NSREP + NAGCRS + NUPDAT + NMSUCC + NAOVFW = total of all outgoing non-call-related messages
- AINNCR registers NSREP + NAGCRS + NAOVFW + NUPDAT + NMSUCC + total of AINOGSUB group + total of AINOGOFF group = total outgoing messages

#### **16.15.1 Register NSREP release history**

Register NSREP was introduced in NA008.

#### **16.15.2 Associated registers**

There are no associated registers.

#### **16.15.3 Associated logs**

There are no associated logs.

#### **16.15.4 Extension registers**

There are no extension registers.

### **16.16 Register NUPD**

N Update (NUPD) counts Update messages sent from the SCP to the SSP.

#### **16.16.1 Register NUPD release history**

Register NUPD was introduced in NA009.

#### **16.16.2 Associated registers**

NUSUCC

**16.16.3 Associated logs**

There are no associated logs.

**16.16.4 Extension registers**

There are no extension registers.

**16.17 Register NUSUCC**

N Update\_Success (NUSUCC) counts Update\_Success messages sent from the SSP to the SCP.

**16.17.1 Register NUSUCC release history**

Register NUSUCC was introduced in NA009.

**16.17.2 Associated registers**

NUPD

**16.17.3 Associated logs**

There are no associated logs.

**16.17.4 Extension registers**

There are no extension registers.

**16.18 Release history**

OM group AINNCR was introduced in NA008.



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# 17 OM group AINOGOFF

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## 17.1 OM description

OM group Advanced intelligent network outgoing office-based (AINOGOFF).

The OM group AINOGOFF counts AIN Service Enablers office-based messages the service switching point (SSP) sends to the service control point (SCP). This OM group monitors outgoing traffic to the SCP.

The SSP can send messages that are the result of more than one kind of trigger or event. A separate OM register provides a count for each trigger and event type. An OM registers increases when the system sends or receives the message that corresponds with the register. A message sends when the message encodes into the transaction-capability application part (TCAP) protocol. The system receives a message correctly when the message decodes from the TCAP protocol.

Decoding a TCAP message involves several error checks. After the message parameters decode, the TCAP package counts the message when it detects an error in the message parameters. When the TCAP package or component detects an error, the message is not counted.

The following are errors in the TCAP package or component:

- all fatal protocol errors
- errors as a result of a bad group of messages, packages or component types
- invalid response message
- bad correlation identifiers
- duplicated messages

The OM group AINOGOFF contains 10 registers that count call-related, outgoing, office-based, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG or TRIGINFO.

The following office-based triggers can subscribe to:

- Specific\_Digit\_String
- N11

## 17.2 Registers

The OM group AINOGOFF registers appear on the MAP terminal as follows:

TOIASDS	TOIAN11	EONB	EOOCB
EOONA	EOOANS	IOTN	IOCIFR
IORCLR	IOCLOSO	EOODCLED	EOODCING
EOTOUT	TOIAOPFC	IOCCLR	EOOTS

## 17.3 Group structure

The OM group AINOGOFF provides one tuple for each office.

**Key field:**

There is no key field.

**Info field:**

There is no key field.

## 17.4 Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- The OM group AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages the service control point (SCP) sends to the service switching point (SSP). This OM group monitors the incoming traffic to the SSP.
- The OM group AIN outgoing subscription-based (AINOGSUB) counts the AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- The OM group AIN outgoing subscription-based 2 (AINOGSB2) also counts the AIN Service Enablers subscription-based messages the SSP sends to the SSP. This OM group monitors outgoing traffic to the SCP.
- The OM group AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- The OM group AIN non-call-related (AINNCR) counts AIN messages. This OM group counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.

- The OM group Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors the following:
  - AIN R0.1 queries that ACG blocks
  - ACG control list overflows
  - changes to the ACG control lists

The validation formulas for associated OM groups follow:

- total of AINOGOFF group + total of AINOFSUB group = total outgoing call-related Service Enablers messages
- AINOGOFF registers TOIASDS + TOIAN11 + AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR + TSOCBCB + TSONANA + TSOAOHI + TSICOHD + TSICSIT = total of all originating Service Enabler trigger detection point (TDP) messages.
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + AINOFSUB registers ESNB + ESOANS + ESONA + ESOCB + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages
- total of AINOGOFF group + total of AINOFSUB group + total of AINICOFF group + total of AINICFSUB group = total call-related messages
- total of AINOGOFF group + total of AINOFSUB group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOGOFF registers TOIASDS + TOIAN11 + TOIAOPFC AINOFSUB registers TSIAPFC + TSIASFC + TSIACDP = total Info\_Analyzed messages
- AINOGOFF register EOTOUT + AINOFSUB register ESOMTOUT + AINOFSB2 ESTMTOUT = total Timeout messages.
- AINOGOFF registers EOOCLD + EOODCING + AINOFSUB registers ESODCLD + ESODCING = total O\_Disconnect messages.

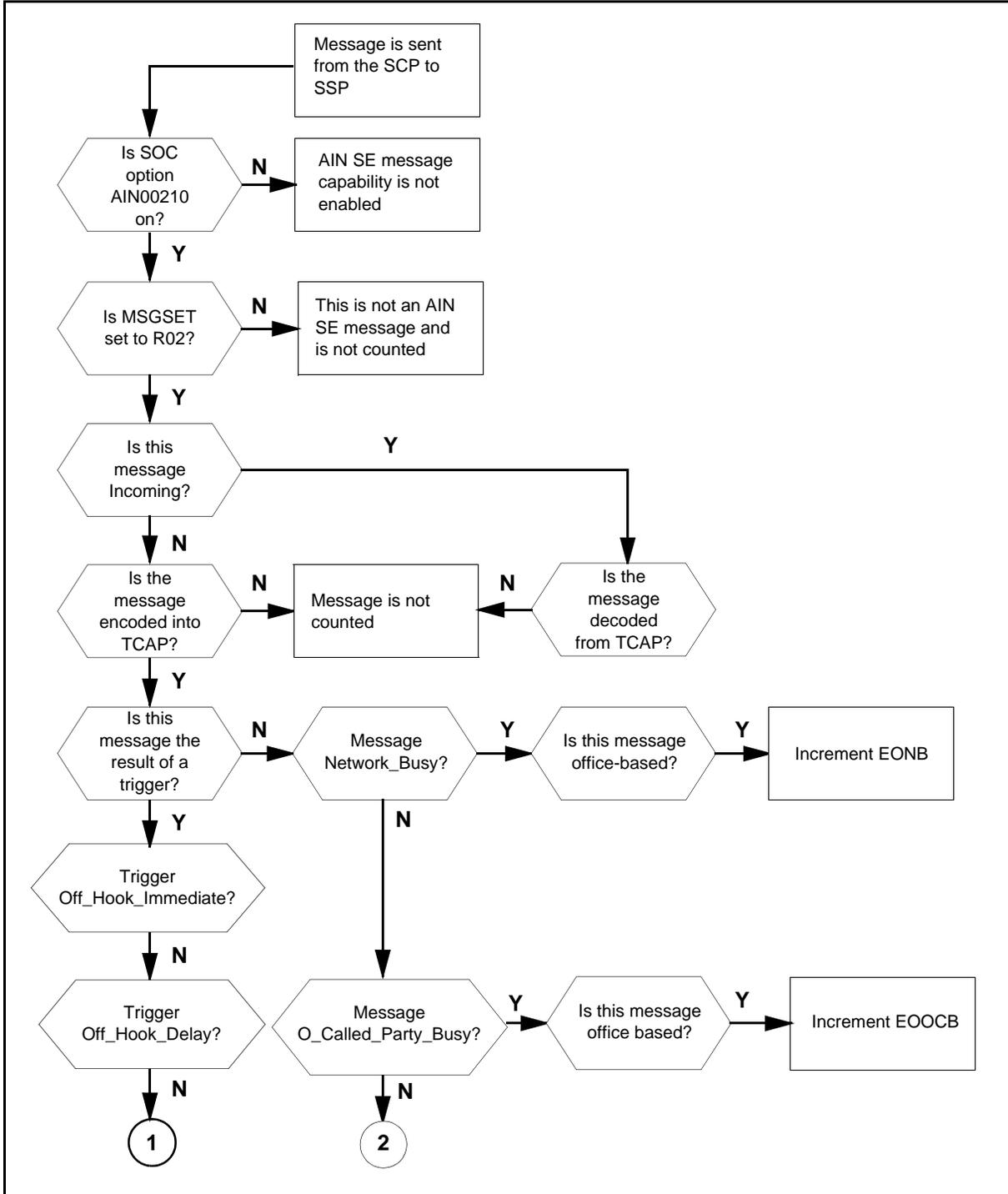
## 17.5 Associated functional groups

There are no applicable associated functional groups.

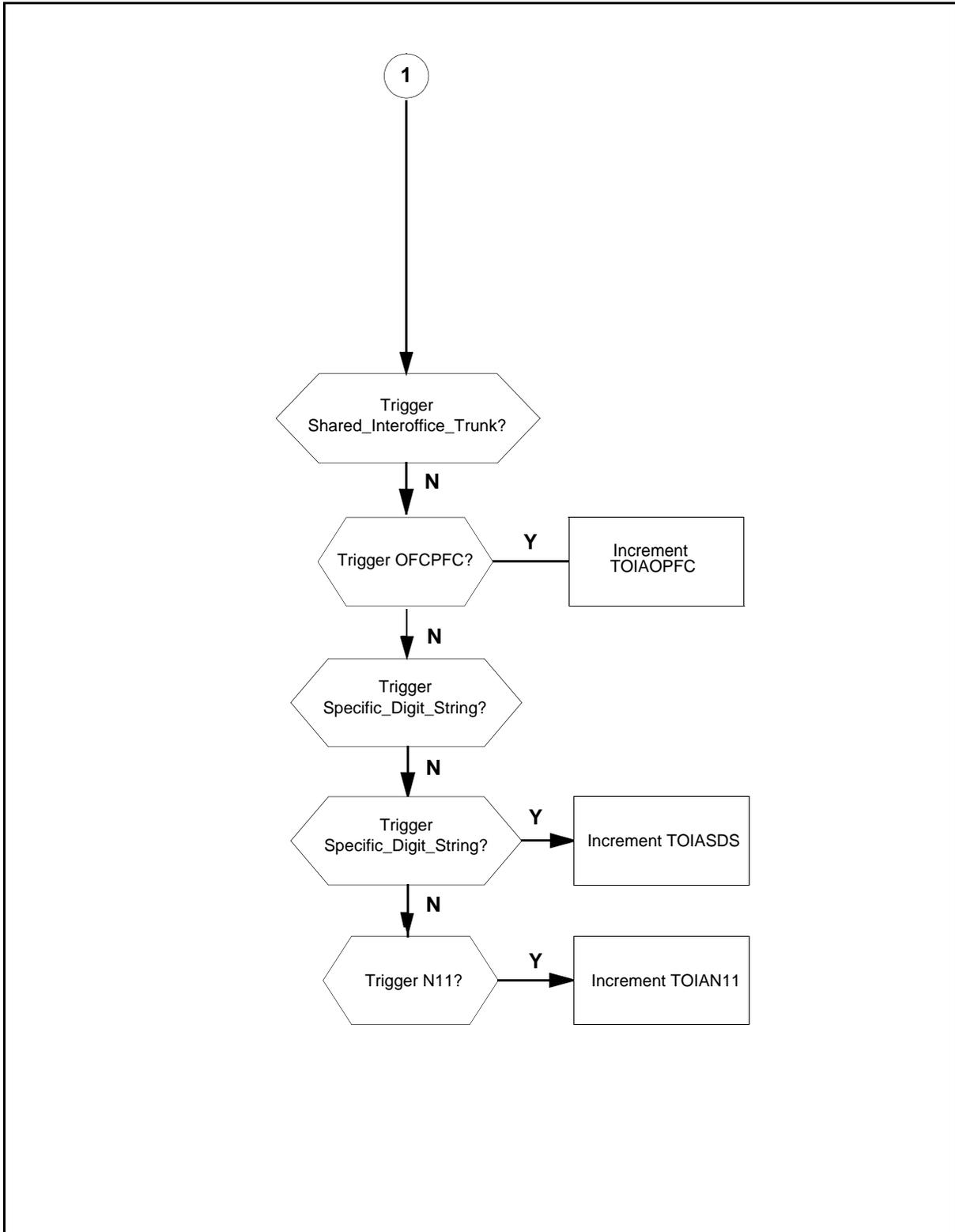
## 17.6 Associated functionality codes

There are no applicable associated functionality codes.

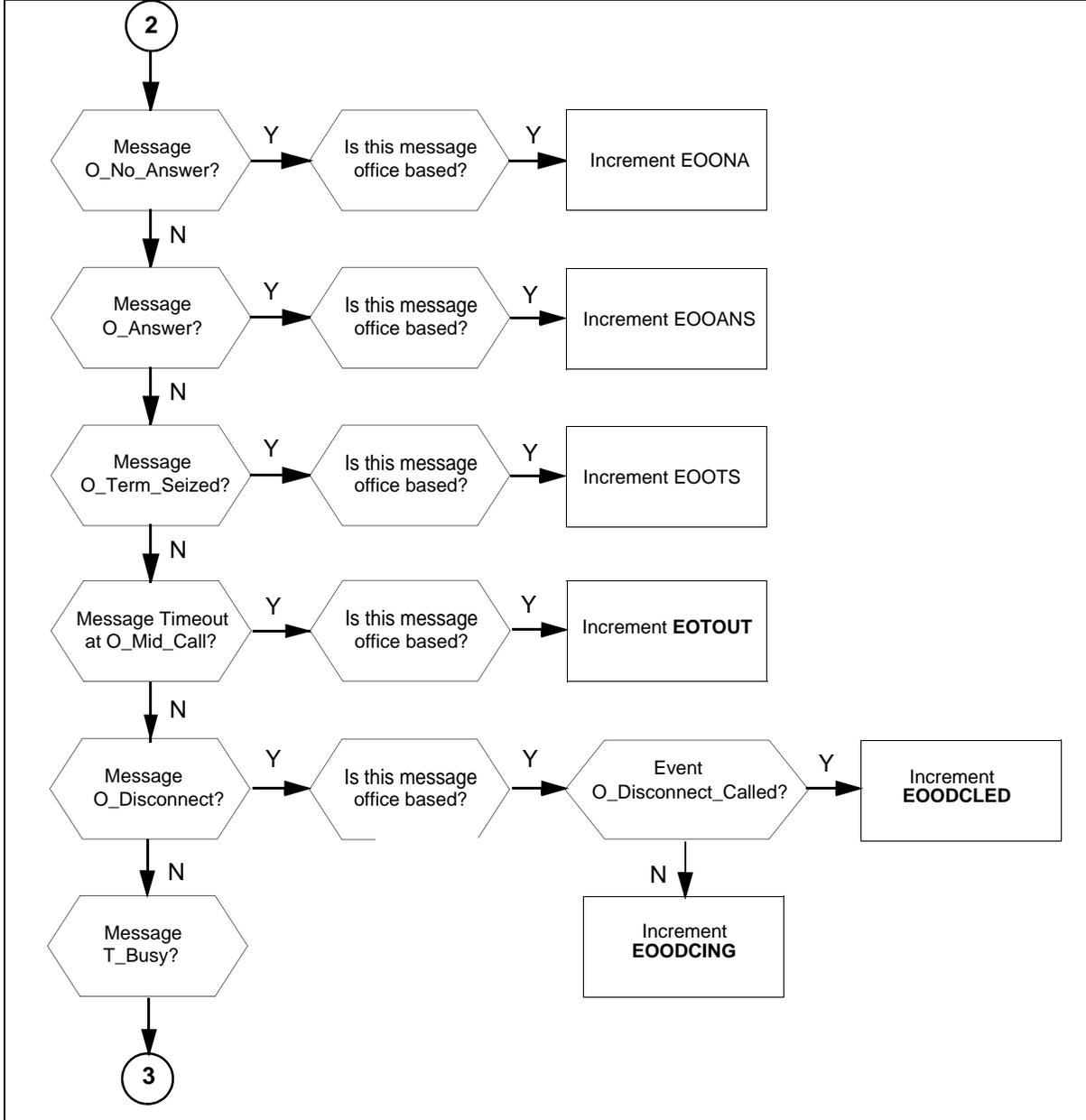
OM group AINGOFF registers



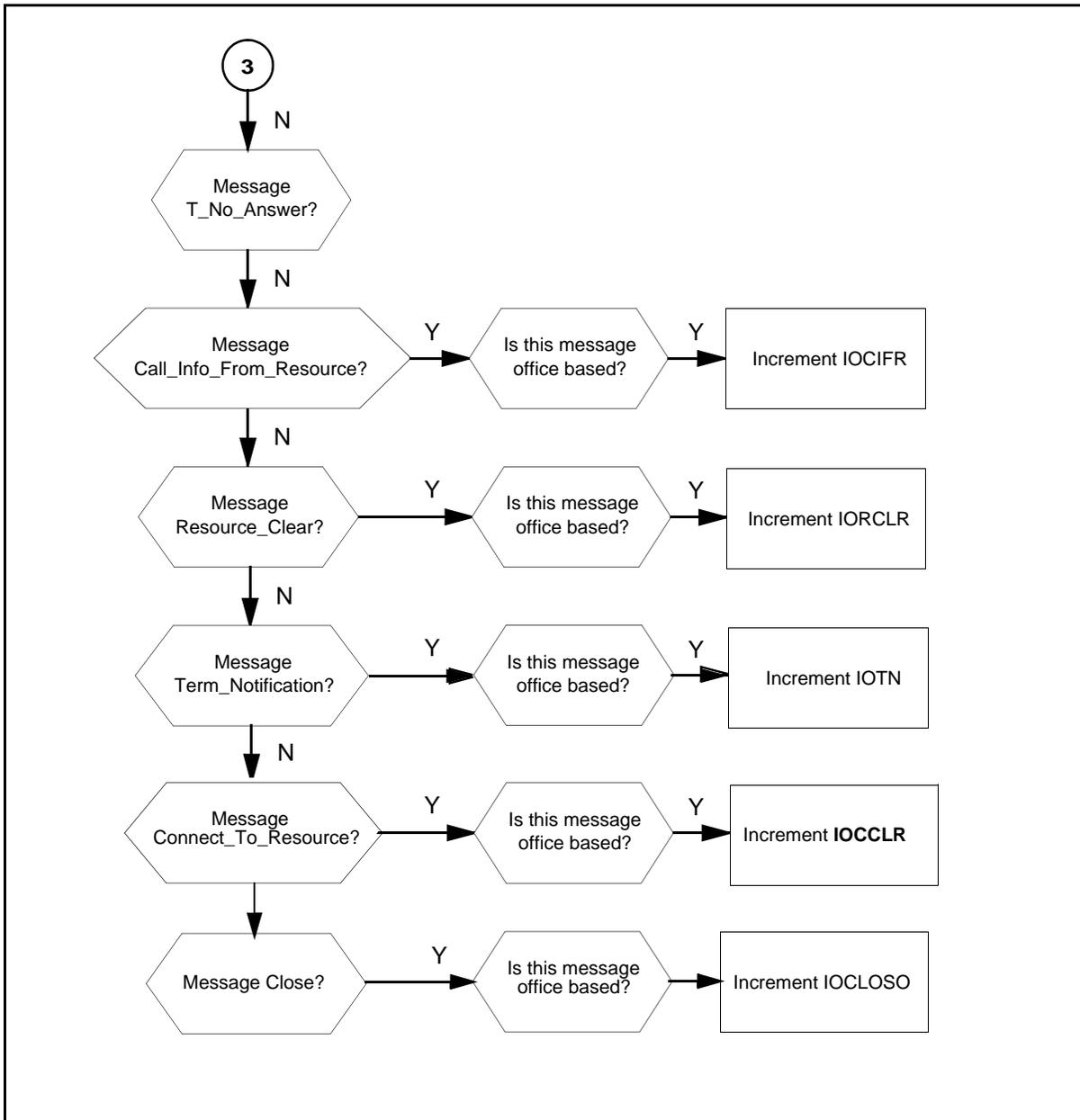
## OM group AINOGOFF registers



OM group AINGOFF registers (continued)



## OM group AINOGOFF registers



## 17.7 Register TOIASDS

TO Info\_Analyzed for Specific\_Digit\_String (TOIASDS)

Register TOIASDS counts Info\_Analyzed messages the SSP sends to the SCP. These messages are a result of a Specific\_Digit\_String trigger at the Info\_Analyzed trigger detection point

**Register TOIASDS release history**

Register TOIASDS was introduced in NA008.

**Associated registers**

There are no associated registers.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.8 Register TOIAN11**

TO Info\_Analyzed for N11 TOIAN11

Register TOIAN11 counts Info\_Analyzed messages the SSP sends to the SCP. The messages are a result of a N11 trigger at the Info\_Analyzed trigger detection point.

**Register TOIAN11 release history**

Register TOIAN11 was introduced in NA008.

**Associated registers**

There are no associated registers.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.9 Register EONB**

EO Network\_Busy (EONB)

Register (EONB) counts the number of Network\_Busy messages the SSP sends to the SCP. These messages are a result of a Network\_Busy event request.

**Register EONB release history**

Register EONB was introduced in NA008.

**Associated registers**

Register ESNB counts Network\_Busy messages the SSP sends to the SCP. The messages are a result of a Network\_Busy event request.

The validation formulas for associated registers follow:

- AINOGSCUB register ESNB + AINOGOFF registers EONB + TSNBAFR = total Network\_Busy messages
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + AINOGSUB registers ESNB + ESOANS + ESONA + ESOCB + ESTBSY + ESTNA = total Service Enablers event detection point (EDP) messages

### **Associated logs**

There are no associated logs.

### **Extension registers**

There are no extension registers.

## **17.10 Register EOOCB**

EO O\_Called\_Party\_Busy (EOOCB)

Register EOOCB counts O\_Called\_Party\_Busy messages the SSP sends to the SCP. These messages are a result of an O\_Called\_Party\_Busy event request.

### **Register EOOCB release history**

Register EOOCB was introduced in NA008.

### **Associated registers**

Register ESOCB counts O\_Called\_Party\_Busy messages the SSP sends to the SCP. These messages are a result of an O\_Called\_Party\_Busy event request. AINGOSUB registers ESOCB + TSOBCB + AINOGOFF register EOOCB = total O\_Called\_Party\_Busy messages.

### **Associated logs**

There are no associated logs.

### **Extension registers**

There are no extension registers.

## **17.11 Register EOONA**

EO O\_No\_Answer (EOONA)

Register EOONA counts O\_No\_Answer messages the SSP sends to the SCP. These messages are a result of an O\_No\_Answer event request.

### **Register EOONA release history**

Register EOONA was introduced in NA008.

**Associated registers**

Register ESONA counts O\_No\_Answer messages the SSP sends to the SCP. These messages are a result of a O\_No\_Answer event request. AINOGSUB registers  $ESONA + TSONANA + EOONA = \text{total O\_No\_Answer messages}$ .

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.12 Register EOOANS**

EO O\_Answer (EOOANS)

EO O\_Answer (EOOANS) counts O\_Answer messages sent from the SSP to the SCP. These messages are a result of an O\_Answer event request.

**Register EOOANS release history**

Register EOOANS was introduced in NA008.

**Associated registers**

Register ESOANS counts O\_Answer messages the SSP sends to the SCP. These messages are a result of a O\_Answer event request. AINOGSUB register  $ESOANS + AINOGOFF \text{ register } EOOANS = \text{total O\_Answer messages}$ .

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.13 Register EOOTs**

EO O\_Term\_Seized (EOOTS)

EO O\_Term\_Seized (EOOTS) counts O\_Term\_Seized messages sent from the SSP to the SCP as a result of an O\_Term\_Seized EDP-N being armed by an office subscribed trigger.

**Register EOOTs release history**

Register EOOTs was introduced in SN06.

**Associated registers**

Register ESOTS counts O\_Term\_Seized messages the SSP sends to the SCP as a result of an O\_Term\_Seized EDP-N being armed by a non-office subscribed trigger.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.14 Register IOTN**

IO Termination\_Notification (IOTN)

Register IOTN counts Termination\_Notification messages the SSP sends to the SCP, in a transaction that initiates by an office-based message.

**Register IOTN release history**

Register IOTN was introduced in NA008.

**Associated registers**

Register ISTN counts Termination\_Notification messages sent from the SSP to the SCP, in a transaction that a subscribed message initiates.

Register IOSN counts Send\_Notification messages received at the SSP from the SCP, in a transaction that an office-based message initiates.

Register ISSN counts Send\_Notification messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.15 Register IOCCLR**

Register IO CTR\_Clear (IOCCLR) counts CTR\_Clear messages sent from the SSP to the SCP, in a transaction an office-based message initiates IO CTR\_Clear.

**Register IOCCLR release history**

Register IOCCLR was introduced in NA017.

**Associated register**

There are associated registers.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.16 Register IOCIFR**

IO Call\_Info\_From\_Resource (IOCIFR)

Register IOCIFR counts Call\_Info\_From\_Resource messages the SSP sends to the SCP in a transaction that an office-based message initiates.

**Register IOCIFR release history**

Register IOCIFR was introduced in NA008.

**Associated registers**

Register ISCIFR counts Call\_Info\_From\_Resource messages the SSP sends to the SCP, in a transaction that a subscribed message initiates. AINOGSUB register ISCIFR + AINOGOFF register IOCIFR = total Call\_Info\_From\_Resource messages.

Register IOCITR counts Call\_Info\_To\_Resource messages received at the SSP from the SCP, in a transaction that an office-based message initiates.

Register ISCITR counts Call\_Info\_To\_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.17 Register IORCLR**

IO Resource\_Clear (IORCLR)

Register IORCLR counts Resource\_Clear messages sent from the SSP to the SCP, in a transaction an office-based message initiates IO Resource\_Clear.

**Register IORCLR release history**

Register IORCLR was introduced by NA008.

**Associated registers**

Register ISRCLR counts Resource\_Clear messages sent from the SSP to the SCP, in a transaction that initiates by a subscribed message. AINOGSUB register  $\text{ISRCLR} + \text{AINOGOFF}$  register IORCLR = total Resource\_Clear messages.

Register IOSTR counts Send\_to\_Resource messages received at the SSP from the SCP, in a transaction that an office-based message initiates.

Register IOCRE counts Cancel\_Resource\_Event messages received at the SSP from the SCP, in a transaction that an office-based message initiates.

Register ISSTR counts Send\_To\_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

Register ISCRE counts Cancel\_Resource\_Event messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

**17.18 Register IOCLOSO**

IO Close IOCLOSO

Register IOCLOSO counts Close messages the SSP sends to the SCP, in a transaction that an office-based message initiates.

**Register IOCLOSO release history**

Register IOCLOSO was introduced in NA008.

**Associated registers**

Register ISCLOSO counts Close messages the SSP sends to the SCP, in a transaction that a subscribed message initiated. AINOGSUB register  $\text{ISCLOSO} + \text{AINICOFF}$  register IOCLOSI + AINICSUB register  $\text{ISCLOSI} + \text{AINOGOFF}$  register IOCLOSO = total closed messages.

**Associated logs**

There are no associated logs.

**Extension registers**

There are no extension registers.

## 17.19 Register EOODCING

Register EOODCING counts the number of O\_Disconnect\_Calling Requested Event messages sent from the SSP to the SCP as a result of an O\_Disconnect Calling EDP-R being armed by an office subscribed trigger.

### Register EOODCING release history

Register EOODCING is introduced in NA017.

### Associated registers

Register ESODCING counts the number of O\_Disconnect\_Calling event messages as a result of an O\_Disconnect Calling EDP-R being armed by an individual subscribed trigger.

These messages are a result of an O\_Disconnect\_calling event request. AINOGSUB registers  $ESODCING + EOODCING =$  Total number of O\_Disconnect Calling event requests sent to the SCP.

### Associated logs

There are no associated logs.

### 17.19.1 Extension registers

There are no extension registers.

## 17.20 Register EOODCLED

Register EOODCLED counts the number of O\_Disconnect\_Called Requested Event messages sent from the SSP to the SCP as a result of a O\_Disconnect\_Called EDP-R being armed, by an office subscribed trigger.

### Register EOODCLED release history

Register EOODCLED is introduced in NA017.

### Associated registers

Register ESODCLED counts the number of O\_Disconnect\_Called event messages as a result of an O\_Disconnect Calling EDP-R being armed by an individual subscriber.

These messages are a result of a O\_Disconnect \_Calling event request. AINOGSUB registers  $ESODCLED + EOODCLED =$  Total number of O\_Disconnect\_Called event requests sent to the SCP.

### Associated logs

There are no associated logs.

### Extension registers

There are no extension registers.

## 17.21 Register EOTOUT

Officebased TimeOUT (EOTOUT)

Officebased TimeOUT (EOTOUT) counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of an O\_Mid\_Call Timeout EDP-R being armed by an office subscribed trigger.

### Register EOTOUT release history

Register EOOANS was introduced in NA017.

### Associated registers

There are no associated registers.

### Associated logs

There are no associated logs.

### Extension registers

There are no extension registers.

## 17.22 Release history

### SN07 (DMS)

The register EOOTTS was added to the flowchart by activity Q00765666.

### SN06 (DMS)

Register EOOTTS added. Documentation amended at SN07 (DMS) release for CR Q00527425-04.

### NA017

The registers (EOTOUT, EODCLED, and EOODCING) were added to the AINOGOFF, (59037100, originally 59028609 and 59028631). Also, the register (IOCCLR) was added to OM group AINOGOFF, (59037140).

### NA008

OM group AINOGOFF was introduced.



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## 18 OM group AINOGSUB

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### 18.1 OM description

The OM group Advanced intelligent networks outgoing subscription-based (AINOGSUB) counts AIN Service Enablers subscription-based messages that the service switching point (SSP) sends to the service control point (SCP). This OM group monitors the outgoing traffic to the SCP.

The SSP can send messages that are the result of more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. An OM register increments when the system sends or receives a message that corresponds with the register. The system sends a message correctly when the system encodes the message into the transaction capability application part (TCAP) protocol. The system receives a message when the system decodes the message from the TCAP protocol.

The AIN messaging system performs several stages of error checks to decode a TCAP message. The system decodes the message parameters and counts the messages. The system counts the message when errors are present in the message parameters. The system does not count a message when the system detects an error in the TCAP package or component.

Types of errors in the TCAP package or component follow:

- All fatal protocol errors
- Errors as a result of a bad group of messages, packages or component types
- Invalid response message
- Bad correlation identifiers
- Duplicated messages

OM group AINOGSUB contains registers that count call-related, outgoing, subscribed, Service Enablers messages. The registers count messages entered as R02 in tables TRIGDIG, TRIGINFO, and TRIGITM.

Triggers that are subscribed to by line or group follow:

- Automatic flexible routing (AFR)
- Channel\_Setup PRI
- Specified\_Carrier
- One\_Plus\_Prefix
- International
- Operator\_Services
- Customized\_Dialing\_Plan
- Off-Hook\_Immediate
- Off-Hook\_Delay
- Public\_Feature\_Code
- Shared\_Interoffice\_Trunk
- Specific\_Feature\_Code
- O\_Called\_Party\_Busy
- O\_No\_Answer
- Termination\_Attempt
- T\_Busy
- T\_No\_Answer

**Note:** Triggers: AFR, One\_Plus\_Prefix, Operator\_Services, Specified\_Carrier, and International can be office-based or subscribed. All messages sent as a result of this trigger count as subscribed.

## Registers

OM group AINOGSUB registers display on the MAP terminal as follows:

TSOAOHI	TSICOH	TSICSIT	TSIAPFC
TSIASFC	TSIACDP	TSNBAFR	ESNB
TSOCBCB	ESOCB	TSOANA	ESONA
ESOANS	TSTATTA	ESTBSY	ESTNA
ISCI	ISRCLR	ISCLOSO	ISTN
TSTBSY	TSTNA	ESTANS	TSICPRIB
TSIA1PLS	TSIASPCR	TSIAINT	TSIAOPSV
TSTRSA	<b>ESODCLED</b>	<b>ESODCING</b>	<b>ESOMTOUT</b>

## 18.2 Group structure

OM group AINOGSUB provides one tuple per office.

**Key field:**

There is no Key field

**Info field:**

There is no Info field

## 18.3 Related OM groups

Related OM groups that provide message counts for AIN Service Enablers follow:

- AIN outgoing office-based (AINOGOFF) counts AIN Service Enablers office-based messages that the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages that the (SCP) sends to the (SSP). This OM group monitors the incoming traffic to the SSP.
- AIN incoming subscription-based (AINICSUB) counts the AIN Service Enablers subscription-based messages that the SCP sends to the SSP. This OM group monitors the incoming subscription traffic to the SSP.
- AIN non-call-related (AINNCR) counts the AIN messages that pass between the SSP and SSP on a non-call-related basis.
- Advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. The OM group AIN counts messages entered as R01 in tables TRIGDIG or TRIGINFO.
- AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors AIN R0.1 queries ACG blocks, ACG control list overflows, and changes made to the ACG control lists.
- The OM group AIN outgoing subscription-based 2 (AINOGSB2) also counts the AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors outgoing traffic to the SCP.

Related OM group validation formulas follow:

- total of AINOGSUB group + total of AINOGOFF group = total outgoing call-related Service Enablers messages
- AINOGOFF registers TOIASDS + TOIAN11 + TOIAOPFC + AINOGSUB registers TSIAPFC + TSIASFC + TSIACDP + TSNBAFR +

$TSOCBCB + TSONANA + TSOAOHI + TSICOHD + TSICSIT =$  total originating basic call model (BCM) Service Enablers trigger detection point (TDP) messages

- $AINOGOFF$  registers  $EONB + EOONA + EOOANS + EOOCB +$   $AINOGSUB$  registers  $ESNB + ESONA + ESOANS + ESOCB + ESTANS + ESTBSY + ESTNA =$  total Service Enablers event detection point (EDP) messages
- total of  $AINOGSUB$  group + total of  $AINICSUB$  group + total of  $AINICOFF$  group + total of  $AINOGOFF$  group = total call-related messages
- total of  $AINOGSUB$  group + total of  $AINOGOFF$  group +  $AINNCR$  registers  $NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP =$  total outgoing messages
- $AINOGOFF$  registers  $TOIASDS + TOIAN11 + TOIAOPFC +$   $AINOGSUB$  registers  $TSIAPFC + TSIASFC + TSIACDP =$  total Info\_Analyzed messages
- $AINOGOFF$  register  $EONB + AINOGSUB$  registers  $ESNB + TSNBAFR =$  total Network\_Busy messages
- $AINOGSUB$  registers  $TSICOHD + TSICSIT + TSICPRIB =$  total Collect\_Information messages
- $AINOGSUB$  registers  $TSTATTA + TSTBSY + TSTNA =$  total terminating basic call model (BCM) AIN Service Enablers trigger detection point (TDP) messages
- $AINOGOFF$  register  $EONB + AINOGSUB$  registers  $ESNB + TSNBAFR =$  total Network\_Busy messages

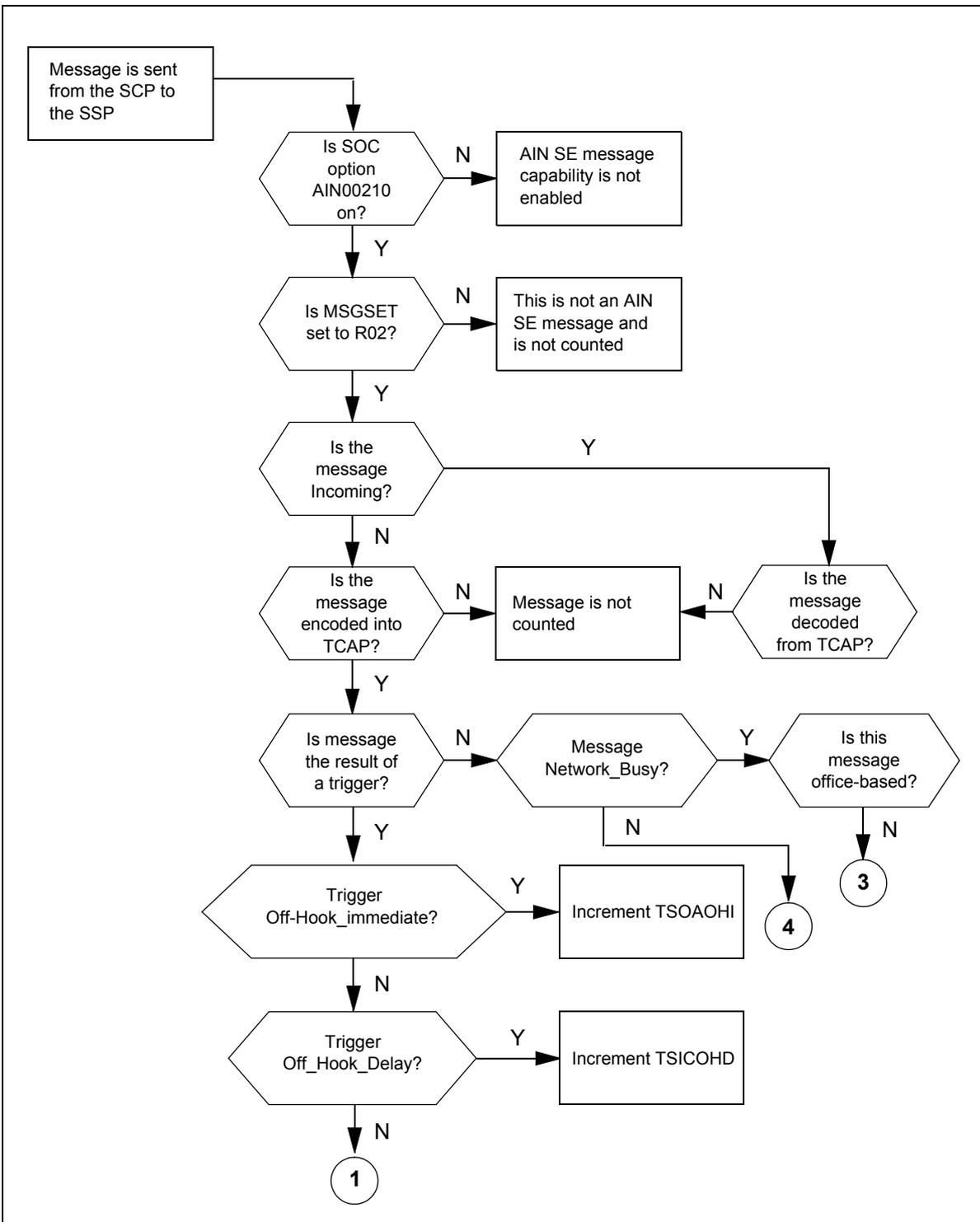
## 18.4 Related functional groups

There are no related functional groups.

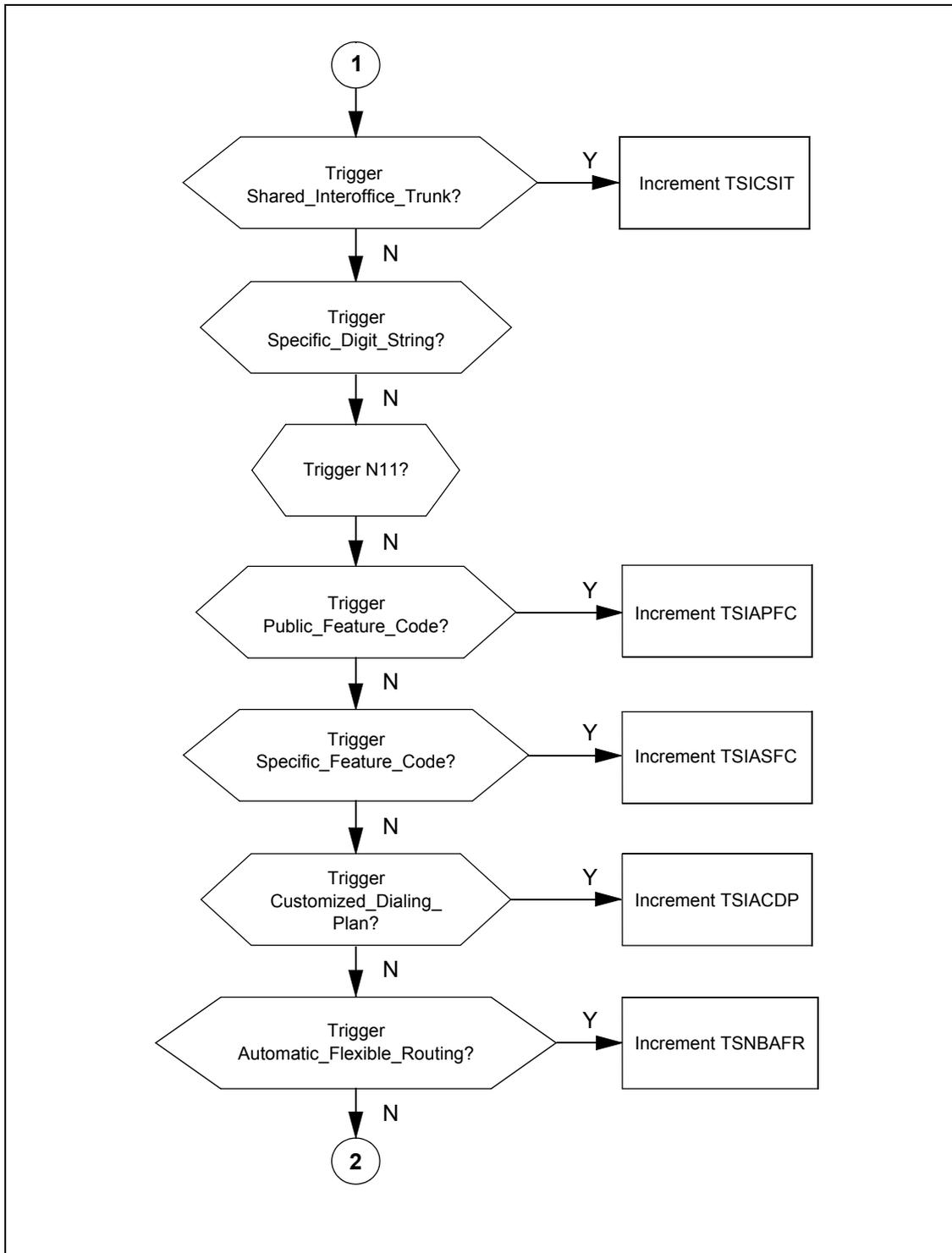
## Related functionality codes

There are no related functionality codes.

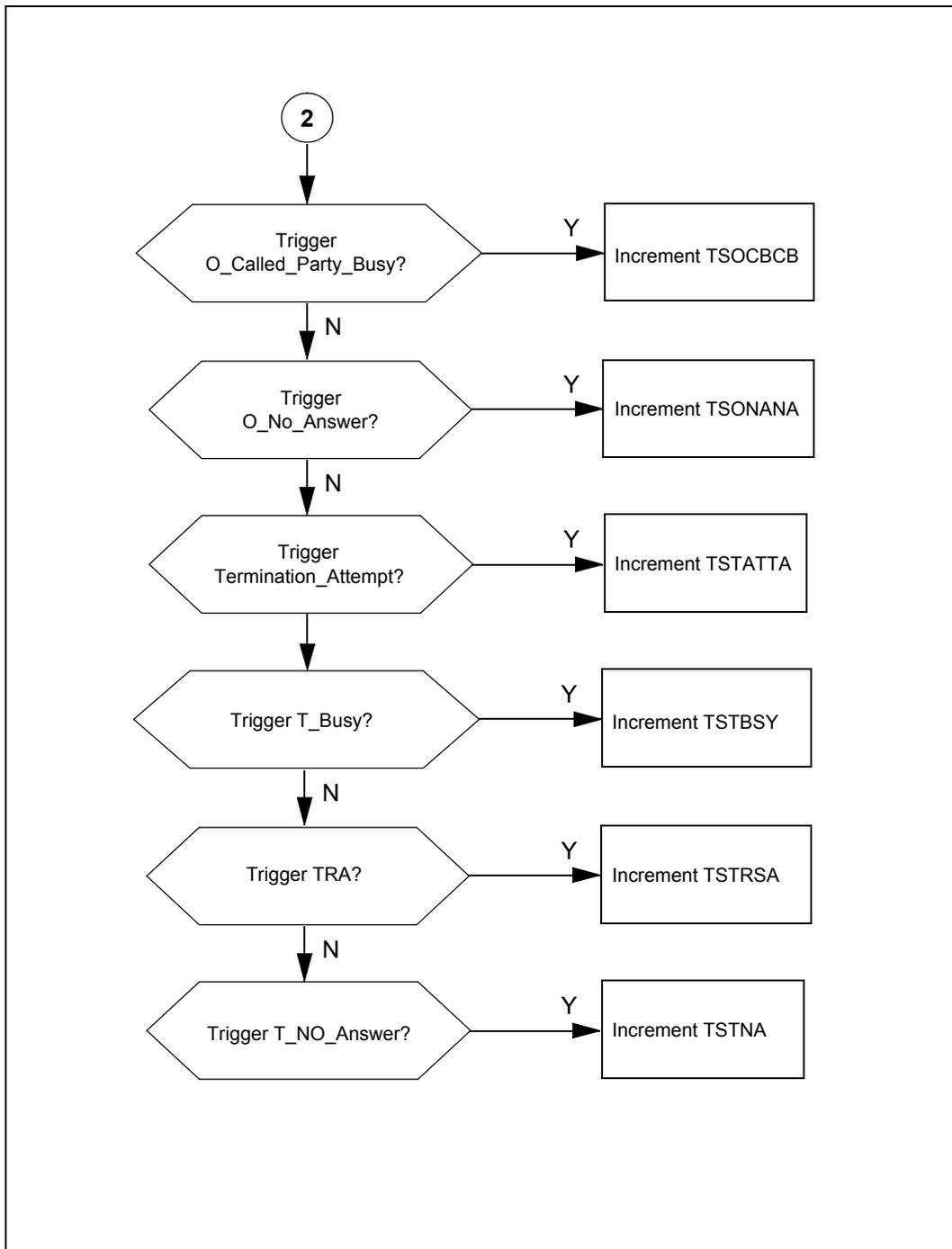
OM group AINOGSUB registers (continued)



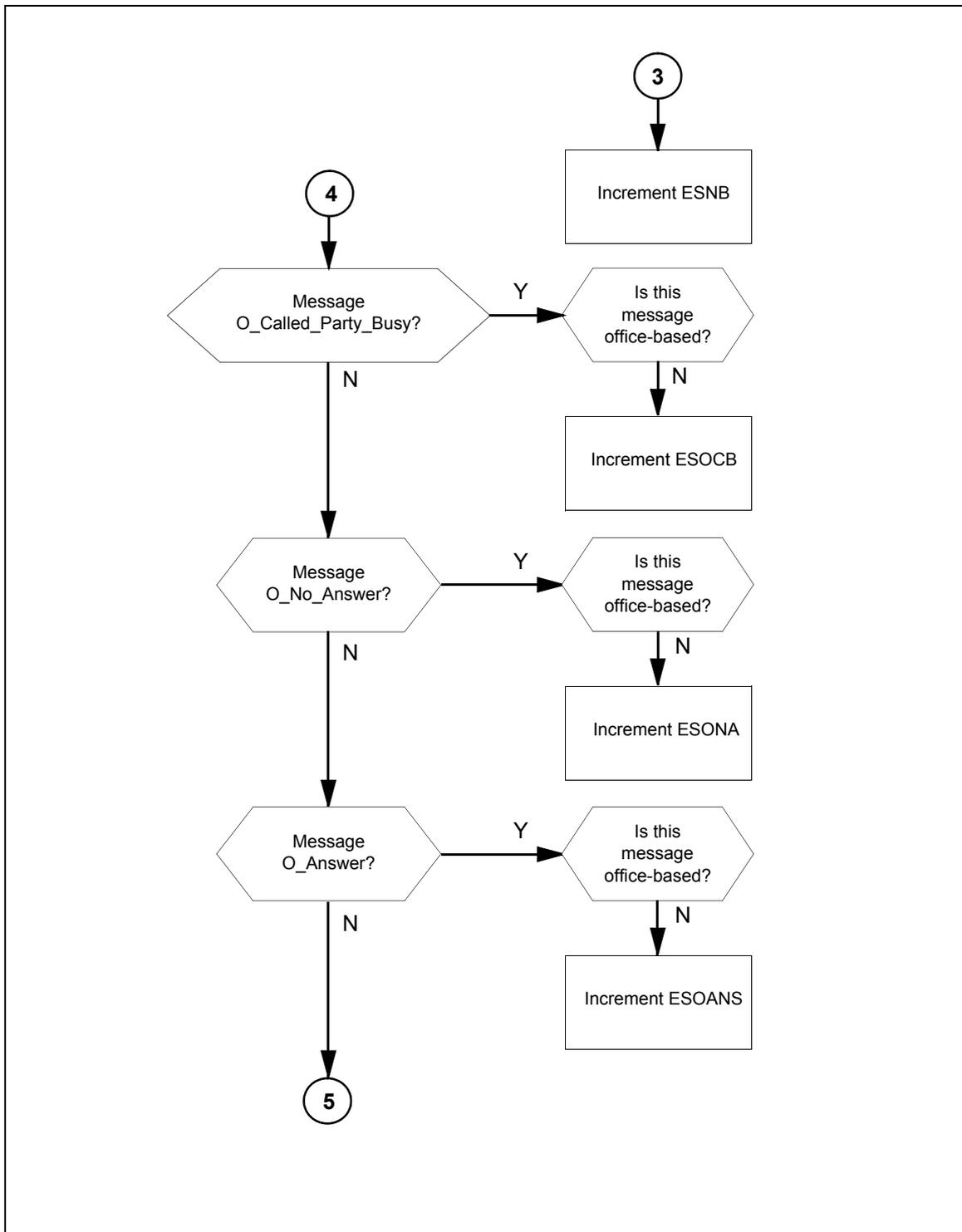
OM group AINOGSUB registers (continued)



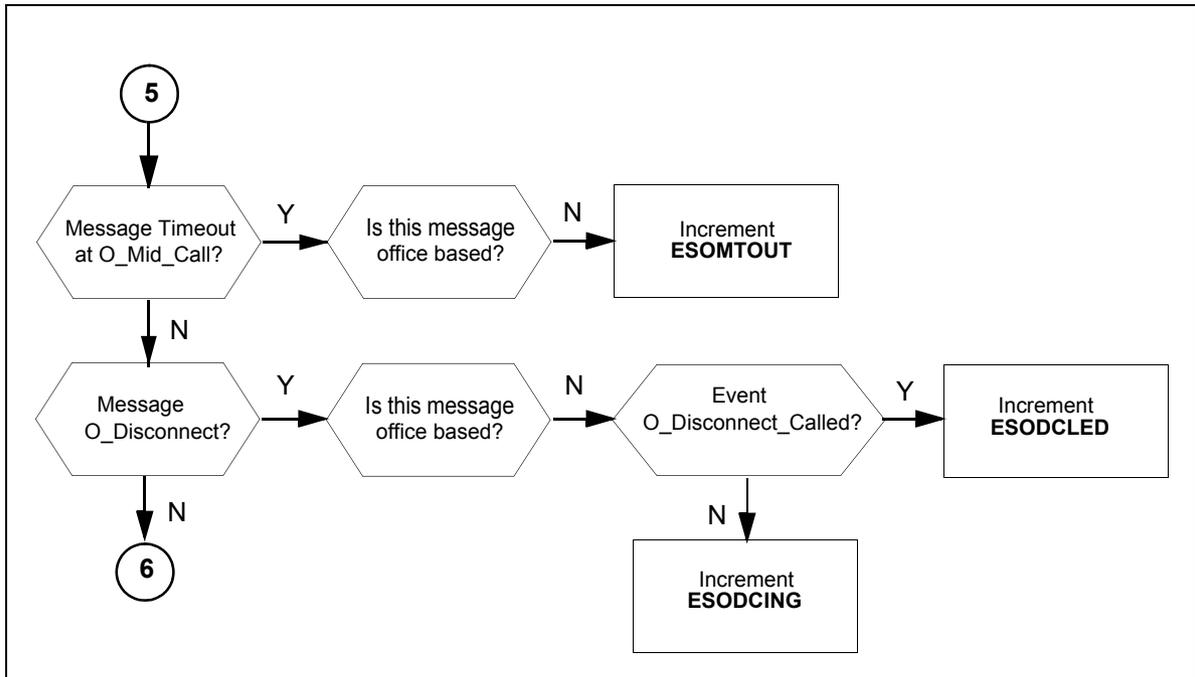
OM group AINOCSUB registers (continued)



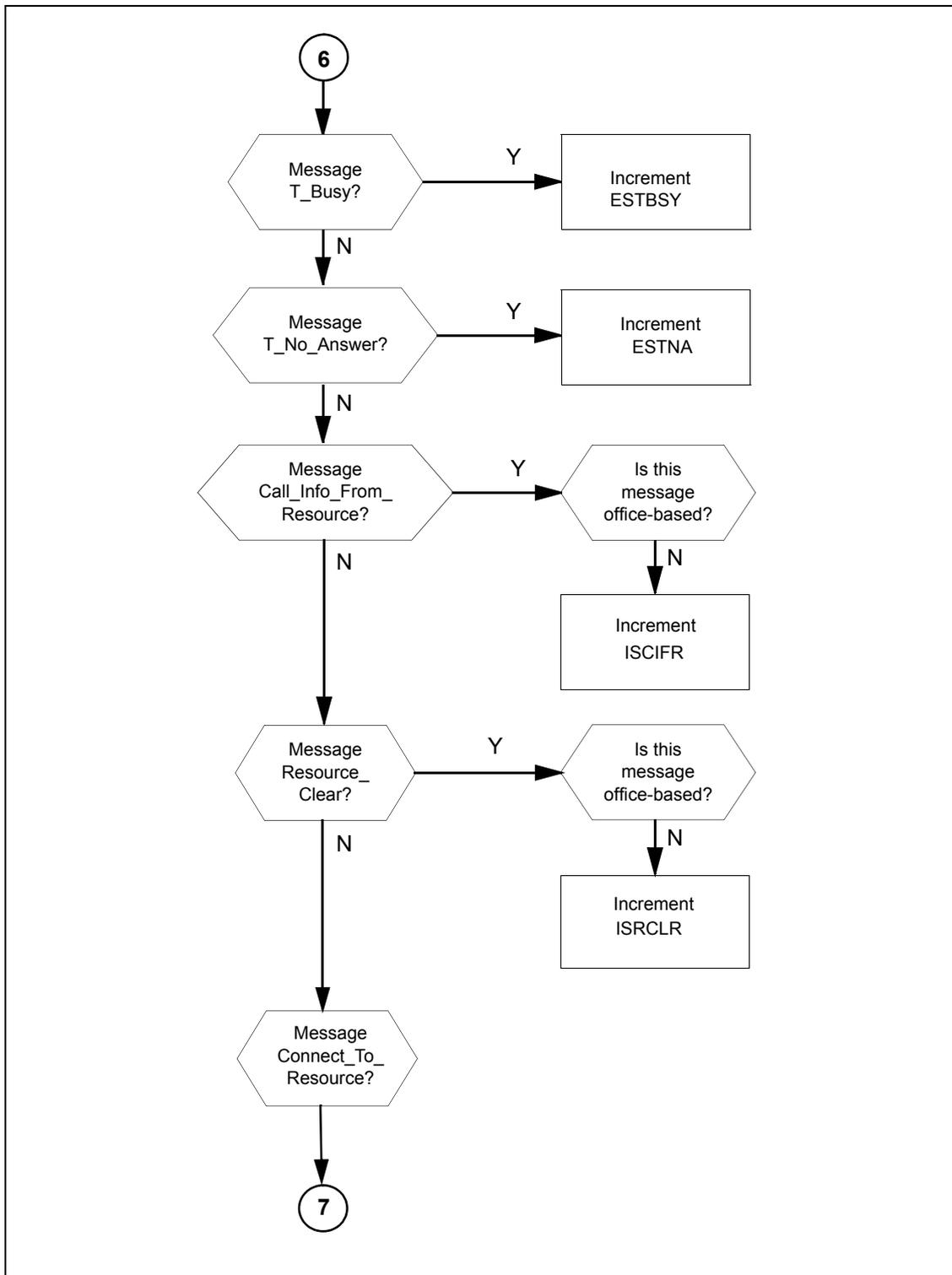
OM group AINOGSUB registers (continued)



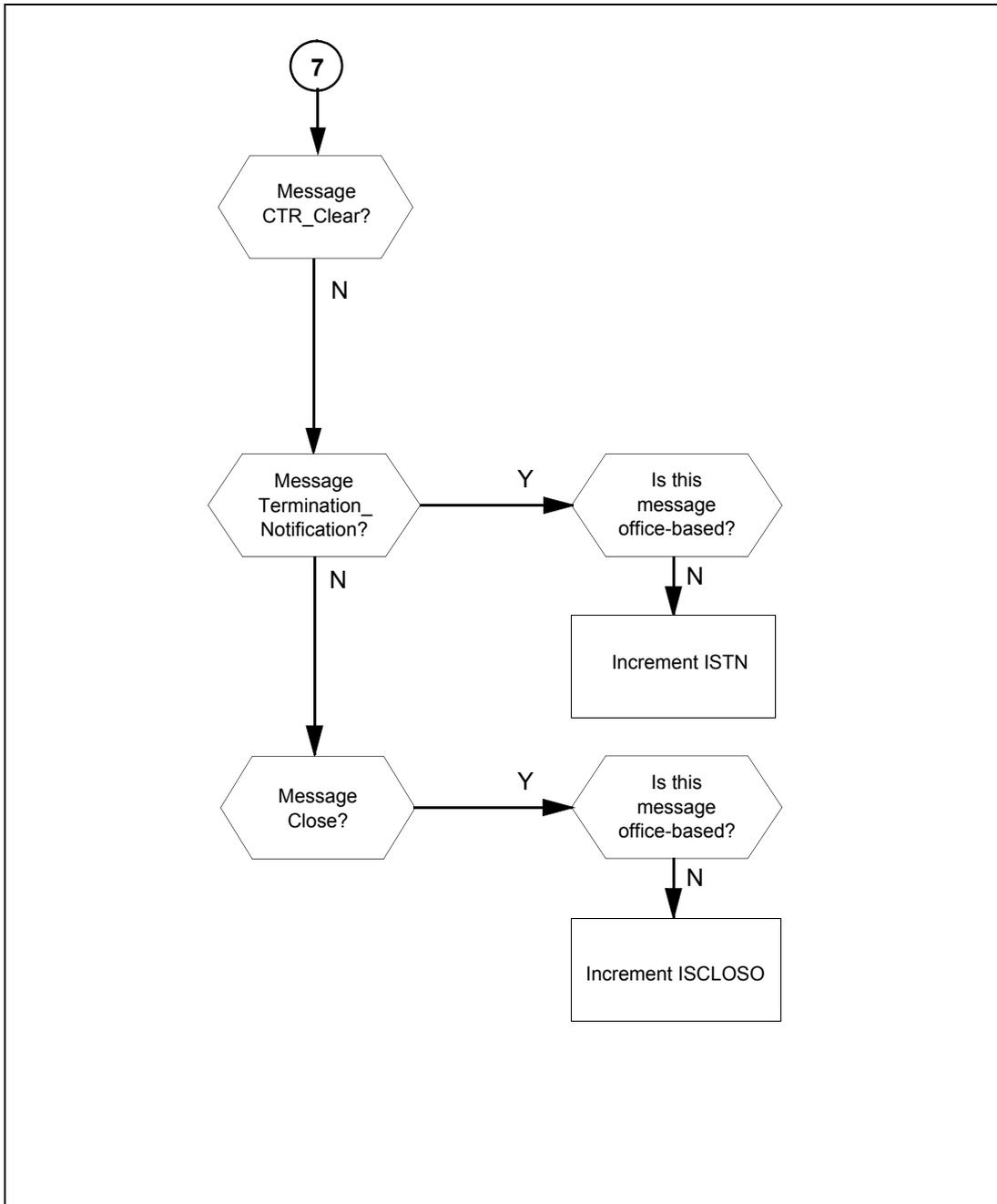
OM group AINOGSUB registers (continued)



OM group AINOGSUB registers (continued)



OM group AINOGOFF registers (end) (continued)



## 18.5 Register TSOAOHI

TS Origination\_Attempt at the Off-Hook\_Immediate (TSOAOHI)

The TSOAOHI register counts Origination\_Attempt messages that the SSP sends to the SCP, as a result of an Off-Hook\_Immediate trigger at the Origination\_Attempt trigger detection point (TDP).

### 18.5.1 Register TSOAOHI release history

The NA008 product release introduced the TSOAOHI register.

### 18.5.2 Related registers

There are no related registers.

### 18.5.3 Related logs

There are no related logs.

### 18.5.4 Extension registers

There are no extension registers.

## 18.6 Register TSICOHD

TS Info\_Collected message for the Off-Hook\_Delay (TSICOHD)

The TSICOHD register counts Info\_Collected messages that the SSP sends to the SCP, as a result of an Off-Hook\_Delay trigger.

### 18.6.1 Register TSICOHD release history

The NA008 product release introduced the TSICOHD register.

### 18.6.2 Related registers

There are no related registers.

### 18.6.3 Related logs

There are no related logs.

### 18.6.4 Extension registers

There are no extension registers.

## 18.7 Register TSICSIT

TS Info\_Collected message for the Shared\_Interoffice\_Trunk (TSICSIT)

The TSICSIT register counts Info\_Collected messages that the SSP sends to the SCP, as a result of an encounter with trigger Shared\_Interoffice\_Trunk at the Info\_Collected TDP.

**18.7.1 Register TSICSIT release history**

The NA008 product release introduced the TSICSIT register.

**18.7.2 Related registers**

There are no related registers.

**18.7.3 Related logs**

There are no related logs.

**18.7.4 Extension registers**

There are no extension registers.

**18.8 Register TSIAPFC**

TS Info\_Analyze message for the Public\_Feature\_Code (TSIAPFC)

The TSIAPFC register counts Info\_Analyzed messages that the SSP sends to the SCP, as a result of a Public\_Feature\_Code trigger at the Info\_Analyzed TDP.

**18.8.1 Register TSIAPFC release history**

The NA008 product release introduced the TSIAPFC register.

**18.8.2 Related registers**

There are no related registers.

**18.8.3 Related logs**

There are no related logs.

**18.8.4 Extension registers**

There are no extension registers.

**18.9 Register TSIASFC**

TS Info\_Analyze message for the Specific\_Feature\_Code (TSIASFC)

The TSIASFC register counts Info\_Analyzed messages that the SSP sends to the SCP, as a result of a Specific\_Feature\_Code trigger at the Info\_Analyzed TDP.

**18.9.1 Register TSIASFC release history**

The NA008 product release introduced the TSIASFC register.

**18.9.2 Related registers**

There are no related registers.

### **18.9.3 Related logs**

There are no related logs.

### **18.9.4 Extension registers**

There are no extension registers.

## **18.10 Register TSIACDP**

TS Info\_Analyze message for the Customized\_Dialing\_Plan (TSIACDP)

The TSIACDP register counts Info\_Analyzed messages that the SSP sends to the SCP, as a result of a Customized\_Dialing\_Plan trigger at the Info\_Analyzed TDP.

### **18.10.1 Register TSIACDP release history**

The NA008 product release introduced the TSIACDP register.

### **18.10.2 Related registers**

There are no related registers.

### **18.10.3 Related logs**

There are no related logs.

### **18.10.4 Extension registers**

There are no extension registers.

## **18.11 Register TSNBAFR**

TS Network\_Busy message for the AFR (TSNBAFR)

The TSNBAFR register counts Network\_Busy messages that the SSP sends to the SCP, as a result of an automatic flexible routing (AFR) trigger at the Network\_Busy TDP.

### **18.11.1 Register TSNBAFR release history**

The NA008 product release introduced the TSNBAFR register.

### **18.11.2 Related registers**

There are no related registers.

### **18.11.3 Related logs**

There are no related logs.

### **18.11.4 Extension registers**

There are no extension registers.

## 18.12 Register ESNB

ES Network\_Busy (ESNB)

The ESNB register counts Network\_Busy messages that the SSP sends to the SCP, as a result of a Network\_Busy event request.

### 18.12.1 Register ESNB release history

The NA008 product release introduced the ESNB register.

### 18.12.2 Related registers

The EONB register counts the number of Network\_Busy messages that the SSP sends to the SCP, as a result of a Network\_Busy event request.

AINOGOFF register EONB + AINOGSUB registers ESNB + TSNBAFR = total Network\_Busy messages.

### 18.12.3 Related logs

There are no related logs.

### 18.12.4 Extension registers

There are no extension registers.

## 18.13 Register TSOCBCB

TS O\_Called\_Party\_Busy for the O\_Called\_Party\_Busy (TSOCBCB)

The TSOCBCB register counts O\_Called\_Party\_Busy messages that the SSP sends to the SCP, as a result of an O\_Called\_Party\_Busy trigger. When OTS Screening is active the system does not peg this register.

### 18.13.1 Register TSOCBCB release history

The NA008 product release introduced the TSOCBCB register.

### 18.13.2 Related registers

There are no related registers.

### 18.13.3 Related logs

There are no related logs.

### 18.13.4 Extension registers

There are no extension registers.

## 18.14 Register ESOCB

ES O\_Called\_Party\_Busy message for the O\_Called\_Party\_Busy (ESOCB)

The ESOCB register counts the number of O\_Called\_Party\_Busy messages sent from the SSP to the SCP as a result of a O\_Called\_Party\_Busy EDP-R.

#### **18.14.1 Register ESOCB release history**

The NA008 product release introduced the ESOCB register.

#### **18.14.2 Related registers**

The EEOCB register counts O\_Called\_Party\_Busy messages sent from the SSP to the SCP, as a result of an O\_Called\_Party\_Busy event request.

AINOGOFF register EEOCB + AINOGSUB registers ESOCB + TSOCBCB = total O\_Called\_Party\_Busy messages.

#### **18.14.3 Related logs**

There are no related logs.

#### **18.14.4 Extension registers**

There are no extension registers.

### **18.15 Register TSONANA**

TS O\_No\_Answer message for the O\_No\_Answer (TSONANA)

The TSONANA register counts the number of O\_No\_Answer messages sent from the SSP to the SCP as a result of an O\_No\_Answer trigger. When OTS Screening is active the system does not peg this register.

#### **18.15.1 Register TSONANA release history**

The NA008 product release introduced the TSONANA register.

#### **18.15.2 Related registers**

There are no related registers.

#### **18.15.3 Related logs**

There are no related logs.

#### **18.15.4 Extension registers**

There are no extension registers.

### **18.16 Register ESODCING**

Register ESODCING counts the number of O\_Disconnect\_Calling Requested Event messages sent from the SSP to the SCP as a result of an O\_Disconnect\_Calling EDP-R being armed by a non-office subscribed trigger.

#### **18.16.1 Register ESODCING release history**

Product release NA017 introduces register ESODCING.

**18.16.2 Associated registers**

Register EOODCING counts the number of O\_Disconnect\_Calling Requested Event messages sent from the SSP to the SCP as a result of an O\_Disconnect Calling EDP-R being armed by a non-office subscribed trigger.

**18.16.3 Associated logs**

There are no associated logs.

**18.16.4 Extension registers**

None.

**18.17 Register ESODCLED**

Register ESODCLED counts the number of O\_Disconnect\_Called Requested Event messages sent from the SSP to the SCP as a result of an O\_Disconnect\_Called EDP-R being armed by a non-office subscribed trigger.

**18.17.1 Register ESODCLED release history**

Product release NA017 introduces register ESODCLED.

**18.17.2 Associated registers**

Register EOODCLED counts the number of O\_Disconnect\_Called Requested Event messages sent from the SSP to the SCP as a result of an O\_Disconnect\_Called EDP-R being armed by a non-office subscribed trigger.

**18.17.3 Associated logs**

There are no associated logs.

**18.17.4 Extension registers**

None.

**18.18 Register ESOMTOUT**

Event Subscribed O\_Mid\_call TimeOut (ESOMTOUT)

Register ESOMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of an O\_Mid\_Call Timeout EDP-R being armed by a non-office subscribed trigger.

**18.18.1 Register ESOMTOUT release history**

Product release NA017 introduces register ESOMTOUT.

**18.18.2 Related registers**

Register ESTMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of a T\_Mid\_Call Timeout EDP-R being armed by a non-office subscribed trigger.

### **18.18.3 Related logs**

There are no related logs.

### **18.18.4 Extension registers**

There are no extension registers.

## **18.19 Register ESONA**

ES O\_No\_Answer (ESONA)

The ESONA register counts O\_No\_Answer messages that the SSP sends to the SCP, as a result of an O\_No\_Answer event request.

AINOGOFF register EOONA + AINOGSUB registers ESONA + TSONANA  
= total O\_No\_Answer messages

### **18.19.1 Register ESONA release history**

The NA008 product release introduced the ESONA register.

### **18.19.2 Related registers**

The EOONA register counts O\_No\_Answer messages that the SSP sends to the SCP, as a result of an O\_No\_Answer event request.

AINOGOFF register EOONA + AINOGSUB registers ESONA + TSONANA  
= total O\_No\_Answer messages.

### **18.19.3 Related logs**

There are no related logs.

### **18.19.4 Extension registers**

There are no extension registers.

## **18.20 Register ESOANS**

ES O\_Answer (ESOANS)

The ESOANS register counts O\_Answer messages the SSP sends to the SCP, as a result of an O\_Answer event request.

AINOGOFF register EOOANS + AINOGSUB register ESOANS = total  
O\_Answer messages

### **18.20.1 Register ESOANS release history**

The NA008 product release introduced the ESOANS register.

**18.20.2 Related registers**

The EOOANS register counts O\_Answer messages the SSP sends to the SCP, as the result of an O\_Answer event request.

AINOGOFF register EOOANS + AINOGSUB register ESOANS = total O\_Answer messages.

**18.20.3 Related logs**

There are no related logs.

**18.20.4 Extension registers**

There are no extension registers.

**18.21 Register TSTATTA**

TS Termination\_Attempt for the Termination\_Attempt (TSTATTA)

The TSTATTA register counts Termination\_Attempt messages that the SSP sends to the SCP, as a result of a Termination\_Attempt trigger.

**18.21.1 Register TSTATTA release history**

The NA008 product release introduced the TSTATTA register.

**18.21.2 Related registers**

There are no related registers.

**18.21.3 Related logs**

There are no related logs.

**18.21.4 Extension registers**

There are no extension registers.

**18.22 Register ESTBSY**

ES T\_Busy (ESTBSY)

The ESTBSY register counts T\_Busy messages that the SSP sends to the SCP, as a result of a T\_Busy event request.

**18.22.1 Register ESTBSY release history**

The NA008 product release introduced the ESTBSY register.

**18.22.2 Related registers**

The TSTBSY register counts T\_Busy messages sent from the SSP to the SCP. T\_Busy messages indicate a line-subscribed trigger encounter with trigger T\_Busy.

AINOGSUB registers  $TSTBSY + ESTBSY =$  total number of T\_Busy messages.

### **18.22.3 Related logs**

There are no related logs.

### **18.22.4 Extension registers**

There are no extension registers.

## **Register ESTNA**

ES T\_No\_Answer (ESTNA)

The ESTNA register counts T\_No\_Answer messages that the SSP sends to the SCP, as a result of a T\_No\_Answer event request.

### **Register ESTNA release history**

The NA008 product release introduced the ESTNA register.

### **Related registers**

The TSTNA register counts T\_No\_Answer messages sent from the SSP to the SCP. T\_No\_Answer messages indicate a line-subscribed trigger encounter with the T\_No\_Answer trigger.

AINOGSUB registers  $TSTNA + ESTNA =$  total number of T\_No\_Answer messages.

### **Related logs**

There are no related logs.

### **Extension registers**

There are no extension registers.

## **Register ISCIFR**

IS Call\_Info\_From\_Resource (ISCIFR)

The ISCIFR register counts Call\_Info\_From\_Resource messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

### **Register ISCIFR release history**

The NA008 product release introduced the ISCIFR register.

### **Related registers**

The IOCIFR register counts Call\_Info\_From\_Resource messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IOCIFR + AINOGSUB register ISCIFR = total Call\_Info\_From\_Resource messages.

The IOCITR register counts Call\_Info\_To\_Resource messages the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISCITR register counts Call\_Info\_To\_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

### **Related logs**

There are no related logs.

### **Extension registers**

There are no extension registers.

## **18.23 Register ISRCLR**

IS Resource\_Clear (ISRCLR)

The ISRCLR register counts Resource\_Clear messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

### **18.23.1 Register ISRCLR release history**

The NA008 product release introduced the ISRCLR register.

### **18.23.2 Related registers**

The IORCLR register counts Resource\_Clear messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IORCLR + AINOGSUB register ISRCLR = total Resource\_Clear messages.

The IOSTR register counts Send\_to\_Resource messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISSTR register counts Send\_To\_Resource messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

The IOCRES register counts Cancel\_Resource\_Event messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISCRE register counts Cancel\_Resource\_Event messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

### **18.23.3 Related logs**

There are no related logs.

#### **18.23.4 Extension registers**

There are no extension registers.

### **18.24 Register ISCLOSO**

IS Close (ISCLOSO)

The ISCLOSO register counts Close messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

#### **18.24.1 Register ISCLOSO release history**

The NA008 product release introduced the ISCLOSO register.

#### **18.24.2 Related registers**

The IOCLOSO register counts Close messages that the SSP sends to the SCP, in a transaction that a office-based message initiates.

AINOGSUB register ISCLOSO + AINICOFF register IOCLOSI + AINICSUB register ISCLOSI + AINOGOFF register IOCLOSO = total closed messages.

#### **18.24.3 Related logs**

There are no related logs.

#### **18.24.4 Extension registers**

There are no extension registers.

### **18.25 Register ISTN**

IS Termination\_Notification (ISTN)

The ISTN register counts Termination\_Notification messages that the SSP sends to the SCP, in a transaction that a subscribed message initiates.

#### **18.25.1 Register ISTN release history**

The NA008 product release introduced the ISTN register.

#### **Related registers**

The IOTN register counts Termination\_Notification messages that the SSP sends to the SCP, in a transaction that an office-based message initiates.

AINOGOFF register IOTN + AINOGSUB register ISTN = total Termination\_Notification messages.

The IOSN register counts Send\_Notification messages that the SSP receives from the SCP, in a transaction that an office-based message initiates.

The ISSN register counts Send\_Notification messages received by the SSP from the SCP, in a transaction that a subscribed message initiates.

**Related logs**

There are no related logs.

**Extension registers**

There are no extension registers.

**18.26 Register TSTBSY**

TDP subscribed T\_Busy (TSTBSY)

The TSTBSY register counts each occurrence of a T\_Busy trigger detection point-request (TDP-R).

**Register TSTBSY release history**

The NA010 product release introduced the TSTBSY register.

**Related registers**

There are no related registers.

**Related logs**

There are no related logs.

**Extension registers**

There are no extension registers.

**18.27 Register TSTNA**

TDP subscribed T\_No\_Answer (TSTNA)

The TSTNA register counts each occurrence of a T\_No\_Answer trigger detection point-request (TDP-R).

**18.27.1 Register TSTNA release history**

The NA010 product release introduced the TSTNA register.

**18.27.2 Related registers**

There are no related registers.

**18.27.3 Related logs**

There are no related logs.

**18.27.4 Extension registers**

There are no extension registers.

## **18.28 Register ESTANS**

EDP subscribed T\_Answer (ESTANS)

The ESTANS register counts the number of times that the T\_Answer event detection point-notification (EDP-N) occurs.

### **18.28.1 Register ESTANS release history**

The NA010 product release introduced the ESTANS register.

### **18.28.2 Related registers**

There are no related registers.

### **18.28.3 Related logs**

There are no related logs.

### **18.28.4 Extension registers**

There are no extension registers.

## **18.29 Register TSICPRIB**

TDP subscribed Info\_Collected Channel\_Setup\_PRI trigger (TSICPRIB)

The TSICPRIB register counts the number of times that the Channel\_Setup\_PRI trigger occurs.

### **18.29.1 Register TSICPRIB release history**

The NA010 product release introduced the TSICPRIB register.

### **18.29.2 Related registers**

There are no related registers.

### **18.29.3 Related logs**

There are no related logs.

### **18.29.4 Extension registers**

There are no extension registers.

## **18.30 Register TSIA1PLS**

TDP subscribed Info\_Analyzed One\_Plus\_Prefix trigger (TSIA1PLS)

The TSIA1PLS register counts the number of times that the One\_Plus\_Prefix trigger occurs.

### **18.30.1 Register TSIA1PLS release history**

The NA011 product release introduced the TSIA1PLS register.

**18.30.2 Related registers**

There are no related registers.

**18.30.3 Related logs**

There are no related logs.

**18.30.4 Extension registers**

There are no extension registers.

**18.31 Register TSIASPCR**

TDP subscribed Info\_Analyzed Specified\_Carrier trigger (TSIASPCR)

The TSIASPCR register counts the number of times that the Specified\_Carrier trigger occurs.

**18.31.1 Register TSIASPCR release history**

The NA011 product release introduced the TSIASPCR register.

**18.31.2 Related registers**

There are no related registers.

**18.31.3 Related logs**

There are no related logs.

**18.31.4 Extension registers**

There are no extension registers.

**18.32 Register TSIAINT**

TDP subscribed Info\_Analyzed International trigger (TSIAINT)

The TSIAINT register counts the number of times that the International trigger occurs.

**18.32.1 Register TSIAINT release history**

The NA011 product release introduced the TSIAINT register.

**18.32.2 Related registers**

There are no related registers.

**18.32.3 Related logs**

There are no related logs.

**18.32.4 Extension registers**

There are no extension registers.

## **18.33 Register TSIAOPSV**

TDP subscribed Info\_Analyzed Operator\_Services trigger (TSIAOPSV)

The TSIAOPSV register counts the number of times that the Operator\_Services trigger occurs.

### **18.33.1 Register TSIAOPSV release history**

The NA011 product release introduced the TSIAOPSV register.

### **18.33.2 Related registers**

There are no related registers.

### **18.33.3 Related logs**

There are no related logs.

### **18.33.4 Extension registers**

There are no extension registers.

## **18.34 Release history**

### **18.34.1 NA017**

New Operational Measurement registers (ESOMTOUT, ESODCLED, and ESODCING) are defined with this activity to count the number of Timeout Requested Event and O\_Disconnect Called Requested Event messages sent from the SSP to SCP(59037100), originally (59028609 and 59028631).

### **18.34.2 NA008**

OM group AINOGSUB was introduced.

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## 19 OM group AINOGSB2

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### 19.1 OM description

OM group advanced intelligent networks outgoing subscription-based Two (AINOGSB2), counts AIN Service Enablers subscription-based messages sent by the SSP to the SCP. OM group AINOGSB2 monitors outgoing traffic to the SCP.

The SSP sends messages in response to more than one type of trigger or event. A separate OM register provides a count for each trigger and event type. OM registers increment when the system sends or receives a message that corresponds with the register. A correct message is sent when the system encodes the message into transaction capability application part (TCAP) protocol. A correct message is received when the system decodes the message from TCAP protocol.

The system performs several stages of error checks to decode a TCAP message. The system decodes message parameters and counts the messages. The system counts a message even when errors are present in the message parameters. The system does not count a message when errors are detected in the TCAP package or its components.

The following errors can be detected in a TCAP package or its components:

- fatal protocol errors
- errors resulting from a bad group of messages, packages or component types
- invalid response messages
- bad correlation identifiers
- duplicate messages

OM group AINOGSB2 contains registers that count call-related, outgoing, subscribed, Service Enablers messages. The registers count messages entered as R02 in Tables TRIGDIG, TRIGITM, or TRIGINFO.

## 19.2 Registers

The following figure lists OM group AINOGB2 registers as they appear on the MAP terminal display:

**Figure 1 Map terminal display of OM group AINOGB2 register**

ESTMTOUT	ISCCLR	TSTKTRM	ESOTS
----------	--------	---------	-------

## 19.3 Group structure

OM group AINOGB2 provides one tuple per office.

**Key field:**

There is no Key field.

**Info field:**

There is no Info field.

## 19.4 Associated OM groups

The following associated OM groups provide AIN Service Enablers message counts:

- OM group AIN outgoing office-based (AINOGOFF) counts AIN Service Enablers office-based messages the SSP sends to the SCP. This OM group monitors outgoing traffic to the SCP.
- The OM group AIN outgoing subscription-based (AINOGSUB) counts the AIN Service Enablers subscription-based messages the SSP sends to the SCP. This OM group monitors the outgoing traffic to the SCP.
- OM group AIN incoming office-based (AINICOFF) counts AIN Service Enablers office-based messages the SCP sends to the SSP. This OM group monitors incoming traffic to the SSP.
- OM group AIN incoming subscription-based (AINICSUB) counts AIN Service Enablers subscription-based messages the SCP sends to the SSP. This OM group monitors incoming subscription traffic to the SSP.
- OM group AIN non-call-related (AINNCR) counts AIN messages that pass between the SSP and SCP on a non-call-related basis. OM group advanced intelligent networks (AIN) is the platform for AIN traffic and maintenance measurements. OM group AIN counts messages entered as R01 in Tables TRIGDIG, TRIGITM, or TRIGINFO.
- OM group AIN automatic code gapping (AINACG) provides operational measurements for the automatic code gapping (ACG) feature in the SSP. This OM group monitors AIN R0.1 queries, ACG blocks, ACG control list overflows, and changes made to ACG control lists.

The following lists related validation formulas for the OM group:

- Total of AINOGSUB group + total of AINOGSB2 + total of AINOGOFF group = total outgoing call-related Service Enabler messages
- AINOGOFF registers TOIASDS + TOIAN11 + AINOGSUB registers TSIAPFC + TSIASF + TSIACDP + TSNBAFR + TSOCBCB + TSONANA + TSOAOHI + TSICOHD + TSICSIT + TSICPRIB + TSIA1PLS + TSIASPCR + TSIASINT + TSIAOPSV = total originating basic call model (BCM) Service Enablers trigger detection point (TDP) messages
- AINOGOFF registers EONB + EOONA + EOOANS + EOOCB + EOODCLED + EOODCING + EOTOUT + AINOGSUB registers ESNB + ESONA + ESOANS + ESOCB + ESTBSY + ESTNA + ESTANS + ESODCLED + ESODCING + ESOMTOUT + AINOGSB2 register ESTMTOUT = total Service Enablers event detection point (EDP) messages
- Total of AINOGSUB group + total of AINOGSB2 group + total of AINICSUB group + total of AINICOFF group + total of AINOGOFF group = total call-related messages
- Total of AINOGSUB group + total of AINOGSB2 group + total of AINOGOFF group + AINNCR registers NAOVFW + NAGCRS + NUPDAT + NMSUCC + NSREP = total outgoing messages
- AINOGOFF register EOTOUT + AINOGSUB register ESOMTOUT + AINOGSB2 ESTMTOUT = total Timeout messages

## 19.5 Associated functional groups

There are no associated functional groups.

## 19.6 Associated functionality codes

There are no associated functionality codes.

The following figure illustrates the logical flow for OM group AINOGSB2 registers.

Figure 2 OM group AINOGB2 registers

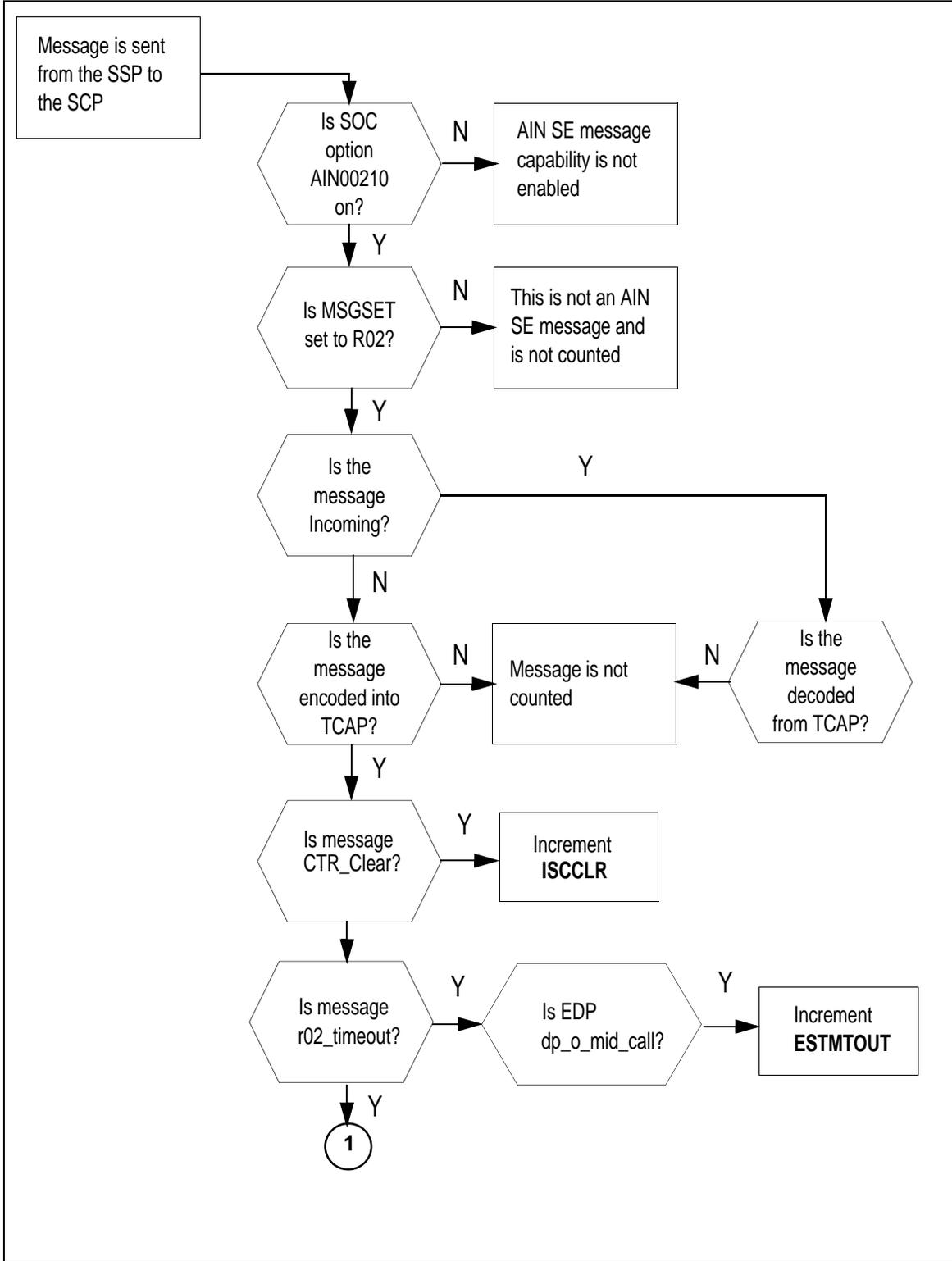
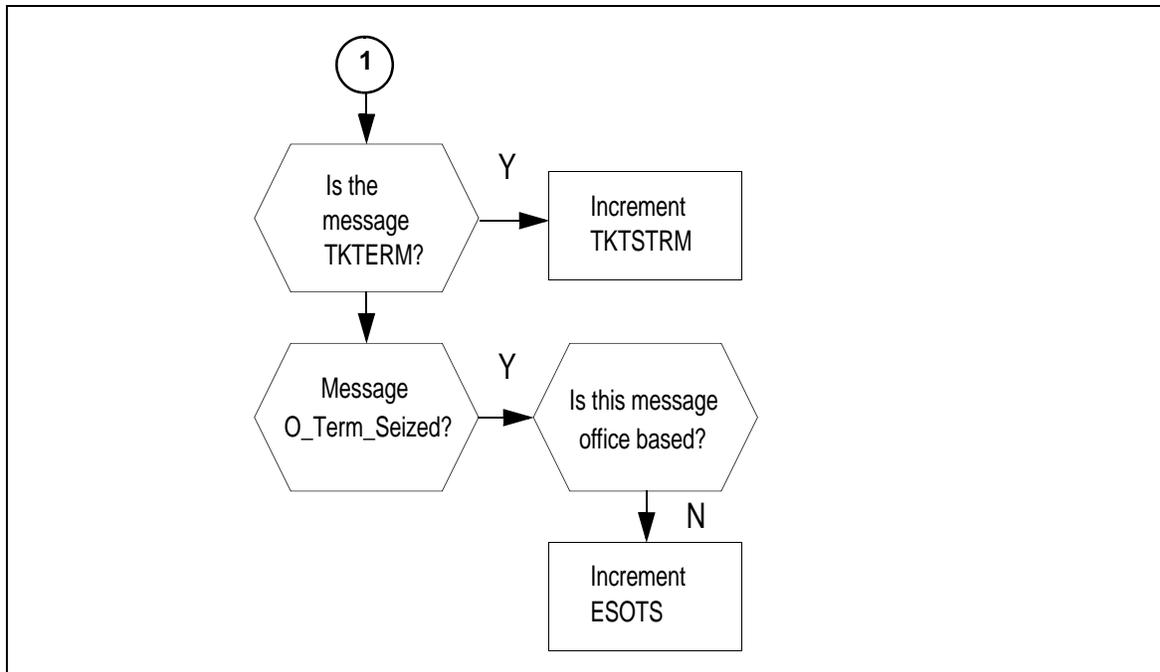


Figure 3 OM group AINOGSB2 registers (continued)



## 19.7 Register ISCCLR

IS CTR\_Clear (ISCCLR)

The ISCCLR register counts CTR\_Clear messages that the SSP sends to the SCP in a transaction that a subscribed message initiates. This register is part of advanced intelligent networks outgoing subscription-based (AINOGSB2) OM group.

### 19.7.1 Register ISCCLR release history

The NA017 product release introduced the ISCCLR register.

### 19.7.2 Associated registers

The IOCCLR register counts CTR\_Clear messages sent from the SSP to the SCP, in a transaction an office-based message initiates IO CTR\_Clear.

### 19.7.3 Associated logs

None.

### 19.7.4 Extension registers

None.

## 19.8 Register ESTMTOUT

Event subscribed T-Mid\_call TimeOUT (ESTMTOUT).

Register ESTMTOUT counts the number of Timeout Requested Events messages sent from the SSP to the SCP as a result of a T\_Mid\_Call Timeout EDP-R being armed by a non-office subscriber trigger.

### 19.8.1 Register ESTMTOUT release history

Product release NA17 introduced register ESTMTOUT.

### 19.8.2 Associated registers

Register ESOMTOUT counts the number of Timeout Requested Event messages sent from the SSP to the SCP as a result of a T\_Mid\_Call Timeout EDP-R being armed by a non-office subscribed trigger.

### 19.8.3 Associated logs

None.

### 19.8.4 Extension registers

None.

## 19.9 Register ESOTS

Event subscribed O\_Term\_Seized (ESOTS).

Register ESOTS counts the number O\_Term\_Seized messages sent from the SSP to the SCP as a result of an O\_Term\_Seized EDP-N being armed by a non-office subscribed trigger.

### 19.9.1 Register ESOTS release history

Product release SN06 introduced register ESOTS.

### 19.9.2 Associated registers

Register EOOTs counts the number of O\_Term\_Seized messages sent from the SSP to the SCP as a result of an O\_Term\_Seized EDP-N being armed by an office based trigger.

### 19.9.3 Associated logs

None.

### 19.9.4 Extension registers

None.

## 19.10 Register TSTKTRM

Register TSTKTRM records messages sent from the SSP as a result of TKTERM trigger.

**19.10.1 Register TSTKTRM release history**

The NA019 product release introduces register TKTERM.

**19.10.2 Associated registers**

There are no related registers.

**19.10.3 Associated logs**

There are no related logs.

**19.10.4 Extension registers**

There are no extension registers.

**19.11 Release history****19.11.1 SN07 (DMS)**

The register TSTKTRM was added by CR Q00765666.

**19.11.2 SN06 (DMS)**

Register ESOTS added. Documentation amended at SN07 (DMS) for CR Q00527425-04.

**19.11.3 NA017**

Added a new register ESTMTOUT, (59037100, originally 59028609). Also, added a new register ISCCLR, (59037140).

**19.11.4 NA016**

NA016 introduced OM group AINOGSB2.



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## 20 OM group FTROM

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### 20.1 OM description

Feature data block OM

OM group FTROM is introduced by feature AIN OMs for Telco Engineering (AU2731). OM group FTROM provides information to assist in switch resource engineering. It is recommended that OM group FTROM be used only for this purpose.

### 20.2 Registers

The following figure illustrates OM group FTROM registers as they appear on the MAP terminal display.

**Figure 121 OM group FTROM registers**

```

FTROM

CLASS:    ACTIVE
START:1998/01/14 13:00:00 WED; STOP: 1998/01/14 13:04:59
WED;
SLOWSAMPLES:      3 ; FASTSAMPLES:      30 ;

      KEY (FTR_NAME)
      INFO (FTR_DATA_SIZES_INFO)
           FTRHI   FTRSEIZ  FTRSEIZ2

```

### 20.3 Group structure

OM group FTROM

**Key field:**

FTR\_NAME

**Info field:**

SMALL, MEDIUM, LARGE, X\_LARGE, or CRITICAL

## **20.4 Associated OM groups**

OM group EXT

## **20.5 Associated functional groups**

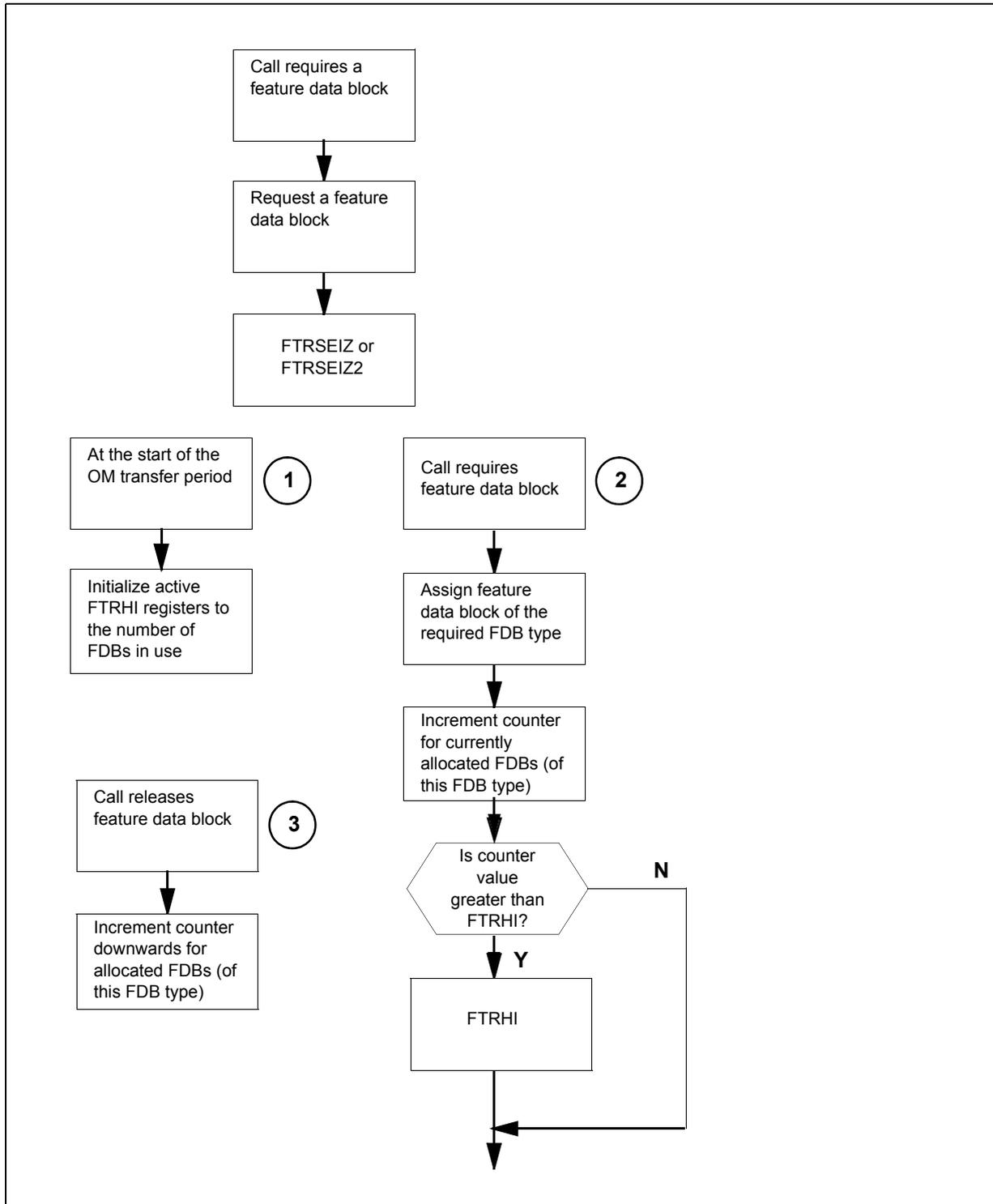
None

## **20.6 Associated functionality codes**

None

The following figure illustrates the logical flow of OM group FTROM registers.

Figure 122 OM group FTROM registers logic flow



## 20.7 Register FTRHI

Register maximum number of FDBs in simultaneous use

Register FTRHI records the maximum number of simultaneously allocated FDBs of a specific type, during an OM transfer period.

### 20.7.1 Register FTRHI release history

Register FTRHI was introduced in NA009.

### 20.7.2 Associated registers

EXTHI

### 20.7.3 Associated logs

None

### 20.7.4 Extension registers

None

### 20.7.5 Validation formula

None

## 20.8 Register FTRSEIZ

Register number of successful FDB allocations

Register FTRSEIZ records the number of successfully allocated FDBs of a specific type, during an OM transfer period.

### 20.8.1 Register FTRSEIZ release history

Register FTRSEIZ was introduced in NA009.

### 20.8.2 Associated registers

EXTSEIZ, EXTSEIZ2

### 20.8.3 Associated logs

None

### 20.8.4 Extension registers

FTRSEIZ2

### 20.8.5 Validation formula

Total of all tuples with info field SMALL = EXTSEIZ for tuple SMALL\_FEATURE\_DATA.

Total of all tuples with info field MEDIUM = EXTSEIZ for tuple MEDIUM\_FEATURE\_DATA.

Total of all tuples with info field LARGE = EXTSEIZ for tuple  
LARGE\_FEATURE\_DATA.

Total of all tuples with info field X\_LARGE =EXTSEIZ for tuple  
X\_LARGE\_FEATURE\_DATA.

Total of all tuples with info field CRITICAL = EXTSEIZ for tuple  
CRITICAL\_FEATURE\_DATA.

## **20.9 Release history**

OM group FTROM was introduced in NA009.



---

## 21 AIN message tracing tool

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AIN TCAP message tracing (AINTRACE) is a single-user CI tool available through the maintenance and administrative position (MAP) terminal. The tool allows the user to display/view CCS7 TCAP messages that are sent to or from an SCP or ADJUNCT. AIN messages can be captured by selecting either the agent type or message type desired. The captured TCAP messages are stored in a log and are then displayed in hexadecimal (HEX) format, text format, or both.

Using the AINTRACE CI commands, agents are selected by:

- TID Node and terminal number
- DN Directory number
- LEN Line equipment number
- TRK Trunk group CLLI and member number
- LTID Logical Terminal Identifier
- AC Attendant Console CLLI
- DPT Dynamic Packet Trunk (DPT) trunk group CLLI and CIC

AINTRACE also allows operating company personnel to trace messages based on message type. Messages are selected by MESSAGE message type (AGC, CREATE\_CALL, MONITOR\_FOR\_CHANGE, UPDATE).

When tracing is active, AINTRACE checks all AIN incoming and outgoing messages against the agents, or messages selected. When a match occurs, AINTRACE writes the related information to the log.

### 21.1 Using TOOLSUP to access AINTRACE

AINTRACE is a single user tool. The MAP window displays the user of the AINTRACE tool if it is currently in use. The status and history commands of the TOOLSUP utility provide information on the status and execution history of AINTRACE. The following example shows how to use the TOOLSUP utility to access AINTRACE.

**Figure 123 Using TOOLSUP to access AINTRACE example**

```

CI:
>AINTRACE
AINTRACE:
>AINTRACE
User count exceeded; AINTRACE in use by TEAM12
>toolsup

TOOLSUP - Tool Supervisor

Type HELP to display available commands

TOOLSUP:
>status of AINTRACE

Name          Status      Owner(s)
AINTRACE      Unavailable TEAM12
>history of AINTRACE

AINTRACE      Action          Time          Who
Actions: 21
              Stop          1999/11/16 12:31:47 SYSTEM
              Stop          1999/11/16 14:23:00 SYSTEM
              Stop          1999/11/16 14:29:39 SYSTEM
              Start         1999/11/16 15:40:43 TEAM12

```

## 21.2 AINTRACE commands

The following AINTRACE functions are available:

- entering the AINTRACE environment
- selecting and removing agents and messages from the tracing list
- starting and stopping the tracing process
- querying the status of the AINTRACE tool
- format, selecting the format for the AINTRACE output
- quitting from the AINTRACE environment

The tracing of AIN messages occurs after the START command has been entered, and can be stopped with the STOP command.

Access the AINTRACE command from the CI MAP level by typing

```
>AINTRACE
```

and pressing the Enter key.

The following AINTRACE commands are available:

- HELP
- STATUS
- SELECT
- REMOVE
- START
- STOP
- FORMAT
- QUIT

Each option is described in the following sections.

#### **21.2.1 HELP command**

Invoking HELP displays AINTRACE commands with a brief description of each command.

#### **21.2.2 STATUS command**

The STATUS command displays the current status of the tracing tool, the list of selected terminals, and the text format.

#### **21.2.3 SELECT command**

The SELECT command gives various ways of selecting an originating terminal (line or trunk) or message for tracing. Operating company personnel can use the command more than once to select more than one terminal or message type.

*Note:* For tracing termination attempt messages, use the SELECT command to select the originator of the call instead of the terminator.

The NA013 product release enhances AINTRACE to trace certain messages using the SELECT command.

The NA014 product release enhances the AINTRACE tool to:

- capture query messages for trigger TRA
- display the NatureOfCarrier parameter when the carrier is sent in a query message from a terminal
- display parameter CarrierUsage and parameter NatureOfCarrier (sub parameter of CarrierID) in messages Analyze\_Route, Forward\_Call and

Create\_Call (when these parameters are received in the SCP messages by the terminal)

The NA016 product release enhances the AINTRACE tool to:

- display the Carrier parameters in incoming Send-to-Resource conversation messages
- display the TSTRCTimer parameter in the Send\_To\_Resource message

The NA017 product release enhances the AINTRACE tool to:

- display the Timeout EDP-R message and the new parameters LegID, BCMType, PointInCall and CcID when sent in a query message from a terminal
- display the TimeoutTimer parameter and the Timeout value for the EDP-R message when received in the SCP messages by the terminal
- display the O\_Disconnect Calling and O\_Disconnect\_Called event messages sent in a query message from a terminal
- display the O\_Disconnect Calling and O\_Disconnect\_Called parameters in the Request\_Report\_BCM\_Event message when received in the SCP messages by the terminal
- display the Connect-to-Resource parameters in the incoming conversation/response message
- support the GenericDigitsList parameter in the Termination Attempt and Info Analyzed query messages
- support the Calling Geodetic Location parameter in the Termination Attempt and Info Analyzed query messages
- support new Timeout timer parameters
- support new messages in response to Timeout EDP-R

#### **21.2.3.1 SELECT command: SELECT DN**

The SELECT DN option selects a terminal based on the given DN. Use the SELECT DN command on a switch that supports lines.

Use the following syntax to select an agent by DN.

**>SELECT DN <dn>**

where <dn> is the directory number.

Example:

**>SELECT DN 6211185**

**21.2.3.2 SELECT command: LEN**

The SELECT LEN option selects a terminal based on the given LEN, consisting of an optional site parameter and four numbers that specify the frame, unit, drawer, and unit of the desired equipment. Use the SELECT LEN command only on a switch that supports lines.

When a LEN is selected where virtual identifier (VID) mapping is used (for example, keys on an EBS set), the command maps all VIDs to a single TID. As a result, the command selects all VIDs for tracing. See Section 21.2.3.3.1.

Use the following syntax to select a LEN.

**>SELECT LEN <site> <frame> <unit> <drawer> <circuit>**

where <site> is an optional site parameter (the default is HOST)  
 <frame> is a frame number  
 <unit> is a unit number  
 <drawer> is a drawer number  
 <circuit> is a circuit number

Examples:

**>SELECT LEN 27 0 12 16**  
**>SELECT LEN REM1 1 0 15 31**

**21.2.3.3 SELECT command: trunk**

The SELECT TRK option selects a specified trunk member.

Use the following syntax to select a trunk.

**>SELECT TRK <cli> <Member Number>**

where <cli> is a trunk name  
 <Member Number> is the trunk member number

Example:

**>SELECT TRK IBNMFITOG 3**

**21.2.3.3.1 SELECT command: terminal** The SELECT TID option selects a terminal based on the node and terminal identifier number of the terminal. Use the SELECT TID syntax with Virtual Terminal Identifiers (VIDs). Enter the virtual node and terminal number.

Use the following syntax to select a terminal by node and terminal number.

**>SELECT TID <node> <term>**

where <node> is the terminal node  
<term> is the terminal number

Example:

**>SELECT TID 2 251**

**21.2.3.3.2 SELECT command: LTID** The SELECT LTID option selects a logical terminal based on the logical terminal group, logical terminal number, and key. The key must be a DN key and not a feature key on the BRI set.

Use the following syntax to select a logical terminal.

**>SELECT LTID <ltgrp> <ltnum> <key>**

where <ltgrp> is an LTID group on a BRI set  
<ltnum> is the LTID number on the BRI set  
<key> is the key for the line you want to trace

Examples:

**>SELECT LTID ISDN 201**  
**>SELECT LTID ISDN 201 3**

**21.2.3.3.3 SELECT command: attendant console** The SELECT AC option selects an attendant console based on the CLLI provided.

Use the following syntax to select an attendant console for tracing.

**>SELECT AC <CLLI>**

where <CLLI > is the attendant console CLLI for the terminal

Example:

**>SELECT AC ATTKDKB**

**21.2.3.4 SELECT command: message**

The SELECT MESSAGE option allows certain messages to be selected and traced.

Use the following syntax to select a message.

**>SELECT MESSAGE <Operation Code>**

where <Operation Code> is one of the following messages ACG, CREATE\_CALL, MONITOR\_FOR\_CHANGE, UPDATE

Examples:

```
>SELECT MESSAGE CREATE_CALL
```

```
>SELECT MESSAGE ACG
```

#### **21.2.3.5 SELECT command: msg**

The SELECT MSG option allows certain messages to be selected and traced.

Use the following syntax to select a message.

```
>SELECT MSG <Operation Code>
```

where <Operation Code> is one of the following messages ACG, CREATE\_CALL, MONITOR\_FOR\_CHANGE, UPDATE

Examples:

```
>SELECT MSG CREATE_CALL
```

```
>SELECT MSG ACG
```

#### **21.2.3.6 SELECT command: dynamic packet trunk**

Use the following syntax to select a dynamic packet trunk (DPT) for tracing.

```
>SELECT DPT <cli> <string>
```

where <cli > is the DPT CLLI for the terminal, and <string> is the string associated with the CLLI

Example:

```
>SELECT DPT DPTEANTEGR 101
```

### **21.2.4 REMOVE command**

The REMOVE command removes terminals from the list. The syntax of the REMOVE command is similar to that of the SELECT command. Use the STOP command to stop tracing before removing any terminals from the list.

The NA013 product release enhances AINTRACE to remove certain messages being traced.

#### **21.2.4.1 REMOVE command: syntax 1**

Use the following syntax to clear the selection list.

**>REMOVE ALL**

**21.2.4.2 REMOVE command: syntax 2**

Use the following syntax to remove an agent from the selection list, based on the directory number.

**>REMOVE DN <dn>**

where <dn> is a directory number

Example:

**>REMOVE DN 6211185**

**21.2.4.3 REMOVE command: syntax 3**

Use the following syntax to remove a terminal from the selection list based on the LEN. When selecting a LEN where VID mapping is used (for example, keys on an EBS set), the command maps all VIDs to a single TID. As a result, the command removes all VIDs. See Syntax 6.

**>REMOVE LEN <site> <frame> <unit> <drawer> <circuit>**

where <site> is an optional site parameter (the default is HOST)  
<frame> is a frame number  
<unit> is a unit number  
<drawer> is a drawer number  
<circuit> is a circuit number

Examples:

**>REMOVE LEN 0 0 13 24**  
**>REMOVE LEN REM1 1 0 15 21**

**21.2.4.4 REMOVE command: syntax 4**

Use the following syntax to remove a trunk from the selection list, based on the CLLI and circuit number.

**>REMOVE TRK <clli> <ckt>**

where <clli> is a trunk name  
<Member Number> is the trunk Member number

Example:

**>REMOVE TRK IBNMFITOG 5**

**21.2.4.5 REMOVE command: syntax 5**

Use the following syntax to remove a terminal, based on the node and terminal number.

```
>REMOVE TID <node> <term>
```

where node is the terminal node  
term is the terminal number

Example:

```
>REMOVE TID 23 1042
```

**21.2.4.6 REMOVE command: syntax 6**

Use the following syntax to remove a logical trunk from the selection list.

```
>REMOVE LTID <ltgrp> <ltnum> <key>
```

where ltgrp is an LTID group on a BRI set  
ltnum is the LTID number on the BRI set  
key is the key for the line

Examples:

```
REMOVE LTID ISDN 201  
REMOVE LTID ISDN 201.3
```

**21.2.4.7 REMOVE command: syntax 7**

Use the following syntax to remove an attendant console from the selection list.

```
>REMOVE AC <CLLI>
```

where <CLLI> is the attendant console CLLI for the terminal

Examples:

```
>REMOVE AC ATTKDKB
```

**21.2.4.8 REMOVE command: syntax 8**

Use the following syntax to remove an attendant console from the selection list.

```
>REMOVE MESSAGE <Operation Code>
```

where <Operation Code> is one of the messages that can be traced (ACG, CREATE\_CALL, MONITOR\_FOR\_CHANGE, UPDATE).

#### **21.2.4.9 REMOVE command: syntax 9**

Use the following syntax to remove an attendant console from the selection list.

**>REMOVE MSG <Operation Code>**

where <Operation Code> is one of the messages that can be traced (ACG, CREATE\_CALL, MONITOR\_FOR\_CHANGE, UPDATE).

#### **21.2.4.10 REMOVE command: syntax 10**

Use the following syntax to remove a DPT from the selection list.

**>REMOVE DPT <dpt\_clli>**

where <dpt\_clli> is the DPT CLLI for the terminal

Examples:

**>REMOVE DPT  
DPTEANTEGATM**

### **21.2.5 START command**

The START command starts tracing activity for calls originating on the selected terminals and for messages that match the SELECT criteria.

Log AINT700 displays the AINTRACE messages that match the SELECT criteria.

### **21.2.6 STOP command**

The STOP command stops the tracing activity for the SELECTED items.

Use the STOP command to stop tracing activity before adding or removing items from the list.

### **21.2.7 FORMAT command**

The FORMAT command determines how messages appear in log AINT700.

The default format shows both the hexadecimal (HEX) and text output.

Syntax:

**>FORMAT <option>**

where <option> is one of  
- text to indicate text display

- hex to indicate hexadecimal display
- both to indicate hexadecimal and text display

Example:

**>FORMAT both**

### **21.2.8 QUIT command**

The QUIT command leaves the AINTRACE environment and returns to the CI level.

## **21.3 Supported messages and parameters**

The AINTRACE tool supports AIN Essentials and AIN Service Enablers messages and parameters. See Table 913 on page 474 and Table 914 on page 477.

*Note:* Messages in shaded areas are not supported for this release.

Table 913 AIN Service Enabler messages reported by AINTRACE (Sheet 1 of 4)

Type	Message
SSP call-related messages	Call_Info_From_Resource
	Close
	CTR_Clear
	Failure_Outcome
	Info_Analyzed
	Info_Collected
	Network_Busy
	O_Abandon
	O_Answer
	O_Called_Party_Busy
	O_Disconnect
	O_Mid_Call
	O_No_Answer
	O_Suspected
	O_Term_Seized
	Origination_Attempt
	Resource_Clear
	Success_Outcome
	T_Answer
	T_Busy
	T_Disconnect
	T_Mid_Call
	T_No_Answer
	Termination_Attempt
	Term_Resource_Available
	Timeout

**Table 913 AIN Service Enabler messages reported by AINTRACE (Continued)**

Type	Message
SCP or adjunct call-related messages	Acknowledge
	Analyze_Route
	Authorize_Termination
	Call_Info_To_Resource
	Cancel_Resource_Event
	Close
	Collect_Information
	Connect_To_Resource
	Continue
	Create_Call
	Disconnect
	Disconnect_Leg
	Forward_Call
	Merge_Call
	Move_Leg
	Offer_Call
	Originate_Call
	Reconnect
	Send_To_Resource
Split_Leg	

**Table 913 AIN Service Enabler messages reported by AINTRACE (Continued)**

Type	Message
noncall-related messages	ACG
	ACG_Global_Ctrl_Restore
	ACG_Global_Ctrl_Restore_Success
	ACG_Overflow
	Control_Request
	Echo_Reply
	Echo_Request
	Furnish_AMA_Information
	Monitor_For_Change
	Monitor_Success
	NCA_Data
	NCA_Request
	NCA_Response
	Query_Request
	Query_Response
	Request_Report_BCM_Event
	Send_Notification
	Status_Reported
	Termination_Notification
	Update
	Update_Data
	Update_Request
	Update_Success
abnormal	Application_Error
	Report_Error
	Failure_Report

Table 914 lists supported parameters for supported messages. All unsupported incoming parameters are displayed in HEX regardless of whether the formatting option selected was “TEXT” or “HEX.”

**Table 914 Parameters supported by AINTRACE**

Absolute SCPTime	intervaltime	Local SSPTime
AccessCode	CcID	GapDuration
ACGEncountered	ChargeNumber	GapInterval
AdminstrableObject	ChargePartyStationType	GenericAddress
AlternateBillingIndicator	ClearCause	GenericAddressList
AlternateCarrier	CloseCause	GenericDigitsList
AlternateTrunkGroup	ClearCauseData	GenericName
AMAAAlternateBillingNumber	CollectedAddressInfo	GlobalTitleAddress
AMABusinessCustomerID	CollectedDigits	IPReturnBlock
AMADigitsDialedWC	ConnectTime	Lata
AMALineNumber	ControlCauseIndicator	LegID
AMAMeasure	ControllingLegTreatment	MonitorTime
AMAMeasurement	DestinationAddress	NetworkSpecificFacilities
AMAsIpID	DisconnectFlag	NotificationDuration
AnswerIndicator	DisplayText	NotificationIndicator
ApplicationErrorString	DPCConverter	O_Disconnect_Called EDP Request
BCMType	EchoData	O_Disconnect Calling
BearerCapability	EditListType	ONoAnswerTimer
BusyCause	EDPNotification	OriginalCalledPartyID
BusyType	EDPRequest	OutpulseNumber
CalledPartyID	ErrorCause	OverflowBillingIndicator
CalledPartyStationType	ExtendedRinging	PassiveLegTreatment
Calling Geodetic Location	FacilityGID	PointInCall
CallingPartyBGID	FacilityMemberID	Prefix
CallingPartyID	FacilityStatus	PrimaryBillingIndicator
Carrier	FailureCause	PrimaryTrunkGroup

**Table 914 Parameters supported by AINTRACE (Continued)**

CarrierUsage	ForwardCallIndicator	RedirectingPartyID
RedirectionInformation	StatusCause	TranslationType
ResourceType	StrParameterBlock	TriggerCriteriaFlag
SecondAlternateBillingIndicator	Tcm	TriggerCriteriaType
SecondAlternateCarrier	TerminationIndicator	TSTRCTimer
SecondAlternateTrunkGroup	TimeoutTimer	UserID
Spid	TNoAnswerTimer	VerticalServiceCode
PartyId	PartyonHold	

*Note:* For the AdminstrableObject parameter, AINTRACE supports the settings that GAME supports.

### 21.3.1 SOC idle warning

Because some SOC options control parameter and/or message use, AINTRACE warns the user that SOC options are idle in the following cases:

- An incoming message is supported but it is controlled by a SOC option that is currently idle. The message is displayed with the warning “message is associated with SOC option <option name> that is currently idle.” The SOC options are listed in Chapter 11: “Software optionality control” on page 401.
- Incoming parameters are supported but are controlled by a SOC option that is currently idle. The parameter is displayed with the warning “parameter is associated with SOC option <option name> that is currently idle.”

For more information about SOC options, see **Chapter 11: “Software optionality control” on page 401.**

## 21.4 Viewing AINT 700 logs using the LOGUTIL tool

The AINT 700 logs can be viewed using the LOGUTIL tool. The following instructions describe the use of the LOGUTIL tool for viewing AINT 700 logs:

- To view the AINT 700 logs, the user opens the log (‘OPEN AINT 700’). The last generated log is displayed. The full set of LOGUTIL traversal commands are available. (‘BACK [ALL],’ ‘FORWARD [ALL],’ ‘FIRST,’ etc.).
- To view real-time AINTRACE-captured messages, invoke the ‘START’ command. LOGUTIL tool will start dumping the logs. Logs can be filtered using the command line ‘DELREP PRT2 PM NETM LINE AUD AUDT.’

- For best performance, the user should have two separate MAPCI sessions for AINTRACE and for the LOGUTIL tool. When one MAPCI session is used for both, the following issues are involved
  - Because both AINTRACE and the LOGUTIL tool use the same commands, they mask each other depending on which tool command was entered last. When the LOGUTIL tool was entered last, AINTRACE's commands are executed by specifying the AINTRACE command. To specify AINTRACE, type 'AINTRACEDIR.<command>' (for example, 'AINTRACEDIR.STOP')
  - When the user has invoked continuous log dumping in the LOGUTIL tool ('START; WHILE TRUE (SLEEP 100)'), the volume of logs being dumped may cause difficulty in invoking further commands. To halt log dumping, invoke the LOGUTIL STOP command. Note that quitting from the LOGUTIL tool ('QUIT') will not halt log dumping.
- AINTRACE must not be tracing messages when the user wishes to use the SELECT or REMOVE command.

## 21.5 AINTRACE example 1

TRAVER 470 on page 479 shows an example of using AINTRACE. The call scenario originates a call that hits an SDS trigger, sending a multi-component message containing a Continue operation and a RRBCME operation, and then terminates the call. AINTRACE captures the messages sent between the SSP and SCP and decodes the AIN Service Enablers messages and parameters.

**Figure 470 SDS trigger, Continue and Request\_Report\_BCM, with Close response**

```

>AINTRACE
AINTRACE:
>select dn 7225035
2 MADN members found
2 terminals selected
>start
Tracing started. Messages will be logged to log AINT 700.
>stop
Tracing stopped. Messages were logged to log AINT 700.
>logutil
>open AINT 700
COMI09BC AINT700 NOV07 14:57:16 9900 INFO AINTRACE Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Response
Transaction IDs: Hex ID = 40000000
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = FF Decimal ID = 255

```

**Figure 470 SDS trigger, Continue and Request\_Report\_BCM, with Close response (Continued)**

```
Message: Close
UserId Dn: 6137225035
Bearer Capability: Speech
Close Cause: Call Terminated
>back
COMI09BC AINT700 NOV07 14:57:12 9900 INFO AINTRACE Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Conversation With Permission
Transaction IDs: Hex ID = 40000000
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = 01 Decimal ID = 1
Hex ID = 76 Decimal ID = 118
Message: Continue
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = 02 Decimal ID = 2
Hex ID = 76 Decimal ID = 118
Message: Request_Report_BCM_Event
EDP Request:
O_Called_Party_Busy
O_Answer
EDP Notification:
O_Answer
O No Answer Timer: 12
>back
COMI09BC AINT700 NOV07 14:57:10 9900 INFO AINTRACE Report
TID: 173 256
Agent: LEN HOST 02 0 02 01 DN 7225035 KEY 1
Direction: Incoming
TCAP Package Type: Conversation With Permission
Transaction IDs: Hex ID = 8F0000
Component Sequence:
Component Type: Invoke(Last)
Component ID(s): Hex ID = 76 Decimal ID = 118
Message: Info_Analyzed
UserId Dn: 6137225035
BearerCapability: speech
CalledPartyID: 6136212234
Nature of Number: Subscriber number
Numbering Plan: ISDN Numbering Plan
TriggerCriteriaType: npaNXXXXXX
ChargeNumber: 6137225035
Nature of Number: ANI of the calling party; national number
Numbering Plan: ISDN Numbering Plan
CallingPartyID: 6137225035
Nature of Number: Non-unique national number
```

**Figure 470 SDS trigger, Continue and Request\_Report\_BCM, with Close response (Continued)**

```
Numbering Plan: ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator: Network provided
ChargePartyStationType: IdentifiedLine - No Special Treatment
Carrier: 0110
Carrier Selection: Selected identification code presubscribed and
not input by calling party
```

## 21.6 Limitations

AINTRACE has the following limitations and restrictions:

- AINTRACE is a single user tool.
- The maximum number of TIDs that can be selected at a time is 40.
- AINTRACE has no facility for tracing calls or retaining data over a restart. On a restart, messages are preserved while all other data is lost and the tool is re-initialized.
- AINTRACE does not capture a message when any non-call-related error occurs while building a query message or when a protocol error occurs.
- AINTRACE is not designed to handle all erroneous TCAP messages.
- When AINTRACE traces ACG messages, ACG in a multi-component message is not detected and displayed unless the affected TID is traced as well.
- DPTs are selected only by CLLI. Selection by TID is not supported.
- With the exception of the Create\_Call message and a subset of non call-related messages (ACG, Monitor\_For\_Change, Update, Update\_Data, Update\_Request, Update\_Success), AINTRACE does not record messages that are not part of a call-related transaction (for example, unidirectional messages and non call-related messages).

When an agent's TID is mapped to virtual identifiers (VIDs), (as in the case where there is more than one DN for each LEN) then the TID itself cannot be traced. Information can be collected against the VIDs.

Although AINTRACE has the capability of tracing VIDs that are associated with a TID, AINTRACE cannot trace feature keys, even when the feature key has a VID assigned to it. AINTRACE can only trace lines or trunks.



---

## 22 Translation verification tool for AIN

---

The translations verification (TRAVER) utility allows telephone operating company personnel to examine, for maintenance and verification purposes, the translation and routing data of a simulated call. The routing and translation data is displayed for a single leg of a call, and the originating and terminating agents of the call leg are specified by the user. All lines and trunk groups currently supported by the AIN SSP are supported by TRAVER.

TRAVER displays AINSSP-specific information. No AINSSP query is launched by this utility, however, at certain TDPs a query message can be optionally stored in a file for subsequent import into the TstQuery tool.

When the TRAVER command is executed, call processing is simulated and the following TDPs in the originating and terminating call models can be encountered:

- Info\_Collected
- Info\_Analyzed
- Network\_Busy
- Origination\_Attempt
- Termination\_Attempt

When a TDP is encountered, the following actions take place:

- A subscription to any of the triggers at the TDP is determined. In the originating call model, when triggers can be subscribed on different bases, the trigger subscription is checked in the following order of precedence:
  - Individual (line or trunk group) based triggers
  - Office-based triggers
  - Customer group-based triggers
- At the Info\_Analyzed TDP, the trigger precedence is as follows (The DMS names corresponding to these triggers are provided in parentheses):
  - Specific\_Feature\_Code (SFC)
  - Public\_Feature\_Code (PODPFEAT)
  - Customized\_Dialing\_Plan (CDPCODE)
  - Specific\_Digit\_String (PODP)
  - N11
- When there are no triggers subscribed at the TDP, an informational message is displayed and the call processing simulation continues.
- When a trigger is subscribed at the TDP, the entry from table TRIGGRP that defines the trigger is displayed. Criteria checking is then performed. For triggers Off-Hook\_Immediate (OFFHKIMM), Off-Hook\_Delay (OFFHKDEL), and Termination\_Attempt (TERM\_ATT), the activation state is also checked. This check is treated by TRAVER as an additional form of criteria checking.
- When the trigger is subscribed, but its criteria has not been met, an information message is displayed and simulation of call processing continues.
- When the trigger is subscribed and criteria are met, but either the AIN00002 or AIN00006 SOC option is not in the ON state, a message displays to indicate the option that is not ON and simulation of call processing continues. See Section 11.23 “TRAVER output of SOC options” on page 446 for details and examples.
- When the trigger is subscribed, its criteria is met, and both the AIN00002 and AIN00006 SOC options are in the ON state, then the following messages are displayed
  - an informational message and the entry in tables TRIGITM, TRIGINFO or TRIGDIG that specify the messaging and protocol information for this trigger are displayed
  - when the AINMQG option was specified, an applicable query message for the TDP is generated and saved to a file for subsequent import into the TstQuery tool (this occurs for TDPs Origination\_Attempt,

Info\_Collected, Info\_Analyzed, Network\_Busy, and Termination\_Attempt.

- when the AINMQG option was not specified, an information message is displayed
- Simulation of the call ends at this point.
- when the AINMQG option was specified on the command line, it is ignored until and unless a subscribed trigger criteria is met and both the AIN00002 and AIN00006 SOC options are in the ON state (see Section 11.23 “TRAVER output of SOC options” on page 446 for details and examples)

The Termination\_Attempt TDP is only encountered when a simulation of call processing is not terminated by “triggering” at any of the originating TDPs.

For AINSSP triggers, it is possible to specify trigger criteria based on call type. TRAVER assumes “voice” as the default call type. When the user wishes to test calls of other call types, the TRAVER BearerCapability (BC) option should be used.

See Section 22.9 “TRAVER example 1” on page 520.

## 22.1 Limitations

TRAVER has the following limitations and restrictions:

- TRAVER does not build into a generated query message all the parameters that real call processing support. The user must manually add any missing parameters with TSTQuery.
- TRAVER does not support the LNP triggers for query message building.
- TRAVER does not support the attendant console agent for query message building.
- Calls that route through TR-533 E800 are not traced by TRAVER, however calls that use AIN Service Enablers’ toll-free service are.
- LEAS traffic is not supported in TRAVER for query messages populating parameter LATA.
- AINMQG-TRAVER supports the triggers at the five TDPs: Origination\_Attempt, Info\_Collected, Info\_Analyzed, Termination\_Attempt and Network\_Busy.
- Among the triggers at the TDP Info\_Analyzed, the LNP trigger is not supported in AINMQG-TRAVER.
- LEAs traffic is not supported in AINMQG-TRAVER for query messages populating the message parameter LATA.

- AINMQG-TRAVER does not support all message parameters introduced by the AIN triggers.
- TRAVER does not support serial triggering. When more than one trigger per call is expected, then it must be manually simulated using AINRES.
- The AC (Attendant Console) agent is not supported in TRAVER for query message building.

## 22.2 Restrictions

AIN does not support the TrnslVf (MAPCI) utility.

## 22.3 TRAVER command

The TRAVER command and its options are as follows:

```
>TRAVER <ORIG> ...
        L <LINE> STRING ...
        TR <CLLI> STRING ...
        <DIGITS OR N FOR NO DIGITS> STRING
        [<CDNIE> CDN ...
        [<TNSIE> {TNS ...} ...
        [<BC> {BC <BCNAME> STRING}] ...
        [<AIN_OPTIONS> {AIN  [<AIN_CHG> {AINCHG <DIGITS>
STRING}]
                                [<AIN_MQG> {AINMQG}}]}
        [<AININFO>]{AINRES} ...
        <TRACE> {T, NT, B} ...
        [<BILLNO> STRING] ...
```

## 22.4 Equal access translation

TRAVER works with the equal access translation feature for AIN Essentials TRK-FGD interworking call scenarios. To accomplish this, translations indexes table TRKLATA with the originating trunk CLLI and the charge number in the SCP response or ANI (when it is an originating trunk). When TRAVER finds the tuple in table TRKLATA, it uses the corresponding LATA to check tables LATAOLA and OCCINFO. When TRAVER does not find an entry in table TRKLATA, it displays none of the three tables.

This TRAVER functionality works only with the AINRES option on the command line.

## 22.5 MF inter-toll trunk translation

The MF inter-toll trunk translation enhancement feature does not affect the TRAVER utility. The following section provides information related to the use of the TRAVER utility regarding this feature.

A single TRAVER command cannot simulate both stages of translation simultaneously for a call on an incoming MF IT trunk, using FGD signaling and having an SSP selector specified in subtable STDPRT of table STDPRTCT. Each stage of translations must be simulated separately through the TRAVER utility. The first stage of translations, that translate the 0ZZXX(X) digits, require a separate TRAVER command. The second stage of translations, that translate the dialed digits, require a second TRAVER command.

The following diagrams illustrate examples of the TRAVER commands that can be used to simulate a call. The example shows a call with an incoming MF IT trunk using FGD signaling and having an SSP selector that can be specified in subtable STDPRT of table STDPRTCT. Figure 471 illustrates the TRAVER output resulting from the first stage of translations.

**Figure 471 TRAVER output for first stage of translations**

```
>TRAVER tr mfiteaic 088110 b
TABLE TRKGRP
MFITEAIC IT 63 ITTD NCTC IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ONE
TABLE STDPRTCT
E800 (1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 088110 088110 SSP NP 6 6 NA
AIN Info Collected TDP: no subscribed trigger.
DIALED EQUAL ACCESS CODE DID NOT TRIGGER
TRAVER STOPS PROCESSING THE CALL
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
+++ TRAVER: SUCCESSFUL CALL TRACE +++
>
```

The TRAVER utility stops when it encounters an SSP selector. Figure 472 on page 488, illustrates the TRAVER output resulting from the second stage of translations.

**Figure 472 TRAVER output for second stage of translations**

```

>TRAVER tr mfiteaic 6007229876 b
TABLE TRKGRP
MFITEAIC IT 63 ITTD NCTC IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ONE
TABLE STDPRTCT
E800 (1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HNPACONT
613 873 2 (61) (1) (94) (0) 0
. SUBTABLE HNPACODE
. 600 600 FRTE 600
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
OFCTRIGGRP_ONE INFOANAL
. N11 (DG N11DIG)$NIL
Trigger R01 N11 is applicable to office.
. PODP (DG PODPDIG)$NIL
Trigger R01 PODP is applicable to office.
. TABLE TRIGDIG
. PODPDIG PODP 6007229876 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
... TABLE C7GTTYE
... AINJAZZ ANSI7 3 $
... TABLE C7GTT
... AINJAZZ 6007229876 6007229876 SSNONLY (AINTEST) $

AIN Info Analyzed TDP: trigger criteria met, querying the database.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

>

```

To simulate a call on an incoming MF IT trunk using FGD signaling and having an SSP selector specified in subtable STDPRT of table STDPRTCT required two TRAVER commands. The TRAVER utility cannot compare the output of the second TRAVER command with the output of the first TRAVER command.

To use the TRAVER utility for 0+ calls on incoming MF IT trunks using FGD signaling and having an SSP selector in subtable STDPRT of table STDPRTCT, the user could omit the “0” prefix and simply specify the remaining 10-digit dialed number.

Assuming that the appropriate datafill is present, the previous method simulates an actual 0+ call when call processing encounters this feature enhancement. That is, with this feature enhancement, call processing strips the leading 0 for 0+ calls on incoming MF IT trunks using FGD signaling and having an SSP selector in subtable STDPRT of table STDPRTCT. To successfully use TRAVER, the user must do the same to simulate the second stage of translations.

## 22.6 AIN response translation simplification

For the AIN response translations simplification feature, three optional parameters are available for the TRAVER command.

In addition to the three optional parameters, TRAVER adds output messages to the trace display area to indicate when it has completed ISDN digit conversion. These display messages appear with the trace output for table PXLAMAP. See Section 477 “TRAVER example for PXLAMAP ISDN digit conversion” on page 491.

Parameter definitions for AIN response translations simplification are summarized in Table 915.

**Table 915 Parameter definitions for AIN response translations simplification**

Parameter	Value	Definition
DIGCONV	None	Optional parameter that is only relevant when the SOC option for AIN Response Translation Simplification is idle.  Use this parameter to indicate that TRAVER should invoke ISDN digit conversion when the translation datafill is present to trigger it. This parameter is not relevant when the SOC option is ON.
FGD	None	Optional parameter specifying that the trunk originator uses FGD signaling.
CIC3	None	Optional Parameter specifying that the translations for the incoming FGD trunk is based on CIC size of 3 digits.  Use the parameter FGD to access this parameter.

The feature uses the TRAVER AINRES datafill option. When the digit conversion process applies, TRAVER indicates that digit conversion applies and reports the converted digits.

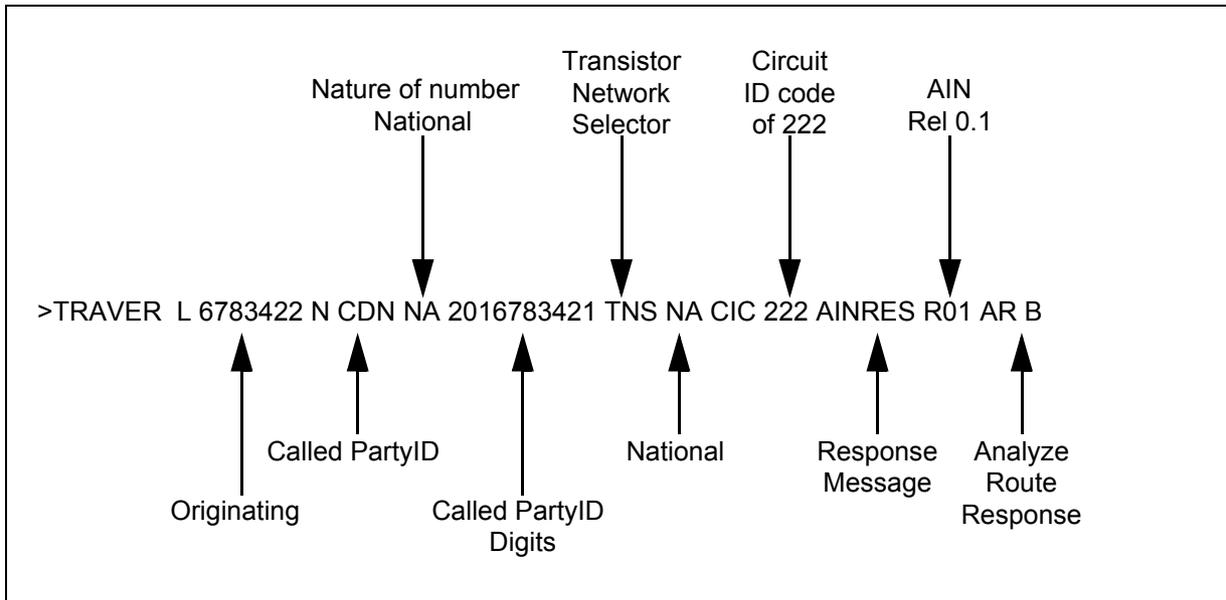
The AIN response translation simplification feature introduces three parameters for TRAVER. All three parameters fall under the AINRES option.

Parameter DIGCONV lets the operating company investigate digit conversion results while the ISDN digit conversion feature is inactive in the office.

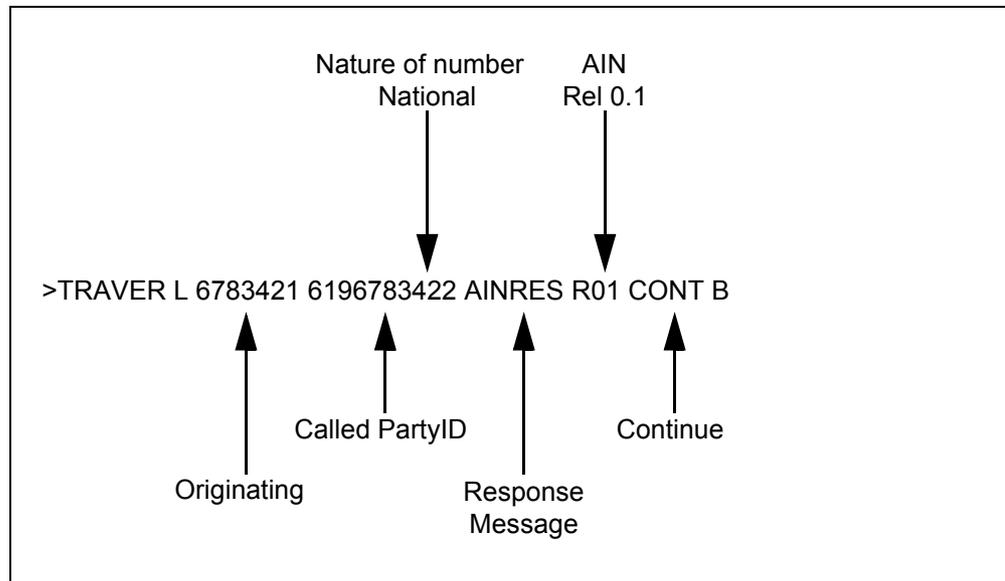
Use the other two parameters, FGD and CIC3, to supply information to the digit conversion process.

The following figures provide examples of command lines for AIN response translation simplification.

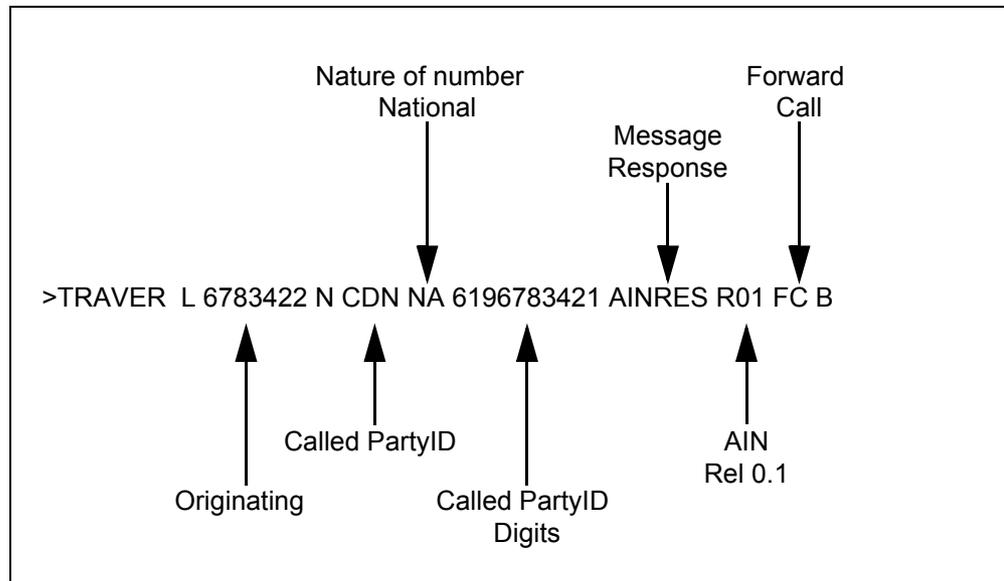
**Figure 473 TRAVER command line for AIN analyze route response example**



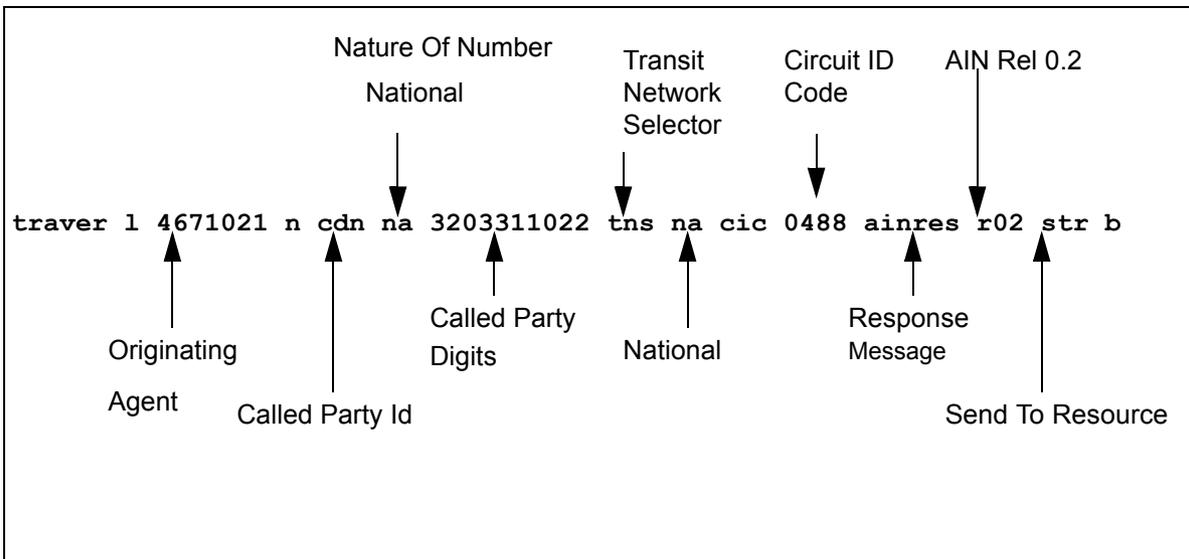
**Figure 474 TRAVER command line for AIN continue response example**



**Figure 475 TRAVER command line for AIN forward call response example**



**Figure 476 TRAVER command line for Send\_T0\_Resource response example**



The following figure provides sample TRAVER output for PXLAMAP ISDN digit conversion.

**Figure 477 TRAVER example for PXLAMAP ISDN digit conversion**

```
>traver 1 6136213006 n cdn in 448196211211 ainres r02 ar b
Warning: Routing characteristics are present.
Originator must be able to send in
```

**Figure 477 TRAVER example for PXLAMAP ISDN digit conversion (Continued)**

```

characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$)$
TABLE IBNLINES
HOST 00 0 05 07 0 DT STN RES 6213006 200 613_P621_200 L613_NILLA_4 613 $
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $ $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 05 07 0 AIN AIN TIID (4 INTERNTL ON) (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 4 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR WILL BE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
    (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
    (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $ $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $

```

**Figure 477 TRAVER example for PXLAMAP ISDN digit conversion (Continued)**

```

TABLE PXLAMAP
. CDNPUB P621 ( XLA EAP1) ( PREFIX )$
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 011448196211211
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 011 011 N DD 3 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE CCTR
44 T 044 8 12 T OFRT 1022 Y $
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
1022 TS D OTMF1 0 0 N 3 188
      TS D OTDP1 0 0 N 3 188
EXIT TABLE OFRT
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE TRIGITM
. . 4 INTERNTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 4481962112 4481962112 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

### 22.6.1 Parameter DIGCONV

Use parameter DIGCONV during an operating company's datafill transition for ISDN digit conversion. You activate ISDN digit conversion through software optionality control (SOC).

While the ISDN digit conversion feature is idle or deactivated, the operating company can specify that it would like to see the results of a digit conversion in a TRAVER through use of parameter DIGCONV. TRAVERS performed without this parameter do not invoke digit conversion, therefore, the operating company can determine the result when the feature is active without affecting call processing. The operating company can further preserve the ability to use TRAVER to determine current datafill.

It is important to note that even when using parameter DIGCONV, digit conversion occurs only when the datafill is there to trigger it and has met the following conditions:

- the translation path hits a tuple in PXLAMAP that has the PREFIX selector datafilled
- the translation path hits PXLAMAP, but no tuple is found

*Note:* When ISDN digit conversion is active in an office, TRAVER does not need parameter DIGCONV to see digit conversion results. This parameter is significant only when ISDN digit conversion is not active.

Parameter DIGCONV is an optional parameter that falls under the AINRES option (also optional).

The following command line is an example of the TRAVER command using DIGCONV and FGD (TRK Orig).

```
TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR  
DIGCONV FGD B
```

The following command line is an example of the TRAVER command using DIGCONV only (TRK Orig).

```
TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR  
DIGCONV B
```

The following command line is an example of the TRAVER command using DIGCONV and FGD (TRK Orig).

```
TRAVER L 2413487 N CDN NA 6137220000 AINRES R01 AR  
DIGCONV B
```

### 22.6.2 Parameters FGD and CIC3

The user provides information to TRAVER that is normally available during the duration of a call leg in call processing. TRAVER can only simulate portions of the call leg; this portion is the processing of the response from an SSP and the translation resulting from it. In digit conversion, the information elements that need to be provided are as follows:

- whether the originating or incoming agent is an FGD trunk
- when the trunk is an FGD trunk, does it's translations assume a CIC size of three, or four

An optional TRAVER parameter is available under parameter analyses response (AR) for RES\_TYPE in the AINRES option hierarchy. This parameter is FGD, and it indicates an FGD originator for the TRAVER command. A second optional parameter can be added under the FGD parameter to indicate the CIC size. This second parameter is CIC3, and it indicates a CIC of three digits for the TRAVER command.

Absence of parameter FGD indicates a trunk originator of either an FGC or local trunk scenario.

When the user indicates that the trunk is FGD, but does not input CIC3, a CIC size of 4 digits is assumed.

*Note:* Using TRAVER for AIN response translations for line originators and non-FGD trunk originators does not require additional parameters for digit conversion.

The following command line is an example of the TRAVER command for an FGD trunk and a CIC size of three.

```
>TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR FGD
CIC3 B
```

The following command line is an example of the TRAVER command for an FGD trunk only.

```
>TRAVER TR ISUPTIIC N CDN NA 6137220000 AINRES R01 AR FGD
B
```

## 22.7 Option AINCHG

Option AINCHG simulates the following scenarios:

- charge number digits sent by an SCP when TRAVER's AINRES option is present and the response contains parameter ChargeNumber, or
- ANI digits for MF trunks, CPN digits for PRI trunks and charge number digits for ISUP trunks

*Note:* TRAVER can simulate three responses: Analyze\_Route, Forward\_Call and Continue. Only the first two can possibly contain parameter ChargeNumber.

In line origination, the AINCHG option is ignored when the AINRES option has not been specified because the originator's ANI is used as the ChargeNumber (unless it is specified by the SCP). ANI does not exist for all trunks, therefore, AINCHG must be specified for TRAVER or GTV defaults to zeros.

To achieve maximum flexibility, the AINCHG accepts up to 18 digits as input, however, any input that is not 10-digits long is left-justified and is filled with zeros (or truncated) to 10 digits before it is used as the source of the GTV to index into table C7GTT.

Option AINCHG must be prefixed by AIN. When both AINCHG and AINMQG options are specified, option AINCHG must precede option AINMQG.

See Section 22.18 "TRAVER example with AINCHG option" on page 561.

## 22.8 Option AINMQG

The AINMQG option allows for the creation of query messages at certain TDPs. TRAVER saves the query message to a file that can be subsequently loaded into the TSTQuery tool for transmission to an off-board processor, for example, an SCP or adjunct. See Section 22.19 "TRAVER examples with AINMQG option" on page 563.

Figure 478 provides a sample TRAVER output resulting from the AINMQG option.

**Figure 478 TRAVER output resulting from AINMQG option**

```
>traver 1 6215000 16215002 AINMQG nt
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter storage location:<File Device> <File Name>
>sfdev podp
AINMQG Query message saved in file.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 479 provides an example of the output file resulting from the AINMQG option. The file can subsequently be imported by the TSTQuery tool and sent to an off-board processor (for example, an SCP or adjunct).

**Figure 479 TRAVER file resulting from AINMQG option**

```
SetAppl R02
SetMsg Info Analyzed
BearerCapability speech
CalledPartyID 3 1 6136215002
CallingPartyID 1 1 0 3 6136215000
Carrier 1 0110
ChargeNumber 3 1 6136215000
Lata 0 0 111
TriggerCriteriaType npa
UserId Dn 6136215000
```

Table 916 on page 497 lists the TDPs and switch call-related messages against the AIN triggers (by the names used in the DMS-100 SSPs). The table details where TRAVER can build an AIN message in this release, along with the parameters supported in AINMQG-TRAVER for these messages.

**Table 916 TRAVER / AINMQG Supported Messages**

TDP / Switch Call Related Messages	Info_ Analyzed	Info_ Collected	Network_ Busy	Origination_ Attempt	Termination_ Attempt
Triggers Parameters	SFC PODPFEAT CDPCODE SDS N11 ONEPLUS SPECIFIED_CARRIER INTERNATIONAL OPERATOR_SERVICES	OFFHKDEL PRIB INTEROFF	AFR	OFFHKIMM	TERM_ATT
AccessCode	AINMQG	AINMQG(*)	-	-	-

**Table 916 TRAVER / AINMQG Supported Messages (Continued)**

<b>TDP / Switch Call Related Messages</b>	<b>Info_ Analyzed</b>	<b>Info_ Collected</b>	<b>Network_ Busy</b>	<b>Origination_ Attempt</b>	<b>Termination_ Attempt</b>
<b>Triggers Parameters</b>	<b>SFC PODPFEAT CDPCODE SDS N11 ONEPLUS SPECIFIED_CARRIER INTERNATIONAL OPERATOR_SERVICES</b>	<b>OFFHKDEL PRIB INTEROFF</b>	<b>AFR</b>	<b>OFFHKIMM</b>	<b>TERM_ATT</b>
ACG_ Encountered	X	X	X	X	X
AMASequenceNumber	X	X	X	X	X
Amp1	X	X	X	X	X
Amp2	X	X	X	X	X
BearerCapability	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
CalledPartyID	AINMQG	-	AINMQG	-	AINMQG
CalledPartyStationType	-	-	-	-	X
CallingPartyBGID	AINMQG	-	-	-	-
CallingPartyID	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
Carrier	AINMQG	AINMQG	AINMQG	AINMQG	-
ChargeNumber	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
ChargePartyStationType	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
CollectedAddressInfo	AINMQG	AINMQG	-	-	-
CollectedDigits	AINMQG	AINMQG	-	-	-
CTRConnection	X	-	-	-	X
ExtensionParameter	X	X	X	X	X
GenericAddressList	X	X	-	-	X
GenericName	-	-	-	-	X
LATA	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)
NetworkSpecificFacility	AINMQG	-	-	-	-
NotificationIndicator	-	-	X	X	-
OriginalCalledPartyID	X	X	X	-	X
Prefix	AINMQG	AINMQG	AINMQG	-	-

**Table 916 TRAVER / AINMQG Supported Messages (Continued)**

TDP / Switch Call Related Messages	Info_ Analyzed	Info_ Collected	Network_ Busy	Origination_ Attempt	Termination_ Attempt
Triggers Parameters	SFC PODPFEAT CDPCODE SDS N11 ONEPLUS SPECIFIED_CARRIER INTERNATIONAL OPERATOR_SERVICES	OFFHKDEL PRIB INTEROFF	AFR	OFFHKIMM	TERM_ATT
RedirectingPartyID	X	X	X	-	X
RedirectionInformation	X	X	X	-	X
RTPServiceIndicator	-	-	-	-	X
Sap	X	X	X	X	X
STRConnection	X	-	-	-	X
TCM	X	X	X	-	X
TriggerCriteriaType	AINMQG	AINMQG	AINMQG	AINMQG	AINMQG
UserID	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)	AINMQG(*)
VerticalServiceCode	AINMQG	X	-	-	-
<p>Key to the table:                      AINMQG = Supported by TRAVER/AINMQG                      - = Not defined in GR-1299 message definition.                      X = In GR-1299 but not supported by TRAVER/AINMQG                      (*) = Partially supported</p>					

When TRAVER detects that a trigger’s criteria has been met, it builds the appropriate message from the TRAVER call context (to the extent it is available). When values for any portion of the message (for example, the charge number for a trunk originated call) are not available in the existing TRAVER call context, then the TRAVER user is interactively prompted for the values required. When the parameter is mandatory, the user must provide a value. When the parameter is optional, the user can choose not to provide a value.

Table 917 summarizes parameters that are supported by TRAVER for the AINMQG option. It shows for each agent how the parameter values are

determined from the call scenario, based on the type of agent the trigger is associated with.

**Table 917 Summary of TRAVER methods to generate parameters**

Parameter	Agent				
	line	PRI	ISUP	MF	AC
AccessCode	D	-	-	-	-
BearerCapability	D	D	D	D	-
CalledPartyID	D	D	D	D	-
CallingPartyBGID	D	D	D	D	-
CallingPartyID	D	D	D/P	P	-
Carrier	-	D	D	D/P	-
ChargeNumber	D	D	D	D	-
ChargePartyStationType	D	D/P	P	D	-
CollectedAddressInfo	D	D	D	D	-
CollectedDigits	D	D	D	D	-
LATA	D	D	D	D	-
NetworkSpecificFacilities	-	D/P	-	-	-
Prefix	D	D	-	-	-
TriggerCriteriaType	D	D	D	D	-
UserID	D	D	D	D	-
VerticalServiceCode	D	-	-	-	-
<b>Legend</b>					
<ul style="list-style-type: none"> <li>• D = derived from call context and/or static datafill</li> <li>• P = prompted for when needed</li> <li>• - = Not supported or not applicable</li> </ul>					

The following sections detail how the parameters are populated by TRAVER.

Some sections provide a precedence list for the population of parameters by TRAVER. These lists contain conditions based on command line options, datafill, or other data. TRAVER uses these lists sequentially until it encounters

a condition that is satisfied, at that point it populates the parameter based on the satisfied condition.

Many of the parameter building details are similar to those described in the individual parameter sections beginning Section 6.4.4.19 on page 218. The following sections address differences between CallP and TRAVER simulation using the AINMQG option.

### 22.8.1 AccessCode

The following access codes are supported:

- access code to public environment (9+)
- access code to private routes (ESN (6+))
- SCP feature access codes (\*XX)

All access codes are datafilled in IBNXLA and must be matched in this table for the parameter to be populated.

The AccessCode parameter uses the AINDigits format and its fields are populated as follows:

- nature of number is set to “not applicable”
- numbering plan is set to “unknown or not applicable”
- digits contains an access code of one to five digits

### 22.8.2 BearerCapability

Parameter BearerCapability is populated using the following sequence:

- entry on the command line with the BC option
- BearerCapability dialed (for private agents)
- subscribed in one of the following tables: KSFEAT, IBNFEAT, DNATTRS, TRKGRP
- the default BearerCapability in table OFCENG or ‘56KDATA’ for data calls

Table 918 shows the mapping between TRAVER BearerCapability values and those populated in parameter BearerCapability.

**Table 918 Mapping of TRAVER BC option to AIN BearerCapability values**

TRAVER BC option value	AIN BearerCapability value
SPEECH	speech
64KDATA	b64kbps

**Table 918 Mapping of TRAVER BC option to AIN BearerCapability values (Con-**

TRAVER BC option value	AIN BearerCapability value
64KX25	packetModeData (Note 1)
56KDATA	b56kbps
DATAUNIT	b56kbps
64KRES	b64kbps (Note 2)
3_1KHZ	f31kHzaudio
7_KHZ	f7kHzaudio
VOICE_DATA	(Note 3)
64K_RATE_AD_DATA	(Note 3)
<b>Note 1:</b> Not supported by AIN Service Enablers	
<b>Note 2:</b> Not supported due to GR restriction	
<b>Note 3:</b> Not supported by DMS-100 switches	

### 22.8.3 CallingPartyBGID

Parameter CallingPartyBGID is sent to provide the business group information associated with the originating user. The business group identifier either identifies a basic business group (BBG) or a multi-switch business group (MBG).

Parameter CallingPartyBGID can be derived from datafill for a line, BBG trunk, and MBG trunk originators. For other SS7 originators, the BGID information is available at trigger SDS (PODP) only when it is signaled by the originating trunk.

To indicate the MBG information, the originating trunk would have signaled a value in a call scenario that included the MBG optional parameter on the TRAVER / AINMQG command line. The TRAVER MBG command line parameter is available when the originating agent is a trunk. Standard TRAVER command line components must be entered. After the TRAVER command and the MBG-specific data have been entered, the keyword MBG must be specified, followed by the BGID, the line privilege (LP) used by IBN translations as the network class of service, and the generic address parameter (GAP), that is used to transport private numbers.

The following example shows how to specify the national BGID number 4, with class of service 0 and no GAP. The originating switch translated the dialed digits into a reference for DN 7228049 and sent the call to this switch.

The GAP value is not yet used by TRAVER / AINMQG. Entering N for the GAP states that no GAP is associated with the incoming call, otherwise, the digits dialed by the originator should be provided here.

Figure 480 on page 504 provides a sample TRAVER output using MBG and AINMQG options.

**Figure 480 Sample TRAVER output using MBG and AINMQG options**

```

>traver tr isvapn2wibn mbg natl 4 0 n 5727228049 ain ainmqg b

MBG CALL: CUST xla on Cd_DN
TABLE TRKGRP
ISVAPN2WIBN IBNT2 0 ELO NCRT COMKODAK 0 MIDL 0 7224111 ANSDISC 0 Y N N N N N N 0 0
N 0 0 0 0 N N N N N N N N Y FGD Y N NATL $
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN OFFICE_TRIGGRP OFCTRIG
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 5 COL L 1
TABLE IBNXLA: XLANAME PXDK
PXDK 572 ROUTE N N 3 N 3 15 NDGT Y S AIN_DUMMY_TRK $
TABLE DIGCOL
NDGT specified: digits collected individually
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. . TABLE TRIGDIG
. . CDPDIG CDPCODE 572 CDPCODE TRANS EVENT TCAP R02 SS7 AINROCK DFLT $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
WARNING: AINCHG option is not specified for trunk on command line and
GTV could not be determined and defaults to 0.
. . . TABLE C7GTT
. . . AINROCK 0000000000 0000000000 PCSSN (AINTATM RTESET2 AIN01 0) $ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter CallingPartyID: <Nature of Number> <Digits>
>3 6137222
Defaults are used for <Numbering Plan>, <Presentation Indicator>, <Screening
Indicator>
Please enter ChargePartyStationType: <0..99>
>27
Please enter storage location:<File Device> <File Name>
>sfdev cdp4

AINMQG Query message saved in file
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met
Querying the database would occur now
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

The following list provides a breakdown of the sample TRAVER output in Figure 480:

- The attendant status (AttSt) field indicates whether the party identified by the party selector is an attendant. TRAVER / AINMQG sets this value to No Indication. The field's value can be reset to Attendant line in TstQuery prior to sending the constructed message.
- The business group identifier type (BGID tp) subfield indicates the service associated with the business group identifier. The value indicating BG Identifier is always used.
- The line privileges information indicator (LP II) indicates whether the restrictions are fixed line privileges or customer-defined line privileges. GR-1299-CORE indicates that only the fixed line privileges value is legal in the current network; customer-defined line privileges is reserved for future use, but is available from the command line.
- The party selector subfield indicates the call party that the business group information applies. TRAVER / AINMQG always sets this value to calling party number. Note that redirecting number is the other legal value for the party selector field. It can apply in simulations of a both intra- and inter-switch call forwarding scenarios. The party selector field can be reset to this value in TstQuery prior to sending the generated message.
- The business group ID is a 3-octet field used to indicate the business group the party identified by the party selector belongs to. Business group IDs are uniquely assigned to customers across all networks as the business group customer subscribes to business group services. For MBG lines and trunks this is derived from table BGDATA and/or the MBG option to a trunk originator on the command line. When both sources are available, then the command line option's value is used.
- The Sub-group ID is a 2-octet field defined by the customer to indicate the sub-group membership of the party, identified by the party selector, within the customer's organization. Since the subgroup-ID field is not supported by ISDN user part (ISUP) messaging on the DMS-100 SSP, TRAVER / AINMQG does not prompt for a value for this field; instead it always zeros out the octets that GR-1299 defines as no indication.
- The LP field is defined by the customer to indicate the line privileges of the party identified by the party selector. When the LP II field is set to fixed line privileges, the LP field is divided into two subfields to represent the terminating and originating restrictions, respectively.

Currently GR-1299-CORE indicates that only the unrestricted and spare values are expected in the current network. TRAVER / AINMQG defaults to the unrestricted value. Note that this field is unrelated to the LP field of the MBG TRAVER option.

### 22.8.4 CalledPartyID

This parameter contains the address of the called party when the SSP detects the SDS, N11 or Termination\_Attempt trigger. It follows the AIN Digits format.

For public calls triggering at SDS and N11, Table 919 specifies the values that can populate the CalledPartyID fields.

**Table 919 CalledPartyID field values for public calls**

CalledPartyID field	Values
Numbering Plan	ISDN
Digits	10 digits for national or local calls 3 to 5 digits for international calls 3 to 5 digits for international calls

The value of the Nature of Number fields is determined through translations.

For private calls triggering at Termination\_Attempt, Table 920 specifies the values that can populate the CalledPartyID fields:

**Table 920 CalledPartyID field values for private calls**

CalledPartyID field	Values
Nature of Number	Not Applicable
Numbering Plan	Private
Digits	10-digit address

### 22.8.5 CallingPartyID

Table 921 contains the rules TRAVER uses to populate the fields of the CallingPartyID parameter.

**Table 921 TRAVER population of CallingPartyID parameter based on call type**

CallingPartyID field	Line Originator	Trunk Originator
Digits	10-digit DN of the originating line (when a 7-digit then use prefix NPA)	The values are prompted for.  To see the values that are possible for these fields, see TR317 for ISUP and see TR1268 for PRI. (Note 1)
Nature of Number	unique national number or non-unique national number	
Numbering Plan	ISDN	
Presentation Restriction Indicator	presentation allowed or presentation restricted (Note 2)	
Screening Indicator	network provided	
<p><b>Note 1:</b> For PRI trunks the mapping in document TR444 is used and for ISUP trunks there is a 1:1 mapping.</p> <p><b>Note 2:</b> This information is found in either DNATTRS or the LENFEAT, IBNFEAT or KSETFEAT tables.</p>		

For trunks, the digit field is populated as follows:

- for ISUP trunks, prompt
- for PRI trunks (in order of precedence):
  - prompt
  - BILLNO in LTDATA
- for MF trunks
  - when the trunk is PX, use BILLNO in TRKGRP
  - prompt
- for VFGs, prompt

### 22.8.6 Carrier

Parameter Carrier contains the Carrier Selection information and the Carrier Identification, identifying where a call should be routed. Parameter Carrier is only applicable when the office is an equal access end office (EAEO).

The carrier is specified as XXX or XXXX and it can be entered on the command line, picked up through translations or subscribed. In all cases, the Carrier ID field of this parameter is derived from table OCCINFO, unless the CarrierID was specified in a response to a prompt. Unless otherwise specified, the Carrier Selection field is populated with “Selected carrier identification code presubscribed and not input by calling party”.

At trigger Off-Hook\_Immediate (applies to lines only) the carrier is populated with the primary inter-LATA carrier. When no inter-LATA carrier is subscribed to by the user, the office default inter-LATA carrier is used. Otherwise, parameter Carrier is not populated at trigger Off-Hook\_Immediate.

At other triggers the Carrier ID is chosen in the following order:

- when the call is a public 0- operator assisted call, populate the Carrier ID with the “LEC” carrier code (0110)
- at the Info\_analyzed and Network\_Busy TDPs, when the agent is an ATC trunk then populate the CarrierID with the “LEC” carrier code (0110)
- when the 10XXX, 101XXXX, “tns” or “cic” parameter is specified on the command line
  - Carrier is picked up from command line
  - for trunks, the Carrier Selection field is populated with “No indication”
  - for lines the value of the Carrier Selection field is dependent on the user’s carrier pre-subscription status
- when the trigger is Shared\_Interoffice, then the carrier specified on the command line is used; Carrier Selection is populated with “No indication”; Otherwise the Carrier parameter is not populated

- for VAPN trunks, at the Info\_Collected TDP, trigger Off-Hook\_Delay, populate the CarrierID with the “LEC” carrier code
- when the carrier is not specified on the TRAVER command line
  - for public MF and ISUP trunks
    - at trigger Off-Hook\_Delay, Network\_Busy and Info\_Analyzed TDPs, prompt the user for the Carrier ID and Carrier Selection fields
    - in all other cases, parameter Carrier is not populated
  - for private MF and ISUP trunks
    - at the Origination\_Attempt and Info\_Collected TDPs, parameter Carrier is not populated
    - at the Network\_Busy and Info\_Analyzed TDPs, populate the Carrier ID with the “LEC” carrier code (0110)
  - for all other agents, CarrierID is picked up through the following
    - translations data (for example, IBNXLA EA option, LTCALLS)
    - subscription data
      - DNATTRS or LTDATA (PRI trunks)
      - FEAT tables, such as LENFEAT, IBNFEAT, KSETFEAT
    - at trigger Off-Hook\_Delay, the user’s primary inter-LATA carrier is employed
  - at the Info\_Analyzed and Network\_Busy TDPs, when the call is intra-LATA non-toll, the “LEC” carrier code is used (0110)

### 22.8.7 CarrierID

Parameter CarrierID of the AINMQG output includes field NatureOfCarrier. For example:

1. DN A is an SDS number.
2. An SDS Query is sent and Analyze\_Route response received containing CarrierUsage and Carrier parameters, as well as a CalledPartyID (containing DN C).
3. Let DN C also be an SDS number.

When the SDS query from DN C is sent (serial triggering), the NatureOfCarrier parameter is populated with ‘NoNOCProvided’. The file generated by AINMQG contains parameter NatureOfCarrier. See the examples that follow.

**Figure 481 TRAVER with AINMQG Option**

```
>traver tr isupicitt 3203311022 AINMQG nt

AIN Term Attempt TDP: trigger criteria met.
Querying the database would occur now.
Building AINMQG Query Message option to save the query to a file for
use in TstQuery.
Please enter storage location:<File Device> <File Name>
>sfdev pop
AINMQG Query message saved in file.
Use the AINRES option for further information
```

**Figure 482 TRAVER File resulting from AINMQG option**

```
SetAppl R02
SetMsg Info_Analyzed
BearerCapability speech
CalledPartyID 3 1 6136671022
CallingPartID 3 1 6136671000
Carrier 1 0 0488 =====> Carrier Selection, NatureOfCarrier, CIC
ChargeNumber 3 1 6136671022
Lata 0 0 111
TriggerCriteriaType npa
UserID DN 6136671000
```

### 22.8.8 ChargeNumber

This parameter is populated by the AINCHG option when it appears on the TRAVER command line and the supplied charge number is 10 digits. For lines, the AINRES option must also appear on the command line, otherwise, the AINCHG number is ignored. When the AINCHG option does not appear on

---

the command line, the population of the parameter is dependent on the agent as follows:

- for lines (in order of precedence):
  - SPB datafilled in one of the “FEAT” tables
  - CallingPartyID parameter value
- for ISUP trunks (in precedence order):
  - BILLNO option on TRAVER command line
  - billing number datafilled in the TRKGRP table, when applicable
  - derived CallingPartyID parameter
- for local MF/PTS trunks (in order of precedence);
  - BILLNO option on TRAVER command line
  - billing number datafilled in the TRKGRP table, when applicable
- for PRI trunks (in order of precedence):
  - BILLNO option on TRAVER command line
  - billing number datafilled in the TRKGRP table, when applicable
  - charge number in Table LTDATA/LTDEFS
  - derived CallingPartyID parameter
- for VFG trunks (in order of precedence):
  - BILLNO in the VIRTGRPS table (only when BILLNO can be derived to 10 digits)
  - derived CallingPartyID parameter

### 22.8.9 ChargePartyStationType

Parameter ChargePartyStationType indicates the type of calling party based on its originating line information. This parameter is relevant when parameter ChargeNumber is built.

When the originating agent signals for the ANI information of the calling or Charge party, and this parameter is legal for the message, then TRAVER/AINMQG checks whether the required information is provided on the command line (MF trunks only, in the optional parameters BILLNO and BILLMFST\_CIC). When required, TRAVER/AINMQG prompts the user for the information required to build the parameter.

Automatic number identification (ANI) forms the Bellcore-defined information digits used to identify the type of originating line, special characteristics of the calling number, or certain service classes. ANI digits

include the hotel or motel room identification digits and the restricted sent paid (RSP) digits.

Flexible automatic number identification (FANI) are special purpose ANI digits defined by the operating company to identify special types or characteristics of calls that have less widespread applications and are not covered by the general Bellcore definitions. FANI information digits apply to outgoing equal access (EA) and the EA corridor, but are subscribed against the originator of the call or a virtual facility group (VFG).

Two-digit pair digits ranging from 00 through 99 can be used as FANI information digits, although the selected digit pair has already been defined by Bellcore as a standard two-digit ANI information digit code.

FANI representation is used to populate parameter ChargePartyStationType when the FANI option is subscribed to the originator. When the FANI option is not subscribed, then the ANI identification classification is used to populate parameter ChargePartyStationType.

When ISUP trunks have subscribed to STATCLASS datafill on the switch, ChargePartyStationType can be derived from the STATCLASS datafill. The TRAVER does not support OLI information (supplied for TRUNK) as a command line parameter, nor there is any way it can be supplied in the dialed digits. For ISUP trunks, the datafill is performed in table SSPTKINF. The user must determine (ahead of time) that the parameter is relevant because the trunk signaled it. Then AINMQG prompts for the ChargePartyStationType only when the call triggers and there is no STATCLASS datafill on the switch for the trunk.

For trunk originators TRAVER/AINMQG prompts the user for the ChargePartyStationType value when the trunk is datafilled to request ANI ID digits or originating line information and no information is provided on the command line. Note that for some MF trunks the identification digits can be prefixed to parameter <BILLNO> on the command line with the appropriate <BILLMFST\_CIC> option value (one of {ST3P, STP, ST2P, ST, STKP}).

When it is possible to determine the number of expected information digits TRAVER / AINMQG indicates the number in the prompt for the digits and enforces this count. When the user wants to override the datafill and provide a different number of digits, they can alter the parameter's value after they read the query into TstQuery.

When the originator is not subscribed to FANI, the user should enter a value from Table 922. The legal values and their interpretations are available at the by typing help.

**Note:** On-line help is available. Type help at the parameter prompt to review the list of supported selections.

**Table 922 ANI ChargePartyStation types and value entries**

Station Type	Value entry
IdentifiedLine - No Special Treatment	0
ONI (Multiparty)	1
ANIFailure (unavailable)	2
Hotel (without room identification)	6
Coinless, Hospital, Inmate, etc.	7
InterLATA Restricted	8
AIODListedDNSent	20
Identified (or Combined) line (coin or no coin)	23
800	24
Coin Call	27
AIN 0.1	64
InterLATA restricted - hotel line	68
InterLATA restricted - coinLess line etc.	78
Test Call	95

### 22.8.10 CollectedAddressInfo

Parameter CollectedAddressInfo contains the digits the user dialed after a VSC or an access code that match triggers AIN VSC, CDPCODE, SFC, PODPFEAT, or INTEROFF. Either parameter CollectedAddressInfo or parameter CollectedDigits can be sent when address digits are present and a trigger at the Info\_Collected and Info\_Analyzed TDPs is encountered.

Table 923 contains parameter selection criteria. The presence of the VSC or AccessCode is dependent upon whether triggers Customized\_Dialing\_Plan or

Specific\_Feature\_Code is applicable to the call. When neither of these triggers is subscribed, then parameter CollectedAddressInfo is built.

**Table 923 Determination for sending CollectedDigits or CollectedAddress Info**

Message	Trigger	VSC or Access Code present	IBNXLA or XLANAME QueryAft Datafill	- (neither), CollectedDigits or CollectedAddressInfo
Info_Collected	OffHook_Delay (OFFHKDEL), Channel_Setup_PRI (PRIB)	yes	"fixed" or "var"	Digits
			"norm"	Address
	no	-	Address	
	Shared_interoffice_Trunk (INTEROFF)	-		Address
Info_Analyzed	Customized_Dialing_Plan (CDPCODE), Specific_Feature_Code (SFC),	yes	"fixed" or "var"	Digits
			"norm"	Address
	Public_Feature_Code (PODPFEAT), One_Plus_Prefix (oneplus), Specified_Carrier, International, Operator_Services	yes	"fixed" or "var"	Digits
		no	"norm"	Address

The values used in populating parameter CollectedAddressInfo are identical to those used for parameter CalledPartyID, with the following exceptions:

- The Digits field for a local call is populated with just the digits dialed (that is, seven digits, NPA not prefixed).
- For CDPCODE triggering at extension numbers, the RPRTDIGS field of the CDPCODE subscription in table TRIGDIG determines how the digits are populated. For RPRTDIGS with value trans the 10-digit NA number is provided. For RPRTDIGS with value NOTRANS, the digits are provided exactly as they were dialed.

The presentation restriction indicator and screening indicator fields are not relevant and are not coded.

### 22.8.11 CollectedDigits

Parameter CollectedDigits contains the digits the user dialed after a VSC, or an access code that matches an AIN VSC, CDPCODE, or PODPFEAT trigger.

Parameter CollectedDigits or parameter CollectedAddressInfo can be sent when address digits are present and one of the following triggers is detected: trigger Off-Hook\_Delay, or CDPCODE.

Table 923 “Determination for sending CollectedDigits or CollectedAddress Info” on page 514 indicates the parameter that is built into the message, depending on the matching trigger and the datafill in tables IBNXLA or XLANAME.

The values used to populate parameter CollectedDigits are as follows:

- When there are additional dialed digits after the access code digits on the TRAVER command line, these digits are used by TRAVER/AINMQG to populate parameter CollectedDigits. These digits follow a vertical service code, access code, or feature activation indicator.
- Nature of number is coded as not applicable.
- Numbering plan is set to unknown or not applicable.

The presentation restriction indicator and screening indicator fields are neither relevant nor coded.

### 22.8.12 LATA

Parameter LATA is sent by the SSP to the SCP or adjunct. The appropriate equal access tables must be datafilled (for example, LATANAME or RATEAREA). The LATA to be used is that of the triggering facility. TRAVER does not support LEAS trunks in the TRKLATA table.

Parameter LATA uses the AINDigits format, with the fields populated as follows:

- nature of number is set to “not applicable”
- numbering plan is set to “unknown or not applicable”
- field digits contains the digits corresponding to the LATA are derived through translations (that is, RATEAREA)

*Note:* The digits are in table LATANAME.

### 22.8.13 NetworkSpecificFacilities

Parameter NetworkSpecificFacilities is sent to identify the particular service requested by an incoming PRI trunk (to be included in a query) or the SCP (when included in a response). A PRI signals the NSF in a Network Specific Facilities information element (IE) in its SETUP message. This IE is optional.

The SCP can signal an NSF parameter in an Analyze\_Route response. When the SCP provides an NSF parameter, use its value for any further TRAVER AIN\_RES work for that call.

When the NSF parameter is relevant, the existing NSF parameter is included on the command line as shown in Figure 483 on page 516.

**Figure 483 TRAVER NSF option in context**

```

>q traver

PERFORMS TRANSLATION VERIFICATION ON <DIGITS>
AS WHEN RECEIVED ON ORIGINATOR <ORIG>. TRACE GIVES A TRACE
OF THE TRANSLATION TABLES WHEN <T>, AND GIVES THE ROUTE
AND DIGIT-TO-OUTPULSE DISPLAY WHEN <NT>
Parms: <ORIG> {
        :
        }

<DIGITS OR N FOR NO DIGITS> STRING
[<CDNIE> ...]

[<NSF> {OWTSID [<FACNUM> {0 TO 32767}],
PRVT [<FACNUM> {0 TO 32767}],
IWT [<FACNUM> {0 TO 32767}],

OWT <ZONE> {0,
            1,
            2,
            3,
            4,
            5,
            6,
            7,
            8,
            9,
            A,
            B,
            C,
            ONE},

FX [<FACNUM> {0 TO 1023}],
TIE [<FACNUM> {0 TO 1023}],
ASDS,
LDS,
HM,
SCOCS [<FACNUM> {0 TO 1023}]]

[<TNSIE> ...]

[<AIN_OPTIONS> {AIN [<AIN_CHG> {AINCHG <DIGITS> STRING}]
                [<AIN_MQG> {AINMQG}]]]

```

When TRAVER is invoked with the AINMQG option, the NSF option, and a PRI originator for a call that triggers at the Info\_Analyzed TDP, the TRAVER/AINMQG composes a NetworkSpecificFacilities value using the following rules for its fields:

- network identification is a 3 or 4 decimal, digit carrier identification code that is interactively prompted for
- facility coding value is derived from the NSF option on the command line, see Table 924 “Supported Facility coding values” for NSF options.
- The Service Parameter field is derived from the NSF parameter on the command line. It can be up to 5 decimal digits long and indicates the

specific facility (trunk or zone) requested. The NTNA PRI and NI PRI agents currently support up to four decimal digits for the service parameter on the DMS SSP.

**Table 924 Supported Facility coding values**

Supported Facility Coding Value	NSF Option on TRAVER command line
INWATS Selection	IWT
OUTWATS Selection	OWT <ZONE> {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, NONE}, or OWTSID [<FACNUM> {0 TO 32767}]
Foreign Exchange Selection (FX)	FX [<FACNUM> {0 TO 1023}]
Terminal Interface Equipment (TIE) Trunk	TIE [<FACNUM> {0 TO 1023}]
Hotel/Motel Service	HM
Selective Class of Call Screening (SCOCS)	SCOCS [<FACNUM> {0 TO 1023}]}

#### 22.8.14 Prefix

Parameter Prefix is used to indicate that a 1+ prefix was dialed by the user with or without other prefixes. TRAVER/AINMQG builds parameter Prefix when a 1+ prefix is provided in the dialed digits or when the AINRES prefix option is present.

#### 22.8.15 TriggerCriteriaType

This parameter indicates the type of event that caused a trigger to occur. For triggers involving digit criteria, the trigger encountered is determined by the individual, group and office subscription data.

Table 472 “TriggerCriteriaType parameter values” lists the triggers that TRAVER can encounter and the corresponding TriggerCriteriaType value populated in parameter TriggerCriteriaType.

**Table 925 TriggerCriteriaType parameter values**

Trigger Encountered	TriggerCriteriaType Value
Off-Hook_Immediate	offHookImmediate
Off-Hook_Delay	offHookDelay
Channel_Setup_PRI	channelSetupPRI
Shared_Interoffice_Trunk	sharedIOTrunk

**Table 925 TriggerCriteriaType parameter values (Continued)**

Trigger Encountered	TriggerCriteriaType Value
Specific_Feature_Code	specificFeatureCode
Public_Feature_Code	verticalServiceCode
Office_Public_Feature_Code	verticalServiceCode
Customized_Dialing_Plan_Access	customizedAccess
Customized_Dialing_Plan_Intercom	customizedIntercom
three-digit_PODP	npa
four-digit_PODP	npaN
five-digit_PODP	npaNX
six-digit_PODP	npaNXX
seven-digit_PODP	npaNXXX
eight-digit_PODP	npaNXXXX
nine-digit_PODP	npaNXXXXX
ten-digit_PODP	npaNXXXXXX
N11	n11
Termination_Attempt	terminationAttempt
Automatic_Flexible_Routing	aFR
onePlus	onePlus
specifiedCarrier	specifiedCarrier
international	international
Operator_Services	zeroPlus
<b>Note:</b> - = Not applicable	

### 22.8.16 UserID

This parameter contains the identity of the triggering facility. In situations where triggering occurs at or after the Termination\_Attempt trigger the terminating facility is the subscriber of trigger Termination\_Attempt.

In the case of the triggering agent being a trunk, since TRAVER never allocates facilities, it cannot know whether the trunk is PRI or ISUP. Therefore, by default, trunk subgroup 0 is used as the agent.

UserID is a mandatory query parameter. Therefore, for lines, VFGs and PRI trunks, failure to derive a calling party number for building the UserID parameter results in no query message being built and nothing being saved to file. TRAVER issues a warning to this effect.

The values supported for the UserID parameter are:

- DN
  - for a line, uses the ten digit DN of the line
  - for PRI trunks, the DN is derived from the calling party number. The calling party number is derived
    - when the received or derived calling party number is ten digits in length then it is used to populate parameter UserID
    - otherwise, the default calling party number associated with the trunk group is taken from table LTDATA (DN option) and is used to build parameter UserID
    - otherwise when a ten-digit DN is associated with the trunk group in the BILLDN field of table TRKGRP, then it is used to populate parameter UserID.
  - for VFGs the 10-digit derived CallingPartyID is used
- TrunkGroupID—populated with the contents of field ADNUM in the CLLI table, corresponding to the name of the public trunk.
- PrivateFacilityGID—populated with the contents of field ADNUM in table CLLI, corresponding to the name of the private trunk.

#### **22.8.17 VerticalServiceCode**

The VerticalServiceCode parameter contains the SCP vertical service code collected from the SSP (usually of the form \*XX). The SCP VSC parameter is only supported for RES lines at the PFC trigger.

The fields of this parameter are populated as follows by TRAVER:

- Nature of Number is set to “not applicable”.
- Numbering Plan is set to “unknown or not applicable”.
- the digits field contains a VSC of one to ten digits inclusive, but the first digit can be an asterisk (\*) or octothorpe (#). Both the asterisk or octothorpe should be sent with the digits in a query message. This field is populated in the same way as the SCP feature access codes (\*XX) in the AccessCode parameter.

## 22.9 TRAVER example 1

Table 926 illustrates a sample TRAVER output.

**Table 926 Example TRAVER output**

```
traver 1 6255000 2545000 b
TABLE IBNLINES
HOST 02 0 05 03 0 DT STN RES 6255000 200 $
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPTS 10 NIL NILSFC LATA1 0 NIL NIL 00
Y RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS PRELIM XLA name is NIL. Go to next XLA name.
CUST PRELIM XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
(NET N N 0 N NDGT N Y GEN ( LATTR 262) (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
```

**Table 926 Example TRAVER output (Continued)**

```

TABLE LINEATTR
262 1FR NONE NT FR01 0 613 EAP1 L613 TOPS 0 NIL NILSFC LATA1 0 NIL NIL 00
Y RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
EAP1 ( 1) (65021) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 2 4 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 932 2 ( 424) ( 1) ( 84) ( 0) 2
. SUBTABLE HNPACODE
. . 254 255 LRTE 719
AIN Info Collected TDP: no subscribed trigger
TABLE TRIGGRP
CDPCODE INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
. CDPCODE ( DG CDPTRAF)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. . TABLE TRIGDIG
. . . PODPDIG PODP 6132545000 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE C7GTT
. . . AINJAZZ 6132545000 6132545000 SSNONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG Option to save the query to a file for use in TstQuery
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

## 22.10 TRAVER example 2

Figure 484 shows output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a datafilled R02 SDS trigger.

**Figure 484 TRAVER example: datafilled R02 SDS trigger**

```
>traver 1 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
.
<stuff deleted>
.
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . AIN PODP trigger: AIN 0.2 trigger bypassed as AIN00210 SOC
Option is IDLE.
AIN Info Analyzed TDP: trigger criteria not met.
.
<stuff deleted>
.
+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES
.
.<stuff deleted>
.
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>
```

## 22.11 TRAVER example 3

Figure 485 on page 523 shows the displayed output when AIN Service Enablers is IDLE, AIN Call Management is ON, for a datafilled R0.2 SDS and R0.1 triggers. The R0.2 PODP trigger has precedence over the R0.1 trigger as the digits criteria for the R0.2 PODP trigger is a more specific match.

**Figure 485 TRAVER example: datafilled R0.2 SDS and R0.1 triggers**

```

>traver l 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
<stuff deleted>
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT $
      AIN PODP trigger: AIN 0.2 trigger bypassed as AIN00210
SOC Option is IDLE.
. TABLE TRIGDIG
. PODPDIG PODP 21325452 PODP EVENT TCAP R01 SS7 AINJAZZ DFLT $
. . TABLE C7GTTYPE
. . AINJAZZ ANSI7 3 $
. . TABLE C7GTT
. . AINJAZZ 21325452 21325452 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database. Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met, querying the
database.

Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++
>

```

## 22.12 TRAVER example 4

Figure 486 on page 524 shows the displayed output when AIN Service Enablers is ON, AIN Call Management is ON, for a datafilled R0.2 SDS trigger.

**Figure 486 TRAVER example: AIN Service Enablers is ON, datafilled R0.2 SDS trigger**

```

>traver l 6218034 2132545200 b
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL
NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
.
.
<stuff deleted>
.
.
TABLE TRIGGRP
OFCTRIG INFOANAL
. N11 ( DG N11DIG)$ NIL
AIN N11 trigger is applicable to office.
. PODP ( DG PODPDIG)$ NIL
AIN PODP trigger is applicable to office.
. . TABLE TRIGDIG
. . PODPDIG PODP 2132545200 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE C7GTT
. . . AINJAZZ 2132545200 2132545200 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

>

```

## 22.13 Option AINRES

Option, AINRES, simulates processing of certain responses from an off-board processor. With this option, the TRAVER displays the AIN information encountered after the specified response is received. Hence, none of the pre-query information is displayed. There are four response messages supported by the AINRES option:

- *Analyze\_Route*—With this response, the terminating agent parameter must be a DN, a route list or a carrier. When the terminating agent is a route list, the call resumes at the Selecting Route point in call and the only TDPs that can be encountered are Network Busy and Termination Attempt. When the terminating agent is a DN or carrier, simulation of the call resumes at the

Analyzing Information point in call and only the Information Analyzed, Network Busy and Termination Attempt TDPs can be encountered.

- *Forward\_Call*—This option operates in the same manner as the Analyze\_Route response option.
- *Continue*—TRAVER output begins at the Information Analyzed TDP. The purpose of the Continue response is to instruct the SSP to continue processing at the next trigger in the Information Analyzed TDP. Since this is only a simulated call and it is not known that trigger was last processed, TRAVER displays all triggers subscribed by the originator at the Information Analyzed TDP and continues simulation of the call. The Network Busy and Termination Attempt TDPs can be encountered.
- *Authorize\_Termination*—The AINRES TRAVER AT (Authorize Termination) option allows routing and billing information to be displayed after encountering the Termination Attempt TDP. When this option is used, the Origination Attempt (ORIGATT), Information Collected (INFOCOL) and Information Analyzed (INFOANAL) TDPs are not displayed in the TRAVER, but the Termination Attempt (TERMATT) TDP is displayed.

See Section 22.20.7 “TERMATT” on page 571.

### 22.13.1 TRAVER for AIN Service Enablers

TRAVER supports R02 as a parameter to the AINRES option. When set to R02, AINRES behaves identically to R01 AINRES except that the STR option is also support. The STR option allows verification of routing to the IP address.

Also, the response to the STR option is identical to the response for the AR value.

When using TRAVER to simulate the routing of a call to an IP in response to a Send\_To\_Resource message, TRAVER has the following limitations:

- TRAVER encounters any applicable AIN triggers and stop processing, displaying a message indicating that a query is launched to the database, whereas the real call does not trigger.
- Although the actual routing to an IP fails when the terminator is not an ISUP or PRI trunk, no error message is displayed by TRAVER in this case.

To avoid AIN triggers when simulating the routing of a call to an IP, use the AINRES CONT option to bypass triggering at all AIN TDPs up to and including the Information\_Analyzed TDP.

For example, to simulate the routing to an IP on an intermediate or remote SSP from an ISUP trunk to another ISUP trunk (for the intermediate SSP scenario) or a PRI trunk (for the remote SSP scenario), enter the following command:

```
> traver tr <CLLI of incoming_trunk>  
<inpulsed_digits> ainres r02 cont b
```

See Section 22.21 “TRAVER example of routing to an IP” on page 573.

### 22.13.2 Collect\_Information response message

The AINRES portion of TRAVER processes the Collect\_Information response message.

TRAVER supports the same set of translations related message parameters of the Collect\_Information message as the DMS SSP call processing portion, namely CollectedDigits.

Collect\_Information response processing in TRAVER is very similar to a regular TRAVER without the AINRES option. The CollectedDigits parameter can be treated in much the same way as the terminating DN parameter of a regular TRAVER invocation. One major difference is that the CollectedDigits parameter can contain multiple dialing plan elements such as DNs and feature codes. The multiple dialing plan elements are normally separated by either a ‘\*’ or ‘#’ digit. (Note: ‘b’ represents ‘\*’ and ‘c’ represents ‘#’ in TRAVER)

In one invocation of TRAVER the first dialing plan element in the CollectedDigits parameter is extracted. This extracted dialing plan element corresponds to the terminating DN parameter of TRAVER. Therefore, once the first dialing plan element is parsed, it is translated by existing TRAVER code as in the case of a regular TRAVER. This is true where the division between two dialing plan elements is unambiguous (that is when dialing plan elements are delimited by ‘#’ or ‘\*’). The ambiguous case can occur when two dialing plan elements are not separated by a delimiter. In this case we say that a dial plan element has excess digits since some digits at the end do not belong to it. TRAVER handles these cases by mapping the first digits to some DN or feature code and ignoring the rest.

*Note:* Subsequent dialing plan elements require further invocations of TRAVER since only one dialing plan element is processed in one invocation.

Another difference between the Collect\_Information and regular TRAVER cases is the TDPs that display. In a regular TRAVER, the Origination\_Attempt, Info\_Collected, Info\_Analyzed, and Termination\_Attempt TDPs can be displayed. In the Collect\_Information case, the Origination\_Attempt TDP never gets displayed. The reason for the difference is that TRAVER with a Collect\_Information response begins processing at the Collect\_Information PIC, whereas a regular TRAVER begins processing at the O\_Null PIC. Therefore any triggers that can be encountered at the Info\_Collected, Info\_Analyzed, and Termination\_Attempt TDPs can be triggered when the Collect\_Information (COLINF) response has been specified.

In the case of an ISDN originating agent, the Bearer Capability routing characteristic can be used with the COLINF option. In order to use it, the BC option must be included on the command line. The COLINF option is not compatible with all other types of ISDN routing characteristics. TRAVER terminates with an error message when the CDN, TNS, or OSA options appear whenever the COLI option is used.

Note that the AINRES FGD option is not compatible with COLINF. When present, TRAVER terminates with an error message. Also the DIGCONV option is not compatible with COLINF. When DIGCONV is present, then it is disabled and a warning message is displayed. The rest of the TRAVER output appears as when that option was never entered.

#### **22.13.2.1 Example 1: Collect\_Information with ACB**

From an IBN line (6213811), CollectedDigits has a single dialing plan element, ACB feature code (\*66). See TRAVER 487 on page 528

An AIN Collect\_Information response is received at the SSP. The call routes to the ACB feature.

#### **22.13.2.2 Example 2: Collect\_Information with CNDB**

From an IBN line (6213811), CollectedDigits (\*67#6211811) has two dialing plan elements, CNDB feature code (\*67) and the terminating DN (6211811) (DN that the CNDB feature applies to). See TRAVER 488 on page 529 and TRAVER 488 on page 529.

TRAVER 489 on page 530 shows the resulting TRAVER for the first dialing plan element. An AIN Collect\_Information is received from the SSP. The call routes to the CNDB feature. The CNDB feature expects digits. The second dialing plan element (6211811) contains the digits used by CNDB. This is shown in TRAVER 489 on page 530 where a separate TRAVER invocation is used to see the call route to the second dialing plan element.

#### **22.13.2.3 Example 3: Collect\_Information with ISDN originator using Bearer Capability (BC)**

From an ISDN line (7225115) with 56KDATT Bearer Capability, CollectedDigits (25511) has a single dialing plan element containing a 9 plus a 7 digit DN. See TRAVER 490 on page 532.

An AIN Collect\_Information message is received from the SSP. No more triggers are found so the call attempts to terminate to line 6561234 over an ISUP trunk that has been datafilled to make the call route over ISUPIBNOG (a bearer capability of 56KData is specified).

### 22.13.2.4 Example 4: Off-Hook-Delay trigger after Collect\_Information response

From a line (6218007), CollectedDigits (6136212111), the TRAVER shows the Off-Hook-Delay trigger activating after a Collect\_Information response is sent from the SCP. This results in a new query being sent to the SCP. See TRAVER 491 on page 535

### 22.13.2.5 Example 5: Equal Access routing

From a line originator (6212111), and CollectedDigits (1048816707227512) that has a CAC + DN, the TRAVER shows the call routing over a carrier trunk (ISUPITEAOG). See TRAVER 492 on page 536.

**Figure 487 Sample TRAVER output for an ACB feature code**

```
>traver l 6136213811 n ainres r02 colinf b66 b
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPTS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFPEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 66 FEAT N N ACBA
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
```

**Figure 487 Sample TRAVER output for an ACB feature code (Continued)**

```

. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Feature ACBA          not supported by TRAVER

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

TRAVER 488 provides a sample TRAVER output for a Collect\_Info CNDB+DN.

**Figure 488 Sample TRAVER output for a Collect\_Info CNDB+DN**

```

>traver l 6136213811 n aines r02 colinf b67c6211811 b
WARNING: ONLY COLINF DIGITS 'B67' ARE CONSIDERED
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX

```

**Figure 488 Sample TRAVER output for a Collect\_Info CNDB+DN (Continued)**

```

RXCFNXXX 67 FEAT N N CNDB
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Feature CNDB          not supported by TRAVER

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 489 Sample TRAVER output for a routing number**

```

>traver l 6136213811 n ainres r02 colinf 6211811 b
TABLE IBNLINES
HOST 00 1 01 21 0 DT STN RES 6213811 400 613_EAP1_210 L613_LATA1_0 613 $
TABLE LINEATTR
400 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_210 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_210 FR01 613 EAP1 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES

```

**Figure 489 Sample TRAVER output for a routing number (Continued)**

```

TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 6 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR ARE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $) $ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1811 L HOST 00 1 03 21
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.

```

**Figure 489 Sample TRAVER output for a routing number (Continued)**

```

TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211811          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 490 Sample TRAVER output of a Collect\_Info response for an ISDN Originator**

```

>traver 1 7225115 n bc 56kdata ainres r02 colinf 96561234 b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. 56KDATA ( BC 56KDATA $)$
TABLE KSETLINE
ISDN 121 1 DN Y 7225115 COMKODAK 0 0 613 (SFC) $ BRI UNDEF N $
TABLE DNATTRS

```

**Figure 490 Sample TRAVER output of a Collect\_Info response for an ISDN Originator (Contin-**

```

TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE KSETFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
COMKODAK AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2) ( ACR N)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK FTCOMM 0 KDK
TABLE DIGCOL
KDK 9 RPT
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME PXDK
TUPLE NOT FOUND
Default is to go to next XLA name.
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME CXDK
CXDK 9 NET N Y 1 Y POTS Y N DOD N 80 613_P621_0 L613_NILLA_4 NONE $
TABLE DIGCOL
POTS specified: POTS digit collection
TABLE LINEATTR
80 IBN NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 65 660 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $

```

**Figure 490 Sample TRAVER output of a Collect\_Info response for an ISDN Originator (Contin-**

```

. SUBTABLE HNPACODE
. 656 656 LRTE 11
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 11 T OFRT 40
. . TABLE OFRTMAP
. . . 56KDATA 40 200
. . TABLE OFRT
. . 200 N D ISUPIBNOG 0 N N
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL NP N DD UNDT
TABLE CLSVSCRC
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

Excess digits were discarded, octothorpe is
considered end of dialling character

DIGIT TRANSLATION ROUTES

1 ISUPIBNOG                6561234                ST

```

**Figure 490 Sample TRAVER output of a Collect\_Info response for an ISDN Originator (Contin-**

```
TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

**Figure 491 Sample TRAVER output of trigger Off-Hook\_Delay after a Collect\_Info Response**

```
>traver l 6136218007 n ainres r02 colinf 6211811 b
TABLE LINEATTR
18 4FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPTS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE DNATTRS
613 621 8007
(PUBLIC ( NAME 800+_RES_B) (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
HOST 00 0 16 21 R1 AIN AIN SESIM_OHD
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1811 L HOST 00 1 03 21
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
```

**Figure 491 Sample TRAVER output of trigger Off-Hook\_Delay after a Collect\_Info Response**

```

TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
SESIM_OHD INFOCOL
. OFFHKDEL ( CT VBINFO) ( ESC )$ SESIMINF
Trigger AIN OFFHKDEL is applicable to individual POTS line.
Trigger AIN OFFHKDEL: Trigger is active.
(Use AINCI CHANGESTATE command to alter activation state.)
. . TABLE TRIGESC
. . TUPLE NOT FOUND
. . TABLE TRIGINFO
. . SESIMINF EVENT TCAP R02 SS7 AINBLUES DFLT $
. . . TABLE C7GTTYPE
. . . AINBLUES ANSI7 11 $
. . . TABLE LENFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINBLUES 6136218007 6136218007 PCSSN (SIMTOOL_RTESET SIMTOOL 0) $
SSN
AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 492 Sample TRAVER output for Collect\_Information equal access**

```

>traver l 6136218007 n aines r02 colinf 1048816707227512 b
TABLE LINEATTR
18 4FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE

```

**Figure 492 Sample TRAVER output for Collect\_Information equal access (Continued)**

```

TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
613 621 8007
      (PUBLIC ( NAME 800+_RES_B) (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 907 5 16 N
. . TABLE OFRT
. . 907 CND EA INTNL SK 2
. . N D ISUPITEAOG 0 D077 N
. . CND ALWAYS SK 1
. . N D ISUPITEAOG 0 D123 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE STDPRTCT
PEAL ( 1) ( 0) 2
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1 1 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 670 671 HNPA 0
. 722 722 DN 613 722
TABLE TOFCNAME
613 722 $
TABLE DNINV

```

**Figure 492 Sample TRAVER output for Collect\_Information equal access (Continued)**

```

613 722 7512 L HOST 00 1 10 06
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNP results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL DD N DD UNDT
TABLE CLSVSCRC
EA:Local override does not apply to this call.
TABLE LATAOLA
LATA1 670 INTER INTER STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N N Y Y N LONG 14 FGRPC N N N N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route  OFRT  907 from Pretranslation
TABLE OFRT
  907 CND EA INTNL SK 2
    N D ISUPITEAOG 0 D077 N
    CND ALWAYS SK 1
    N D ISUPITEAOG 0 D123 N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

```

**Figure 492 Sample TRAVER output for Collect\_Information equal access (Continued)**

```

1 ISUPITEAOG                D0776707227512        ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

## 22.14 TRAVER and the DMS trigger item interface

TRAVER supports trigger items implemented in the DMS Trigger Item Provisioning Interface.

When the value of the AIN\_OFFICE\_TRIGGRP tuple in the DMS table OFC VAR is 'TIID' TRAVER performs office wide trigger checking using the Trigger Item Provisioning Interface.

When a supported digit string based trigger (SDS, N11, LNP) is subscribed at the INFOANAL TDP, TRAVER displays a message indicating whether the trigger is applicable or not at this TDP.

When the following conditions occur:

- the table name "TRIGITM" is displayed.
- the tuple in TRIGITM that matches the dialed digits is displayed.
- the trigger criteria for that trigger item are matched.

Then, the following items are displayed:

- the table name OFCTIID followed by the assignment tuple from the office wide trigger item assignment table OFCTIID.
- The table name TRIGITM.
- The tuple of the subscribed trigger item in table TRIGITM.
- the table name C7GTTYE.
- The corresponding tuple of table C7GTTYE.
- The table name C7GTT.
- The corresponding tuple of table C7GTT.

For AFR trigger item subscription, the AFR trigger occurs at the NETBUSY TDP, and is only encountered when all routes in the route list are busy. Since TRAVER is a call simulation, routes are not busy and criteria for this trigger are never met. Therefore, when AFR is encountered in the route list,

subscription to the AFR trigger is checked. When the AFR trigger is subscribed, a message is displayed indicating that triggering would take place when all routes are busy. Tuples from tables OFCTIID, TRIGITM, C7GTTYPE, and C7GTT are displayed.

Figure 493 on page 540 shows a typical TRAVER output.

**Figure 493 Sample of TRAVER output for Trigger Item interface**

```
>TRAVER L 6136216054 2132550001 B
TABLE IBNLINES
HOST 00 1 08 02 0 DT STN RES 6216054 200 $
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC NILLATA 0 NIL NIL
00 Y
RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN_Orig_Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS PRELIM XLA name is NIL. Go to next XLA name.
CUST PRELIM XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200) (EA ITT Y 0) $ $)$ 9
```

**Figure 494 Sample TRAVER output for Trigger Item interface (Continued)**

```

TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC NILLATA 0 NIL NIL
00 Y
RESG200 0 0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
P621 ( 1) (65021) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 213 250 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
613 Y 999 1 ( 298) ( 1) ( 84) ( 0) 3
. SUBTABLE HNPACODE
. 213 215 HNPA 0
. 255 255 LRTE 800
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG)$ NIL
Trigger AIN CDPCODE is applicable to customer group.
Trigger AIN SDS is applicable to office.
TABLE OFCTIID
SDSTRG1 04 ON
. TABLE TRIGITM
. (04 SDSTRG1) SDS 213255 ULK EVENT R02 SS7 AINJAZZ $
. . TABLE C7GTTYE
. . AINJAZZ ANSI7 3 $
. . TABLE C7GTT
. . AINJAZZ 2132550001 2132550001 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

## 22.15 TRAVER and SFC and PFC triggers

This section describes TRAVER functionality for the specific feature code (SFC) trigger and the public feature code (PFC) trigger.

### **22.15.1 TRAVER and the specific feature code trigger**

TRAVER supports the subscription, validation, criteria checking, and the verification of the translation and routing for the SFC trigger. TRAVER output displays the appropriate SOC state of the trigger and provides the verification status for BRI or RES lines. The TRAVER output shows that the trigger successfully executes.

TRAVER generates a message on encountering the SFC trigger. The message indicates when the trigger applies to the corresponding subscriber. When SOC is not active for the trigger, the system displays a warning message indicating that the SOC option must be active before the trigger can occur.

Figure 495 on page 543 shows the TRAVER output for an SFC triggered call that successfully queries the SCP or adjunct.

**Figure 495 TRAVER example: SFC triggered call successfully queries the SCP or adjunct**

```

>traver 1 6211511 b243 b
TABLE IBNLINES
HOST 00 1 14 02 0 DT STN RES 6211511 100$
TABLE LINEATTR
100 1FR NONE NT FR01 0 613 EAP1 L613 TOPS 10 NIL NILSFC LATA1 0
NIL NIL 00 Y
RESG100 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNTFEAT
HOST 00 1 14 02 0 AIN AIN SFCTRIG
TABLE CUSTSTN
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RES100 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RES100 NXLA RXCMN252 RXCFNXXX 0 RES
TABLE DIGCOLRES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 243 FTR 3 AIN IMMED
AIN Info Collected TDP: no subscribed trigger.
TABLE TRIGGRP SFCTRIG INFOANAL
. SFC ( DG SFCDIG )$ NIL
Trigger R02 SFC is applicable to individual RES lines.
. . TABLE TRIGDIG
. . . SFCDIG SFC B243 SFC EVENT TCAP R02 SS7 AINSEP DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE KSETFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINSEP 66136211611 61362116111 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met, querying the
database.
Use the AINRES option for further information
+++ TRAVER: SUCCESSFUL CALL TRACE +++
>

```

**22.15.1.1 TRAVER provisioning example**

TRAVER 496 and TRAVER 497 on page 545 provide TRAVER examples, where a user dials vertical service code (VSC) B333. A query is sent to the SCP. TRAVER 496 was generated using the trigger group provisioning

interface and TRAVER 497 was generated using the trigger item provisioning interface.

**Figure 496 Sample trigger group TRAVER for trigger SFC**

```

>TRAVER L 6136216139 B333 B
TABLE IBNLINES
HOST 02 0 14 15 0 DT STN RES 6216139 263 613_AIN2_263 L613_LATA1_0 613
(CWT)
    (CWI) (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 15 0 AIN AIN SFCTRIG2
TABLE CUSTSTN
RESG263 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 333 FTR 3 AIN IMMED
TABLE TRIGGRP
SFCTRIG2 INFOANAL
    . SFC ( DG SFCDIG)$ NIL
Trigger AIN SFC is applicable to individual RES or BRI line.
    . . TABLE TRIGDIG
    . . SFCDIG SFC B333 SFC EVENT TCAP R02 SS7 AINJAZZ DFLT $
    . . . TABLE C7GTTYPE
    . . . AINJAZZ ANSI7 3 $
    . . . TABLE IBNFEAT
    . . . TUPLE NOT FOUND
    . . . TABLE C7GTT
    . . . AINJAZZ 6136216139 6136216139 SSNONLY (AINTTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.

```

**Figure 496 Sample trigger group TRAVER for trigger SFC (Continued)**

```

Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 497 Sample trigger item TRAVER for trigger SFC**

```

>TRAVER L 6136216139 B333 B
TABLE IBNLINES
HOST 02 0 14 15 0 DT STN RES 6216139 263 613_AIN2_263 L613_LATA1_0 613
(CWT)
(CWI) (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 15 0 AIN AIN TIID (4 FB212 ON) (4 FB333 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX

```

**Figure 497 Sample trigger item TRAVER for trigger SFC (Continued)**

```

RXCFNXXX 333 FTR 3 AIN IMMED
Checking AIN SFC Trigger Items as SFC is compatible with current call
. . TABLE TRIGITM
. . 4 FB333 SFC (DG B333) $ ULK EVENT R02 SS7 AINJAZZ $
. . . TABLE C7GTTYE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216139 6136216139 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 22.15.2 TRAVER and the public feature code trigger

This section provides two example TRAVER outputs for trigger PFC.

When the datafill is correct and the trigger group provisioning interface is used, the TRAVER output should match the output provided in TRAVER 498.

When using the trigger item provisioning interface, the TRAVER output should match the output provided in TRAVER 499 on page 548.

**Figure 498 Sample trigger group TRAVER output for trigger PFC**

```

>TRAVER L 6136216138 B901 B
TABLE IBNLINES
HOST 02 0 14 14 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613
(ACB)
  (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $

```

**Figure 498 Sample trigger group TRAVER output for trigger PFC (Continued)**

```

TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 14 0 AIN AIN PFCTRIG
TABLE CUSTSTN
RESG263 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 901 FTR 3 AIN IMMED
TABLE TRIGGRP
PFCTRIG INFOANAL
. PODPFEAT ( DG PFCDIG)$ NIL
Trigger AIN PODPFEAT is applicable to individual RES or BRI line.
. . TABLE TRIGDIG
. . PFCDIG PODPFEAT B901 PODPFEAT EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216138 6136216138 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 499 Sample trigger item TRAVER output for trigger PFC**

```

>TRAVER L 6136216138 B901 B
TABLE IBNLINES
HOST 02 0 14 14 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613
(ACB)
      (AR) $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 02 0 14 14 0 AIN AIN TIID (4 PB901 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 901 FTR 3 AIN IMMED
Checking AIN PFC Trigger Items as PFC is compatible with current call
. . TABLE TRIGITM
. . 4 PB901 PFC (DG B901) $ ULK EVENT R02 SS7 AINJAZZ $
. . . TABLE C7GTTYPE
. . . AINJAZZ ANSI7 3 $
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINJAZZ 6136216138 6136216138 SSNOONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

**Figure 499 Sample trigger item TRAVER output for trigger PFC (Continued)**

```

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 22.15.3 Example with option AINDENY

At the AIN Info analyzed TDP for customer group based PFC and SFC triggers, when TRAVER detects the line is subscribed to option AINDENY, a warning message is printed and the call is routed to treatment.

When TRAVER trigger criteria determines the trigger query should be suppressed due to the AINDENY option, a message is output indicating AINDENY was found and the trigger is not encountered. Details of the AINDENY entry suppressing the trigger are also output.

When a line is individually subscribed to a PFC or SFC trigger, triggering is not suppressed due to the presence of option AINDENY.

Option AINDENY is applicable for the OFCPFC trigger. An OFCPFC trigger will be denied because of AINDENY on a customer group or individual subscription to AINDENY for OFCPFC trigger. When AINDENY is on a particular customer group, no agent belonging to that customer group will encounter OFCPFC.

The following table provides an example of AINDENY with request to DENY a TIID.

**Table 927 AINDENY with request to DENY a TIID**

```

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613 $
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFPEAT

```

**Table 927 AINDENY with request to DENY a TIID**

```

HOST 00 0 02 18 0 AIN AIN TIID (4 PFC360 ON) $
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 360 FTR 3 AIN IMMED
Checking AIN PFC Trigger Items as PFC is compatible with current call
. . TABLE CUSTTIID
. . RESG263 4 PFC360 ON
. . TABLE IBNFPEAT
. . HOST 00 0 02 18 0 AINDENY AINDENY (DENY TIID 4 PFC360) $
. . TABLE TRIGITM

. . 4 PFC360 PFC TRANS (DG B360) $ ULK EVENT R02 SS7 AINROCK $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE IBNFPEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINROCK 6137224011 6137224011 SSNONLY (AINTEST) $
AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.

TREATMENT ROUTES. TREATMENT IS: AINF
1 T120
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**22.15.4 TRAVER and the OFCPFC trigger**

**22.15.5 Traver OFCPFC office wide subscription**

Traver reflects the routing data of a simulated AIN Service Enablers call. When SOC (AIN00309) is IDLE, trigger OFCPFC subscription verification is performed, but a warning message is displayed indicating an actual call will not trigger when the SOC AIN00309 is in IDLE state. When the SOC is ON, the call proceeds to trigger and no warning message is displayed. Examples of traver with SOC AIN00309 IDLE and SOC AIN00309 ON are shown in the following figures.

**Figure 500 Traver example with SOC AIN00309 IDLE**

>Traver 1 4671022 B333 B
TABLE IBNLINES
HOST 01 1 02 14 0 DT STN RES 4671022 403 416_PUB_403 L416_LATA1_400 416 \$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG416 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG416 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG416 NXLA RX416 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name
TABLE IBNXLA: XLANAME RESGSTAR
RESGSTAR 333 FTR 3 AIN IMMED
<b>AIN Trigger: An actual call would not trigger on office group</b>
<b>subscription as SOC option AIN00309 is IDLE</b>
<b>Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call</b>
. . TABLE OFCTIID
. . . RESG416 4 OPFC ON
. . TABLE TRIGITM
. . . 4 OPFC OFCPFC (DG B333) \$ ULK EVENT R02 SS7 AINPOP \$
. . .TABLE C7GTTYTYPE
. . .AINPOP ANSI7 6 \$

**Figure 500 Traver example with SOC AIN00309 IDLE**

. . .TABLE IBNFEAT
. . .TUPLE NOT FOUND
. . .TABLE C7GTT
. . . AINPOP 4164671022 4164671022 PCSSN (SIMTOOL_RTESET SIMTOOL3 0)\$ SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
<b>AIN Trigger: An actual call would not trigger on office group subscription as SOC option AIN00309 is IDLE</b>
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**Figure 501 Traver example with SOC AIN00309 ON**

>Traver 1 4671022 B333 B
TABLE IBNLINES
HOST 01 1 02 14 0 DT STN RES 4671022 403 416_PUB_403 L416_LATA1_400 416 \$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG416 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG416 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG416 NXLA RX416 RESGSTAR 0 RES

**Figure 501 Traver example with SOC AIN00309 ON**

TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RESGSTAR
RESGSTAR 333 FTR 3 AIN IMMED
<b>Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call</b>
. . TABLE OFCTIID
. . RESG416 4 OPFC ON
. . TABLE TRIGITM
. . 4 OPFC OFCPFC (DG B333) \$ ULK EVENT R02 SS7 AINPOP \$
. . . TABLE C7GTTYE
. . . AINPOP ANSI7 6 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINPOP 4164671022 4164671022 PCSSN (SIMTOOL RTESET SIMTOOL3 0) \$
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
+++ TRAVER: SUCCESSFUL CALL TRACE +++

### 22.15.6 Traver Example with AINDENY option

For OFCPFC, when TRAVER detects the line is subscribed to AINDENY option at the AIN Info analyzed TDP, a warning message is printed and the call is routed to treatment.

The AINDENY option can be subscribed to a line as well as a customer group. The following figures show traver examples when a TIID is denied to a line and TIID is denied to a customer group.

**Figure 502 Traver example when a TIID is denied to a line**

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613 AIN2 263 L613 LATA1 0 613 \$
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613 AIN2 263 L613 LATA1 0 \$

**Figure 502 Traver example when a TIID is denied to a line**

LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613 AIN2 TOPS Y RESG263 0 0 \$
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 360 FTR 3 AIN IMMED
<b>Checking AIN PFC Trigger Items as PFC is compatible with current call</b>
. . <b>TABLE OFCTIID</b>
. . <b>4 OPFC ON</b>
. . <b>TABLE IBNFEAT</b>
. . <b>HOST 00 0 02 18 0 AINDENY AINDENY (DENY TIID 4 opfc)</b>
. . <b>TABLE TRIGITM</b>
. . <b>4 OPFC OFCPFC TRANS (DG B360) \$ ULK EVENT R02 SS7 AINROCK \$</b>
. . . TABLE C7GTTTYPE
. . . AINROCK ANSI7 5 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUND
. . . TABLE C7GTT
. . . AINROCK 6137224011 6137224011 SSNOONLY (AINTEST) \$
AIN Info Analyzed TDP: trigger criteria not met.
Line is subscribed to option AINDENY. Triggering denied.
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
<b>AIN Info Analyzed TDP: trigger criteria not met</b>
<b>Line is subscribed to option AINDENY. Triggering denied.</b>

**Figure 502 Traver example when a TIID is denied to a line**

TREATMENT ROUTES. TREATMENT IS: FNAL
1 T120
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**Figure 503 Traver example when a TIID is denied to a customer group**

>TRAVER L 6136216138 B360 B
TABLE IBNLINES
HOST 00 0 02 18 0 DT STN RES 6216138 263 613_AIN2_263 L613_LATA1_0 613 \$
TABLE LINEATTR
263 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_AIN2_263 L613_LATA1_0 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_AIN2_263 FR01 613_AIN2 TOPS Y RESG263 0 0 \$
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG263 0 0 0 RNCOS \$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG263 NXLA RXCMN263 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
NCOS FEAT XLA name is NIL. Go to next XLA name.
TABLE IBNXLA: XLANAME RXCFNXXX
RXCFNXXX 360 FTR 3 AIN IMMED
<b>Checking AIN OFCPFC Trigger Items as OFCPFC is compatible with current call</b>
. . <b>TABLE OFCTIID</b>
. . <b>4 OPFC ON</b>
. . <b>TABLE CUSTTIID</b>
. . <b>RESG263 4 OPFC OFF</b>
. . <b>TABLE TRIGITM</b>
. . <b>4 OPFC OFCPFC TRANS (DG B360) \$ ULK EVENT R02 SS7 AINROCK \$</b>
. . . TABLE C7GTTTYPE
. . . AINROCK ANSI7 5 \$
. . . TABLE IBNFEAT
. . . TUPLE NOT FOUN
. . . TABLE C7GTT

**Figure 503 Traver example when a TIID is denied to a customer group**

. . . AINROCK 6137224011 6137224011 SSNOONLY (AINTEST) \$
<b>AIN Info Analyzed TDP: trigger criteria not met.</b>
<b>Customer group is subscribed to option AINDENY. Triggering denied.</b>
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
<b>AIN Info Analyzed TDP: trigger criteria not met.</b>
<b>Customer group is subscribed to option AINDENY. Triggering denied.</b>
TREATMENT ROUTES. TREATMENT IS: FNAL
1 T120
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

### 22.15.7 Traver for an IBN agent

Of the agents belonging to the office subscribed to OFCPFC trigger, only RES and ISDN BRI agents encounter the trigger. All other agents are blocked. The following figure shows traver for an IBN agent.

**Figure 504 Traver example for an IBN agent**

>TRAVER L 4771051 B360 B
TABLE IBNLINES
HOST 01 1 00 08 0 DT STN IBN 4771051 COMKODAK 0 0 416 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
TUPLE NOT FOUND
TABLE CUSTSTN
RESG263 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)\$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK STAR COL S 1
NCOS FEAT XLA name is NIL. Go to next XLA name.
<b>TABLE IBNXLA: XLANAME CUSTFEAT</b>

**Figure 504 Traver example for an IBN agent**

<b>CUSTFEAT 123 FTR 3 AIN IMMED</b>
<b>Skipping AIN PFC Trigger Items as PFC is NOT compatible with current call</b>
Checking AIN SDS Trigger Items as SDS is compatible with current call
AIN Info Analyzed TDP: trigger criteria not me
TABLE TMTCNTL
LNT ( 46)
. SUBTABLE TREAT
. NACK Y T OFRT 55
. TABLE OFRT
. 55 S D *OFLO
. S D LKOUT
. EXIT TABLE OFRT
+++ TRAVER: TREATMENT SET +++
<b>TREATMENT ROUTES. TREATMENT IS: NACK</b>
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

## 22.16 TRAVER and SDS escape code implementation

TRAVER supports the SDS escape code implementation. Field ACTION of table TRIGDIG allows the value ESCAPE, that indicates that the tuple is an escape code.

With the implementation of the ESCAPE value, the TRAVER output displays the tuple as the escape code tuple when the value of the ACTION field is ESCAPE. The escape code tuple has the following format:

### KEY TRIGGER ESCAPE

Simulation of the call processing in TRAVER runs as when the SOC options are in the ON state for both SOC options, AIN00220 and LNP00100, regardless of the actual SOC state. This feature allows operating company personnel to verify the trigger provisioning without enabling the SOC options.

For the escape list functionality, a warning message indicates that a real call does not actually escape even though TRAVER shows the call escaping (when the SOC state is IDLE).

While executing, TRAVER verifies the subscriptions that are applicable for each trigger that is subscribed at a given TDP. An information message shows whether or not the trigger applies to the subscribed agent and subscription level. When the trigger is not applicable, call processing simulation continues without checking the trigger.

When the switch supports a digit-based string trigger (SDS, N11, CDP, PODPFEAT, SFC, and LNP) at the Information Analyzed TDP, the entry from table TRIGGRP that defines the trigger displays. The following events occur:

- TRAVER displays the TRIGDIG table name.
- TRAVER displays the tuple in the TRIGDIG table. When the tuple is an escape code, the displayed data consist of the key, the trigger, and the ESCAPE value.
- When the applicable SOC option for the trigger is IDLE, TRAVER displays a SOC option IDLE warning message.

Figure 505 on page 559 illustrates a dialed number that escapes the SDS trigger after a continue message.

**Figure 505 TRAVER example: dialed number escapes the SDS trigger after a Continue message**

```

> traver 1 6215110 6137221111 ainres r02 cont b
TABLE LINEATTR
167 PBX NONE NT NSCR 0 613 EATP L613 TSPS 10 NIL NILSFC NILLATA 0
NIL NIL 00 N ( HOT )$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
613 621 5110
(PUBLIC (NONUNIQUE ) )$ $
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFFICETRIG
TABLE STDPRTCT
EATP ( 1) (65021) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE N
TABLE HNPACONT
613 Y 802 1 ( 221) ( 1) ( 84) ( 0) 3
. SUBTABLE HNPACODE
. 613 613 HNPAC 0
. 722 722 DN 613 722
TABLE TRIGGRP
OFFICETRIG INFOANAL
. N11 ( CT VBINFO) ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. Continue option: All matched digit criteria is displayed
. . TABLE TRIGDIG
. . . PODPDIG PODP 6137221111 PODP EVENT TCAP R02 SS7 AINJAZZ DFLT $
. . . . TABLE C7GTTYPE
. . . . . AINJAZZ ANSI7 3 $
. . . . . TABLE C7GTT
. . . . . AINJAZZ 6137221111 6137221111 SSNONLY (AINTST) $
. . . . . PODPDIG PODP 613722 PODP ESCAPE $
Trigger will not escape in actual call: SOC option AIN00220 is
IDLE.
AIN Info Analyzed TDP: AINRES continue option selected
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 1111 D BLDN
AIN Term Attempt TDP: no subscribed trigger.
TABLE DNATTRS
TUPLE NOT FOUND

```

## 22.17 TRAVER and prefix triggers

TRAVER is modified to support four prefix triggers. The four prefix triggers are Specified\_Carrier, One\_Plus\_Prefix, International, and Operator\_Services. TRAVER recognizes these four triggers and checks calls against the individual trigger criteria to determine whether or not a query is sent.

TRAVER modifications include the addition of parameter Prefix, and parameter carrier selection information (CSI).

Table 928 summarizes the parameters for individual trigger detection.

**Table 928 TRAVER parameter detection for prefix triggers**

Trigger	Origination			
	Line	ISUP	PRI	SCP response
Specified_Carrier	<Called_dn>	csi PRESUB_INPUT, NOT_PRESUB_INPUT	tns	AR, FC: Not supported Collect_Info: CollInfo
One_Plus_Prefix	<Called_dn>	Not supported	cdn <dn>	ainres-prefix
International	<Called_dn>	NOA # 04, 73	cdn in	cdn in
Operator_Services	<Called_dn>	NOA # 71, 72, 73, 74	osa cdn <dn>	osa

Table 929 provides examples of the four prefix triggers detected by the TRAVER tool.

**Table 929 Prefix trigger detection in TRAVER**

Detected trigger	Origination type	Command line
Specified_Carrier	Line	traver l 6211092 102040 b
	ISUP	traver tr isup_trk 099488 CSI NOT_PRESUB_INPUT b
	PRI	traver tr pri_trk n cdn na 6136251003 tns na cic 204 b traver tr pri_trk n cdn na 1020416136251003 b
	SCP response	Analyze_Route, Forward_Call: Not supported Collect_info: traver l 6211092 n ainres r02 colinfo 1020416136251003 b

**Table 929 Prefix trigger detection in TRAVER (Continued)**

Detected trigger	Origination type	Command line
One_Plus_Prefix	Line	traver l 6211092 16215002 b
	ISUP	Not supported
	PRI	traver tr pri_trk n cdn na 16251003 b
	SC response	traver l 6211092 6136211421 ainres r02 ar prefix b
International	Line	traver l 6211092 0116215003 b
	ISUP	traver tr isupitic 179488 NOA #04 b
	PRI	traver tr pri_trk n cdn in 996251003 b traver tr pri_trk 011998196136251003 b
	SCP response	traver l 6211092 n cdn in 998196251003 ainres r02 ar b
Operator_Services	Line	traver l 6211092 00 b
	ISUP	traver tr isuptric 099488 NOA #72 b
	PRI	traver tr pri_trk n cdn na 6136251003 osa puba b traver tr pri_trk n cdn na 00 b
	SCP response	traver l 6211092 n cdn na 6136251003 osa puba ainres r02 ar b

**22.17.1 TRAVER examples for prefix triggers**

See Section 22.22 “TRAVER examples for prefix triggers” on page 575.

**22.18 TRAVER example with AINCHG option**

Figure 506 shows a sample TRAVER output for a simulated call originating on an ISUP trunk. Charge number digits were provided for the trunk using the AINCHG option.

**Figure 506 Example TRAVER output using AINCHG option**

```

>traver tr aintat_ibn317ti1 6136218000 ain ainchg 6137228001 t
TABLE TRKGRP
AINTAT_IBN317TI1 IBNTI 0 ELO NCRT COMKODAK 0 0 6137228002 ANSDISC 0 N N N
N N Y
    N 0 0 N N N N N $ NATL $
. . TABLE TRKAIN
. . AINTAT_IBN317TI1 TRKTRIGGRP2_AUTO
TABLE CUSTSTN
COMKODAK AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE NCOS
COMKODAK 0 0 0 KDK0 ( OHQ 0 TONE_OHQ) ( CBQ 0 3 N 2)$
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
COMKODAK PXDK CXDK CUSTFEAT 0 KDK
TABLE DIGCOL
KDK 6 COL L 1
TABLE IBNXLA: XLANAME PXDK
PXDK 613 NET N N 3 N NDGT N N DOD N 0 NONE $
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC LATA1 0 NIL NIL 00 N
$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE STDPRTCT
P621 ( 1) (65021) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 632 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HNPACONT
613 Y 932 2 ( 436) ( 1) ( 84) ( 0) 2 $

```

**Figure 507 Example TRAVER output using AINCHG option (Continued)**

```

. SUBTABLE HNPACODE
. 6218 6219 DN 613 621
TABLE TRIGGRP
TRKTRIGGRP2_AUTO INFOCOL
. OFFHKDEL ( ESC )$ ROCKINFO
Trigger AIN OFFHKDEL is applicable to individual IBN trunk.
Trigger AIN OFFHKDEL: Trigger is active.
  (Use AINCI CHANGESTATE command to alter activation state.)
. . TABLE TRIGESC
. . TUPLE NOT FOUND
. . TABLE TRIGINFO
. . ROCKINFO EVENT TCAP R01 SS7 AINROCK DFLT $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE C7GTT
. . . AINROCK 6137228001 6137228001 PCSSN (AINTATM_RTESET2 AIN01 0) $
SSN
AIN Info Collected TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

## 22.19 TRAVER examples with AINMQG option

Table 930 and Table 931 on page 564 each show sample output of TRAVER using the AINMQG option.

**Table 930 Example TRAVER output using AINMQG option**

```

>TRAVER TR ISUPITEAIC 6217140 AIN AINMQG B
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) (65021) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 621 621 N DD 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HNPACONT
613 Y 999 1 ( 310) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE

```

**Table 930 Example TRAVER output using AINMQG option (Continued)**

```

. 621 621 DN 613 621
AIN Info Collected TDP: no subscribed trigger.
TABLE FNPA7DIG
TUPLE NOT FOUND
Checking AIN SDS Trigger Items as SDS is compatible with current call
. . TABLE OFCTIID
. . 4 SAA7140A ON
. . TABLE TRIGITM
. . 4 SAA7140A SDS (DG 6136217140) $ ULK EVENT R01 SS7 AINROCK $
. . . TABLE C7GTTYPE
. . . AINROCK ANSI7 5 $
. . . TABLE C7GTT
. . . AINROCK 6136217140 6136217140 PCSSN (AINTATM RTESET2 AIN01 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter CallingPartyID: of Number>
>1 6136255000
Defaults are used for Plan>, Indicator>, Indicator>
Please enter Carrier: Selection> ID>
>1 0110
Please enter storage location:Device> Name>
>SFDEV AINMQG1
AINMQG Query message saved in file.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

**Table 931 Example TRAVER output using AINMQG option with no trace (nt)**

```

>TRAVER L 6136216102 411 AIN AINMQG NT

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Building the AINMQG Query Message.
Please enter storage location:Device> Name>
>SFDEV AINMQG2
AINMQG Query message saved in file.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

Examples that detail the effects that AIN SOC options have on TRAVER are detailed in Section 11.23 “TRAVER output of SOC options” on page 446. The AINMQG option is ignored when the base AIN SOC options are idle.

## 22.20 TRAVER examples with AINRES option

The AINRES option lets you simulate processing of certain types of responses coming back from the SCP or adjunct. The responses that you can receive are

- forward call (FC)
- analyze route (AR)
- continue (CONT)
- authorize termination (AT)
- Send To Resource (STR) to intelligent peripheral

For other examples of TRAVER used on AIN calls, refer to North American DMS-100 Translations Guide, 297-8003-350.

### 22.20.1 AINRES option and the trigger item provisioning interface

The trigger item provisioning interface is an alternative method of provisioning AIN and LNP triggers. With this interface, trigger items are provisioned in the TRIGITM table and triggers are assigned to these trigger items in the OFCTIID table. Each of the following sections include an example of response simulation from the trigger group provisioning interface only.

### 22.20.2 Analyze Route

The Analyze Route message instructs the SSP to resume call processing at the Analyze Information or Select Route point in call depending on the contents of the response message. The AR option simulates calls that continue processing at the Analyze Information PIC only. In order to show how a call routes once the response is received, the options CDN, TNS, and OSA must be used in the TRAVER command. These options represent the CalledPartyId and Carrier parameters in the SCP response as a collection of ISDN routing characteristics. The AR option will not display the Origination Attempt and Information Collected TDPs as these are not encountered in the context of the Analyze Route response.

When operating company personnel use a TNS parameter in the traver command, TRAVER skips Info\_Analyzed TDP trigger criteria checking. When operating company personnel use a TNS parameter and specify that the carrier is a LEC or an OTC carrier, TRAVER traces Info\_Analyzed TDP trigger checking.

TRAVER 487 provides a sample TRAVER output that shows how the CDN and TNS options route over a carrier from a public trunk.

**Figure 508 Sample TRAVER output for N CDN NA and TNS NA UNK options route over a carrier from a public trunk**

```
>traver tr isupitic n cdn na 6136211000 tns na unk 777 ainres r02 ar b
Warning: Routing characteristics are present.
      Originator must be able to send in
      characteristics specified.
TABLE RTECHAR
  . TNSPUB (CDN NA (TNS NA)$) ( BC 3_1KHZ (CDN NA) (TNS NA)$)$
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
  . TNSPUB E800 ( XLA AIN1)$
TABLE STDPRTCT
AIN1 ( 1) ( 0) 2
  . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
  . 777 777 T NP 3 OFRT 896 3 13 NONE
  . . TABLE OFRTMAP
  . . . Tuple not found. Default to old index.
  . . TABLE OFRT
  . . 896 CND EA INTNL SK 3
  . .   S D OGEAGTE
  . .   N D ISUPOGGTE 0 N N
  . .   CND ALWAYS SK 2
  . .   N D OGEAGTE 15 D179 N
  . .   N D ISUPOGGTE 0 D179 N
  . . EXIT TABLE OFRT
  . SUBTABLE AMAPRT
  . KEY NOT FOUND
  . DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
  . N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
  . PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
  . LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
```

**Figure 508 Sample TRAVER output for N CDN NA and TNS NA UNK options route over a carrier from a public trunk (Continued)**

```

AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 OGEAGTE          6136211000      ST
2 ISUPOGGTE       6136211000      ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 T120

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

### 22.20.3 Forward Call

The Forward Call response instructs the SSP to resume call processing at the Analyze Information point in call (PIC) in an originating call model associated with the redirecting party (AIN subscriber). To simulate this with TRAVER, specify the redirecting party's directory number in the originating agent field of the TRAVER. As with the Analyze Route response, the SCP response is represented using the CDN, TNS, and OSA options. TRAVER does not display the Origination Attempt and Information Collected trigger detection points as these TDPs are not encountered during Forward Call processing. Normal call processing, including subsequent trigger detection, resumes at the Analyze Information PIC.

In TRAVER 509, the call receives a forward call message with 621-1171 from the SCP.

**Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP**

```

>traver l 6136211179 n cdn na 6136211171 aires r02 fc b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS

```

**Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP (Continued)**

```
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS: N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1171 L HOST 00 0 13 02
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 621 623
```

**Figure 509 Sample TRAVER output when call receives a forward call message with 621-1171 from the SCP (Continued)**

```

TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211171          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

#### 22.20.4 Continue

The Continue message instructs the SSP to process the next applicable trigger for the originating facility at the Information Analyzed TDP. TRAVER does not display the Origination Attempt and Information Collected TDPs in order to reach the Information Analyzed TDP. At the Information Analyzed TDP, TRAVER displays triggers that match the dialed digits from the most specific to the least specific. TRAVER then resumes normal processing.

TRAVER 510 shows the AINRES continue option.

**Figure 510 Sample TRAVER output using the AINRES continue option**

```

>traver l 6136212113 411 ainres r02 cont b
TABLE LINEATTR
17 8FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $

```

**Figure 510 Sample TRAVER output using the AINRES continue option (Continued)**

```
TABLE DNATTRS
613 621 2113
(PUBLIC (NONUNIQUE ) $)$ $
TABLE DNGRPS
TUPLE NOT FOUND
Originator is supported for AIN Termination Attempt Trigger
only, therefore other AIN info is not processed.
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 411 411 T OA 0 OFRT 44 3 3 NONE
. . TABLE OFRT
. . 44 N D DAC 3 N Y
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
TABLE POSITION
CAMA S TSPSTO

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 DAC NN ST

TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

POSITION ROUTES. POSITION IS: CAMA
1 TSPSTO

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

### 22.20.5 Authorize Termination

The Authorize Termination message instructs the SSP to continue call processing at the Authorize Termination PIC and attempt to terminate to the AIN Termination Attempt subscriber. No additional triggers are displayed as none can be encountered.

### 22.20.6 Send To Resource

The Send To Resource TRAVER option allows validation of the DestinationAddress parameter identifying a route to an intelligent peripheral. The option is similar to the Analyze Route AR option but differs in two respects. The DestinationAddress parameter is specified in a CDN parameter, however TNS and OSA parameters are not used. During an STR to IP TRAVER, triggers at all detection points are not encountered.

### 22.20.7 TERMATT

TRAVER 511 shows TRAVER output for a simulated call attempting to terminate at 6211172 and triggers at an AIN Essentials' TERMATT. The off-board processor responds with a Forward Call message with CDN 6137227030 and no carrier. The SSP routes the call according to the instructions in the FC response and terminates at DN 6137224113.

**Figure 511 Sample TRAVER output using the AINRES option**

```
>traver 1 6136211172 n cdn na 6137224113 ainres r02 fc b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
```

**Figure 511 Sample TRAVER output using the AINRES option (Continued)**

```
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 722 722 DN 613 722
TABLE TOFCNAME
613 722 $
TABLE DNINV
613 722 4113 L HOST 00 1 00 04
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. 722 722
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.
```

**Figure 511 Sample TRAVER output using the AINRES option (Continued)**

```

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6137224113          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

```

**22.21 TRAVER example of routing to an IP**

TRAVER 512 is an example of how TRAVER can be used to verify routing to an IP address. In TRAVER 512, the IP address is 8147226010.

**Figure 512 Sample TRAVER output for routing to an IP**

```

>traver 1 6136211170 n cdn na 8147226010 ainres r02 str b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE LINEATTR
0 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_0 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_0 FR01 613 P621 TSPS N $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE PXLAMAP
. CDNPUB P621 ( XLA AIN1)$
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO

```

Figure 512 Sample TRAVER output for routing to an IP (Continued)

```

DOCUMENTATION.
. 814 820 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 316) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 814 814 FRTE 20
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 20 S D CAMA2W
. S D TSPSTO
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL Y N
. SUBTABLE LCASCR
. TUPLE NOT FOUND.  DEFAULT IS NON-LOCAL
TABLE PFXTREAT
OPTL NP N DD UNDT
TABLE CLSVSCRC
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 CAMA2W          8147226010      ST
2 TSPSTO         8147226010      ST2P

TREATMENT ROUTES.  TREATMENT IS: GNCT

```

**Figure 512 Sample TRAVER output for routing to an IP (Continued)**

```
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

## 22.22 TRAVER examples for prefix triggers

The following sections provides TRAVER examples that apply to the Specified\_Carrier, One\_Plus\_Prefix, International and Operator\_Services triggers.

**22.22.1 TRAVER example for trigger Specified\_Carrier**

TRAVER 513 provides sample TRAVER output for the Specified\_Carrier trigger.

**Figure 513 Sample TRAVER output for trigger Specified\_Carrier**

```
traver l 6671021 1048816136671001 b
TABLE IBNLINES
HOST 01 0 00 14 0 DT STN RES 6671021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 00 14 0 AIN AIN TIID (4 SPEC ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
```

**Figure 513 Sample TRAVER output for trigger Specified\_Carrier (Continued)**

```

TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND

Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA ITT Y 0) $ $)$ 9

TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEAL ITT Y OFRT 900 5 20 N
. . TABLE OFRT
. . 900 CND EA INTNL SK 2
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGITT 15 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

```

**Figure 513 Sample TRAVER output for trigger Specified\_Carrier (Continued)**

```
TABLE STDPRTCT
PEA1 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 1 9 EA DD 1 T NA ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667100 6136671021 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1001 L HOST 01 0 00 02
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
```

**Figure 513 Sample TRAVER output for trigger Specified\_Carrier (Continued)**

```

TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667
TABLE PFXTREAT
OPTL DD Y DD UNDT
TABLE CLSVSCRC
KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N Y N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
Using Equal Access (EA) route   OFRT   900 from Pretranslation
TABLE OFRT
  900 CND EA INTNL SK 2
      N D ISUPOGITT 0 N N
      CND ALWAYS SK 1
      N D ISUPOGITT 15 N N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.

```

**Figure 513 Sample TRAVER output for trigger Specified\_Carrier (Continued)**

```
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
. . TABLE TRIGITM
. . 4 SPEC SPECARR $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 1048800000 1048800000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

**22.22.2 TRAVER example for the One\_Plus\_Prefix trigger**

TRAVER 514 provides sample TRAVER output for trigger One\_Plus\_Prefix.

**Figure 514 Sample TRAVER for trigger One\_Plus\_Prefix**

```

traver l 6631021 16136671001 b
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 ONEPLUS ON) $
TABLE CUSTSTN
RESG613 AIN AIN TIID
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND

```

**Figure 514 Sample TRAVER for trigger One\_Plus\_Prefix (Continued)**

```

Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 NONE Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 16 19 N DD 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 58) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667 6136737100 HNPA 0
. 667 667 DN 613 667

```

**Figure 514 Sample TRAVER for trigger One\_Plus\_Prefix (Continued)**

```
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1001 L HOST 01 0 00 02
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNSA results are used.
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667
TABLE PFXTREAT
OPTL DD Y DD UNDT
TABLE CLSVSCRC
KEY NOT FOUND
TABLE LATAOLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
AIN Info Collected TDP: no subscribed trigger.
Checking AIN ONEPLUS Trigger Items as ONEPLUS is compatible with current
call
```

**Figure 514 Sample TRAVER for trigger One\_Plus\_Prefix (Continued)**

```
. . TABLE TRIGITM
. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $

. . . TABLE C7GTT
. . . AINPOP 1000000000 1000000000 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

### 22.22.3 TRAVER example for the International trigger

TRAVER 515 provides sample TRAVER output for trigger International.

**Figure 515 Sample TRAVER output for International trigger**

```

traver l 6671021 0114164671001 b
TABLE IBNLINES
HOST 01 0 00 14 0 DT STN RES 6671021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 00 14 0 AIN AIN TIID (4 INTL ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG613 0 0 0 RNCOS $

```

**Figure 515 Sample TRAVER output for International (Continued)trigger**

```

TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND
Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 011 011 N DD 3 IN
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND

```

**Figure 515 Sample TRAVER output for International (Continued)trigger**

```

TABLE CCTR
416 T 416 2 20 T OFRT 62 Y $
TABLE OFRT
INVALID ENTRY:    62
TABLE OCCINFO
ITT 0488 EAP Y Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N Y N N N N N N N N N N
N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP
DEFINED
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10488 10488 EA DD 5 P PEA1 ITT Y OFRT 900 5 20 N
. . TABLE OFRT
. . 900 CND EA INTNL SK 2
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGITT 15 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE STDPRTCT
PEA1 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

**Figure 515 Sample TRAVER output for International (Continued)trigger**

```
. 011 011 EA DD 3 T IN ITT N
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
AIN Info Collected TDP: no subscribed trigger.
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE TRIGITM
. . 4 INTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 0110000000 0110000000 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

**22.22.4 TRAVER example for the Operator\_Services trigger (1 of 2)**

TRAVER 516 provides sample TRAVER output for trigger Operator\_Services.

**Figure 516 Sample TRAVER output for trigger Operator\_Services (1 of 2)**

```

>traver l 6136211311 0 b
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 201 613_P621_200 L613_LATA1_0 613 $
TABLE LINEATTR
201 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND

```

Figure 516 Sample TRAVER output for trigger Operator\_Services (1 of 2) (Continued)

```
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
ZERO MINUS POS FROM TABLE XLAPLAN
TABLE POSITION
TSPS T OFRT 106
TABLE OFRT
  106 N D LNTOPSO 1 N N
EXIT TABLE OFRT
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

**Figure 516 Sample TRAVER output for trigger Operator\_Services (1 of 2) (Continued)**

```
AIN Info Analyzed TDP: trigger criteria met.  
Querying the database would occur now.  
Use the AINMQG option to save the query to a file for use in TstQuery.  
Use the AINRES option for further information  
  
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

**22.22.5 TRAVER example for the Operator\_Services trigger (2 of 2)**

TRAVER 517 illustrates the translations for an Analyze\_Route response for a subscriber called party number with an operator request that hits an office-wide Operator\_Services trigger. The response translations simplification feature is active, and is indicated by the presence of ISDN digit conversion. Subscriber numbers are not supported for this feature, therefore, a "0" is not prefixed to the digits. Despite the lack of a prefixed "0", the call still hits trigger Operator\_Services.

**Figure 517 TRAVER example for the Operator\_Services trigger (2 of 2)**

```

traver l 6136631021 n cdn na 6136671022 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECOANA (OSA PUBP (CDN NA)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 OPER ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID

```

**Figure 517 TRAVER example for the Operator\_Services trigger (2 of 2) (Continued)**

```

TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND
Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 06136671022
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

**Figure 517 TRAVER example for the Operator\_Services trigger (2 of 2) (Continued)**

```
. 0 0 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667102 6136737100 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1022 L HOST 01 0 02 14
TABLE DNFEAT
613 667 1022
      (AINDN TIID (20 TAT_SIM ON) $)$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667
```

**Figure 517 TRAVER example for the Operator\_Services trigger (2 of 2) (Continued)**

```

TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
KEY NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPER OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

**22.22.6 TRAVER example when the SOC option is idle**

When the SOC option for triggers Specified\_Carrier, One\_Plus\_Prefix, International, and Operator\_Services is IDLE, TRAVER displays a warning message.

TRAVER 518 provides a TRAVER example illustrating when the SOC option is idle.

**Figure 518 Sample TRAVER output when the SOC option is idle**

```
>traver l 6136211311 06136211411 b
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 201 613_P621_200 L613_LATA1_0 613 $
TABLE LINEATTR
201 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 OPERSERV ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE IBNXLA: XLANAME RXCMN200
TUPLE NOT FOUND
Default from table XLANAME:
RXCMN200
      (NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
      (EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL NILLATA $
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
```

**Figure 518 Sample TRAVER output when the SOC option is idle (Continued)**

```

BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 06 07 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1411 L HOST 00 0 18 25
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
613 FR01 OA 2 N NONE ( 1)
. SUBTABLE CLSVSCR
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
Trigger AIN : AIN 0.2 trigger bypassed as AIN00254 SOC option is IDLE.
TABLE TRIGGRP
CUSTTRIGGRP_CDP INFOANAL
. CDPCODE ( DG CDPDIG) $ NIL

```

**Figure 518 Sample TRAVER output when the SOC option is idle (Continued)**

```
Trigger AIN CDPCODE is applicable to customer group.
TABLE TRIGGRP
OFCTRIGGRP_ALL INFOANAL
. N11 ( DG N11DIG)$ NIL
Trigger AIN N11 is applicable to office.
. PODP ( DG PODPDIG)$ NIL
Trigger AIN PODP is applicable to office.
. LNP ( DG LNPDIG) ( ESCEA ) ( ESCOP ) ( ESCDN )$ NIL
Trigger AIN LNP is applicable to office.
AIN Info Analyzed TDP: trigger criteria not met.
AIN Term Attempt TDP: no subscribed trigger.

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 LINE                6136211411          ST

TREATMENT ROUTES.  TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

### 22.22.7 TRAVER example for triggering from ISUP IAM parameters

The Specified\_Carrier, International, and Operator\_Services triggers can be encountered on an incoming ISUP trunk, depending on the presence of certain parameters in the incoming IAM message. These parameters are as follows:

- Nature of Address = International
- Nature of Address = Operator requested
- Carrier Selection Information

TRAVER 519 provides a TRAVER example illustrating when the ISUP IAM Nature of Address parameter = International.

**Figure 519 Sample TRAVER output when the ISUP IAM Nature of Address parameter = International**

```

>traver tr isupitic 179488 noa #04 b
TABLE TRKGRP
ISUPITIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 179488 179488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN INTERNTL Trigger Items as INTERNTL is compatible with current
call
. . TABLE OFCTIID
. . 4 INTERNTL ON
. . TABLE TRIGITM
. . 4 INTERNTL INTERNTL $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.

```

**Figure 519 Sample TRAVER output when the ISUP IAM Nature of Address parameter = International (Continued)**

```
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information
```

```
+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

TRAVER 520 provides sample TRAVER output illustrating when the ISUP IAM Nature of Address parameter=Operator requested.

**Figure 520 TRAVER example when the ISUP IAM Nature of Address parameter=Operator requested**

```
>traver tr isupiteaic 099488 noa #72 b
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 099488 099488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE OFCTIID
. . 4 OPERSERV ON
. . TABLE TRIGITM
. . 4 OPERSERV OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTTYPE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
```

**Figure 520 TRAVER example when the ISUP IAM Nature of Address parameter=Operator requested (Continued)**

```

Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

TRAVER 521 provides TRAVER output for the ISUP IAM Carrier Selection Information parameter.

**Figure 521 TRAVER example for the ISUP IAM Carrier Selection Information parameter**

```

>traver tr isupiteaic 099488 csi NOT_PRESUB_INPUT b
TABLE TRKGRP
ISUPITEAIC IT 63 ITTD NCRT IC NIL MIDL 613 E800 NSCR 613 000 N Y $
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE STDPRTCT
E800 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 099488 099488 T NP 6 OFRT 900 6 6 NONE
. . TABLE OFRT
. . 900 CND EA INTNL SK 3
. . S D OGEAITT
. . N D ISUPOGITT 0 N N
. . CND ALWAYS SK 2
. . N D OGEAITT 0 N N
. . N D ISUPOGITT 0 N N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
AIN Info Collected TDP: no subscribed trigger.
Checking AIN SPECARR Trigger Items as SPECARR is compatible with current
call
. . TABLE OFCTIID
. . 4 SPECARR ON
. . TABLE TRIGITM
. . 4 SPECARR SPECARR $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 15 $

```

**Figure 521 TRAVER example for the ISUP IAM Carrier Selection Information parameter (Contin-**

```
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.
Use the AINRES option for further information

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++
```

### **22.22.8 TRAVER example for triggering from AIN response parameters**

The TRAVER command line supports parameters Prefix, Nature Of Number, and Carrier Format Field (from the AIN Response) and displays information about the specific triggers encountered when any of these parameters are used

with the AINRES option. See TRAVER 522 for an example of a response output for trigger Operator\_Services.

**Figure 522 TRAVER example of a response output for trigger Operator\_Services**

```

traver 1 6136631021 n cdn na 6136671022 osa pubp ainres r02 ar b
Warning: Routing characteristics are present.
        Originator must be able to send in
        characteristics specified.
TABLE RTECHAR
. LECOANA (OSA PUBP (CDN NA)$) ( BC 3_1KHZ (OSA PUBP) (CDN NA)$)$
TABLE IBNLINES
HOST 01 0 08 14 0 DT STN RES 6631021 404 613_PUB_404 L613_LATA1_0 613 $
TABLE LINEATTR
404 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_PUB_404 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_PUB_404 NSCR 613 PUB TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 01 0 08 14 0 AIN AIN TIID (4 OPER ON) $
TABLE CUSTSTN
RESG613 AIN AIN CDPCODE
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID

```

**Figure 522 TRAVER example of a response output for trigger Operator\_Services (Continued)**

```

TABLE NCOS
RESG613 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG613 NXLA RX613 RESGSTAR 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RX613
TUPLE NOT FOUND
Default from table XLANAME:
RX613
      (NET N N 0 N NDGT N Y GEN ( LATTR 414 613_EAP1_414 L613_LATA1_0)
      (EA NILC Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
414 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_EAP1_414 L613_LATA1_0 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_EAP1_414 C667 613 EAP1 TSPS Y RESG613 0 0 $ $
TABLE RATEAREA
L613_LATA1_0 L613 NIL LATA1 $
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.      Resulting digits are: 06136671022
TABLE STDPRTCT
EAP1 ( 1) ( 0) 3
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.

```

**Figure 522 TRAVER example of a response output for trigger Operator\_Services (Continued)**

```

. 0 0 N OA 1 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:  NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 939 2 ( 59) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 613667102 6136737100 HNPA 0
. 667 667 DN 613 667
TABLE TOFCNAME
613 667 $
TABLE DNINV
613 667 1022 L HOST 01 0 02 14
TABLE DNFEAT
613 667 1022
      (AINDN TIID (20 TAT_SIM ON) $)$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 44) OPTL N N
. SUBTABLE LCASCR
. 667 667

```

**Figure 522 TRAVER example of a response output for trigger Operator\_Services (Continued)**

```

TABLE PFXTREAT
OPTL OA Y OA UNDT
TABLE CLSVSCRC
KEY NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
Checking AIN OPERSERV Trigger Items as OPERSERV is compatible with current
call
. . TABLE TRIGITM
. . 4 OPER OPERSERV $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYPE
. . . AINPOP ANSI7 6 $
. . . TABLE C7GTT
. . . AINPOP 0000000000 0000000000 PCSSN (SIMTOOL_RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

TRAVER 523 provides sample TRAVER output illustrating a response output for parameter Prefix.

**Figure 523 TRAVER example of a response output for parameter Prefix**

```

>traver l 6136211311 n cdn na 6136211411 ainres r02 ar prefix b
Warning: Routing characteristics are present.
Originator must be able to send in

```

**Figure 523 TRAVER example of a response output for parameter Prefix (Continued)**

```

characteristics specified.
TABLE RTECHAR
. CDNPUB (CDN NA $) (CDN IN $) ( BC 3_1KHZ (CDN NA)$) ( BC 3_1KHZ (CDN
IN)$)$
TABLE IBNLINES
HOST 00 0 07 19 0 DT STN RES 6211311 200 613_P621_200 L613_NILLA_4 613 $
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE IBNFEAT
HOST 00 0 07 19 0 AIN AIN TIID (4 ONEPLUS ON) $
TABLE CUSTSTN
RESG200 AIN AIN CUSTTRIGGRP_CDP
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIGGRP_ALL
TABLE NCOS
RESG200 0 0 0 RNCOS $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT, AND DIGCOL
RESG200 NXLA RXCMN200 RXCFNXXX 0 RES
TABLE DIGCOL
RES specified: RES digit collection
TABLE XLAMAP
. Tuple not found. Default is use original XLANAME.
TABLE IBNXLA: XLANAME RXCMN200
RXCMN200 6 AMBIG RXCFNXXX 2 RXCML200
NUMBER OF DIGITS GREATER THAN 2 RXCML200 TRANSLATOR ARE USED.
TABLE IBNXLA: XLANAME RXCML200
TUPLE NOT FOUND
Default from table XLANAME:
RXCML200
(NET N N 0 N NDGT N Y GEN ( LATTR 200 613_P621_200 L613_NILLA_4)
(EA ITT Y 0) $ $)$ 9
TABLE DIGCOL
NDGT specified: digits collected individually
TABLE LINEATTR
200 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 613_P621_200 L613_NILLA_4 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
613_P621_200 FR01 613 P621 TSPS Y RESG200 0 0 $
TABLE RATEAREA
L613_NILLA_4 L613 NIL LATA1 $

```

**Figure 523 TRAVER example of a response output for parameter Prefix (Continued)**

```
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
. NOTE: ISDN Digit Conversion has been performed:
.   Resulting digits are: 6136211411
TABLE STDPRTCT
P621 ( 1) ( 0) 0
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT CAN ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. KEY NOT FOUND
. DEFAULT VALUE IS:   N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS:   NONE OVRNONE  N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 999 1 ( 315) ( 1) ( 84) ( 0) 3 $
. SUBTABLE HNPACODE
. 613 613 HNPA 0
. 621 621 DN 613 621
TABLE TOFCNAME
613 621 $
TABLE DNINV
613 621 1411 L HOST 00 0 18 25
TABLE DNFEAT
TUPLE NOT FOUND
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
LNP Info: Called DN is resident.
LNP Info: Called DN has native NPANXX.
LNP Info: HNPA results are used.
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 613 613
TABLE LCASCRCN
613 L613 ( 16) OPTL N N
. SUBTABLE LCASCR
. 621 623
TABLE PFXTREAT
OPTL NP Y NP UNDT
TABLE CLSVSCRC
Checking AIN ONEPLUS Trigger Items as ONEPLUS is compatible with current
call
. . TABLE TRIGITM
```

**Figure 523 TRAVER example of a response output for parameter Prefix (Continued)**

```

. . 4 ONEPLUS ONEPLUS $ ULK EVENT R02 SS7 AINPOP $
. . . TABLE C7GTTYE
. . . AINPOP ANSI7 15 $
. . . TABLE C7GTT
. . . AINPOP 6136211411 6136211411 PCSSN (SIMTOOL RTESET SIMTOOL3 0) $
SSN
AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

AIN Info Analyzed TDP: trigger criteria met.
Querying the database would occur now.
Use the AINMQG option to save the query to a file for use in TstQuery.

+++ AIN TRAVER: SUCCESSFUL CALL TRACE +++

```

**22.22.9 TRAVER Example: STRATTRS table**

An example of the output for STRATTRS table follows:

**Figure 524 Traver example of a STRATTRS table output**

```

>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present.
      Originator must be able to send in
      characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 $ $
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 $
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT

```

Figure 524 Traver example of a STRATTRS table output

PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden
by those provided in the Table STRATTRS based
on the IP address.
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

## 22.23 TRAVER for Dynamically controlled routing with AIN

The AIN NA013 product release enhances TRAVER for the dynamically controlled routing (DCR) feature. When the SSP removes the DCR handicap and the call acts like a new DCR call, the output for AIN response translations provides:

- DCR direct routes
- recommended tandem routes (when applicable)
- exception routes (whether SLER is ON or OFF)
- automatic flexible routing (AFR) interworking with DCR

When a DCR call traverses through DCR routes and the call encounters an AFR pattern, TRAVER displays this traverse in both the TRACE and NOTRACE portion.

Figure 525 shows output for AIN response translations with DCR handicap removal.

**Figure 525 TRAVER example: AIN response translations with DCR handicap removal**

```

>traver tr NET1_4to6_2w n cdn l 9465004 ainres r02 ar b
Warning: Routing characteristics are present.
    Originator must be able to send in
    characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA $) ( BC 3_1KHZ (CDN NA)$)$
TABLE TRKGRP
NET1_4TO6_2W T2 0 ELO NCRT NIL MIDL 0 N P621 NSCR 613
LCL N N $
Warning: Routing characteristics in TRAVER command
line will override any bearer capability datafilled
in table TRKGRP.
TABLE OFCVAR
AIN_OFFICE_TRIGGRP OFCTRIG
TABLE PXLAMAP
. LECNA P621 ( XLA P621)$
TABLE STDPRTCT
P621 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 94 96 N NP 0 NA
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE HNPACONT
613 Y 985 2 ( 40) ( 1) ( 84) ( 0) 2 $
. SUBTABLE HNPACODE
. 9465 9465 LRTE 965
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF

```

**Figure 526 TRAVER example: AIN response translations with DCR handicap removal (Continued)**

```

. SUBTABLE RTEREF
. 965 DCRT DCRNET1 NODE5SEENBY6 5
.   N D NET1_6TO5_2W 4 6211 N
.   NODE DCRNET1 NODE5SEENBY6 5 <NODE selector is used
for New DCR calls>
. . TABLE DESTNODE (ACCESSED IF DCR IS ACTIVATED IN
OFFICE)
. . NORMAL ROUTING RESUMES IF NODE TUPLE IS SKIPPED
. . DCR NETWORK: DCRNET1
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . NODE7SEENBY6 NODE5SEENBY6 5 T OFR4 967 T OFR2 865
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR4
. . . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR4
. . . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . TABLE OFRTMA4
. . . . . Tuple not found. Default to old index.
. . . . EXIT TABLE OFR4
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . . TABLE OFRTMA2
. . . . . Tuple not found. Default to old index.
. . . . TABLE OFR2
. . . . . 865 N D EXC_6TO5_2W 4 6211 N
. . . . TABLE OFRTMA2
. . . . . Tuple not found. Default to old index.
. . . . EXIT TABLE OFR2
. . EXIT TABLE DESTNODE
.   N D NET1_6TO4_2W 3 944 N
.   N D NET1_6TO7_2W 3 947 N
.   T OFR2 865
. . TABLE OFRTMA2
. . . Tuple not found. Default to old index.

```

**Figure 527 TRAVER example: AIN response translations with DCR handicap removal (Continued)**

```
. . TABLE OFR2
. . 865 N D EXC_6TO5_2W 4 6211 N
. . EXIT TABLE OFR2
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE FNPA7DIG
TUPLE NOT FOUND
TABLE TRIGGRP
OFCTRIG INFOANAL

<Traver output Skipped since it is not relevant>

+++ TRAVER: SUCCESSFUL CALL TRACE +++

DIGIT TRANSLATION ROUTES

1 NET1_6TO5_2W      6211004      ST <Direct Route>
2 NET1_6TO7_2W      9475004      ST <Tandem Route>
3 EXC_6TO5_2W      6211004      ST <Exception Route>

TREATMENT ROUTES. TREATMENT IS: GNCT

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Figure 528 shows output for AFR interworking with DCR.

**Figure 528 TRAVER example: AFR Interworking with DCR**

```

>traver l 6211002 9465004 b
TABLE LINEATTR
407 1FR NONE NT 10 NILSFC 0 NIL NIL 00 $

<Traver output Skipped - Non-Relevant>

. SUBTABLE RTEREF
. 965 DCRT DCRNET1 NODE5SEENBY6 5
.   N D NET1_6TO5_2W 4 6211 N
.   NODE DCRNET1 NODE5SEENBY6 5
. . TABLE DESTNODE (ACCESSED IF DCR IS ACTIVATED IN
OFFICE)
. . NORMAL ROUTING RESUMES IF NODE TUPLE IS SKIPPED
. . DCR NETWORK: DCRNET1
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . NODE7SEENBY6 NODE5SEENBY6 5 T OFR4 967 T OFR2 865
. . . . TABLE OFR4
. . . . 967 N D NET1_6TO7_2W 3 947 N
. . . . EXIT TABLE OFR4
. . . NODE5SEENBY6 NODE7SEENBY6 5 T OFR4 865 T OFR2 865
. . . . TABLE OFR2
. . . . 865 N D EXC_6TO5_2W 4 6211 N
. . . .   AFR TCPINFO
TABLE TRIGGRP
OFCTRIG NETBUSY
. AFR $ NIL
Trigger AIN AFR is applicable to office.
. . TABLE TRIGINFO
. . TCPINFO EVENT TCAP R01 TCPIP 0 $
AIN Network Busy TDP: trigger criteria met.
Querying the database will occur if network is busy.
Use the AINMQG option to save the query to a file for use in TstQuery.
. . . . EXIT TABLE OFR2
. . EXIT TABLE DESTNODE
.   N D NET1_6TO4_2W 3 944 N
.   N D NET1_6TO7_2W 3 947 N
.   T OFR2 865

```

**Figure 529 TRAVER example: AFR Interworking with DCR (Continued)**

```
. . TABLE OFR2
. . 865 N D EXC_6TO5_2W 4 6211 N
. .   AFR TCPINFO
TABLE TRIGGRP
OFCTRIG NETBUSY
. AFR $ NIL
Trigger AIN AFR is applicable to office.
. . TABLE TRIGINFO
. . TCPINFO EVENT TCAP R01 TCPIP 0 $
AIN Network Busy TDP: trigger criteria met.
Querying the database will occur if network is busy.
Use the AINMQG option to save the query to a file for use in TstQuery.
. . EXIT TABLE OFR2
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
```

<Traver output Skipped - Non-Relevant>

+++ TRAVER: SUCCESSFUL CALL TRACE +++

AIN Network Busy TDP: trigger criteria met.  
Querying the database will occur if network is busy.  
Use the AINMQG option to save the query to a file for use in TstQuery.

#### DIGIT TRANSLATION ROUTES

1 NET1_6TO5_2W	6211004	ST
2 NET1_6TO7_2W	9475004	ST
3 EXC_6TO5_2W	6211004	ST

TREATMENT ROUTES. TREATMENT IS: GNCT  
1 \*OFLO  
2 LKOUT

+++ TRAVER: SUCCESSFUL CALL TRACE +++

## 22.24 TRAVER for parameter CarrierUsage

The AIN NA014 product release enhances TRAVER for parameter CarrierUsage.

Traver supports response processing after parameter CarrierUsage occurs in SCP messages Analyze\_Route and Forward\_Call.

**Note:** Traver can display translations and routing for the carrier provided at the command line. Traver cannot select a carrier when call processing cannot use the carrier provided on the command line.

The table that follows shows the behavior of TRAVER for the various values of CU and NOC.

**Table 932 Behavior of the functionality for different values of CU and NOC**

		Values that need to be input on the TRAVER command line			
	C U	NOC	TNS CARRIER	TYPE OF CALL	ACTION
1	0	Any	Any	Any	Retain existing functionality.
2	1	Any	Is input	INTERL	The call is routed using the TNS carrier that is input.
3	1	Any	Not input	INTERL	The call is routed to VACT treatment.
4	1	Any	Any	Non INTERL	The call is routed using the SSP provided LPIC carrier which is chosen in the order: 1. LARP provided carrier ..... 2 Originator's carrier ..... 3. LEC.....  A warning message is displayed: "NOC is ignored as TNS Carrier is not given."
5	2	NIL	Is input	Any	The TRAVER is terminated.  An error message is displayed: "NatureOfCarrier Parameter must be LOCAL/INTRALT/INTERL."
6	2	LOCAL	0110 is input	LOCAL	The call is routed using the TNS carrier that is input.
7	2	LOCAL	Other than 0110 is input	LOCAL	The TRAVER processes the call like a line-to-line call.  A warning message is displayed: "Call will be routed to treatment if local."

**Table 932 Behavior of the functionality for different values of CU and NOC**

		Values that need to be input on the TRAVER command line			
	C U	NOC	TNS CARRIER	TYPE OF CALL	ACTION
8	2	LOCAL	Not input	LOCAL	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
9	2	Non LOCAL	Is input	LOCAL	The call is routed like a line-to-line call.
10	2	INTRALT	Is input	INTRALT	The call is routed using the TNS carrier that is input.
11	2	INTRALT	Not input	INTRALT	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
12	2	Non INTRALT	Is input	INTRALT	The call is routed using the SSP provided LPIC carrier which is chosen in the order: 1. LARP provided carrier ..... 2. Originator's carrier ..... 3. LEC .....
13	2	INTERL	Is input	INTERL	The call is routed using the TNS carrier that is input.
14	2	INTERL	Not input	INTERL	The TRAVER is terminated. An error message is displayed: "For CU = OverridePICsOfNOCpresent, carrier is mandatory."
15	2	Non INTERL	Is input	INTERL	The call is routed using the SSP provided PIC carrier which is chosen in the order: 1. LARP provided carrier ..... 2. Originator's carrier ..... 3. DEFAULT_OFFICE_CARRIER .....

Figure 523 shows the displayed output for CarrierUsage/NOC Functionality.

**Figure 530 TRAVER example: CarrierUsage/NOC Functionality**

```

traver l 6136671001 n cdn na 6136671002 tns na cic 0488 ainres r02
Next par is: <RES_TYPE> {NORES,
              AR [<PREFIX_OPTION> {PREFIX}]
                [<CARRIER_USAGE> {CU <OPTIONS> {0,
                                                    1,
                                                    2}}]
                [<NATURE OF CARRIER> {NOC <OPTIONS> {NIL,
                                                         LOCAL,
                                                         INTRALT,
                                                         INTERLT}}],
              FC [<PREFIX_OPTION> {PREFIX}]
              , [<CARRIER_USAGE> {CU <OPTIONS> {0,
                                                    1,
                                                    2}}]
                [<NATURE OF CARRIER> {NOC <OPTIONS> {NIL,
                                                         LOCAL,
                                                         INTRALT,
                                                         INTERLT}}],

              CONT,
              AT,
              STR,
              LNPAR [<LNPMBGOPTS> {MBG <BGTYPE> {LOCAL,
                                                    NATL}
                                <BGID> {0 TO 4294967295}
                                <BGLP> {0 TO 255}
                                <BGGAP> STRING}]
                <ORIG_CALLED_DN> STRING
                [<FLRN_CALLTYPE> {NP,
                                   DD}],
              COLINF <COLLECTED_DIGITS> STRING,
              ETC <SCP_DIGITS> STRING,
              CONNECT <SCP_DIGITS> STRING}
Enter: <RES_TYPE> [<DIG_CONV_TEST>] [<FGD_ORIG>]
      [<SCAIIN>] [<ANT>] [<CPC>] [<SCPINFO>] [<TCNI_INFO>] [<PREXLA>]
      [<PCIINFO>] [<DCRNH>] [<CSI>] [<TARIFF>] [<NPRE_INFO>] [<MOG>]
      <TRACE> [<TRCEOPT>] [<NRR>] [<CDNCHAR>] [<QVPNDIGS>]

```

## 22.25 TRAVER for STR response with Destination Address

This activity enhances the TRAVER tool to modify response processing for the STR message with Destination address. Carrier support for STR response translation is also provided.

When the Destination address is present in the response TRAVER for STR, Originator line attributes are overridden based on Destination address by those provided in Table STRATTRS. The line attributes specified by Table STRATTRS are used to perform POTS translation of the Destination Address.

When the tuple corresponding to Destination address provided in the TRAVER command is not present in Table STRATTRS, originator characteristics are used to translate to the IP.

When an invalid Destination address is provided in the TRAVER command, an error message is displayed indicating an invalid Destination was provided.

The Carrier Support for STR response is achieved using the TNS parameter in the TRAVER command line. The TNS parameter is used to supply the Carrier information associated with the STR response.

### 22.25.1 Example 1: Response Processing with POTS agent as originator

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (4164671002) for a local IP. A warning message is displayed indicating that, based on IP address, Originator line attributes (LINEATTR, XLAPLAN and RATEAREA) are overridden by those provided in Table STRATTRS.

**Figure 531AIN response transaction for STR with Destination address for POTS agent**

Example 1 TRAVER output
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA \$) ( BC 3_1KHZ (CDN NA)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND

**Figure 531AIN response transaction for STR with Destination address for POTS agent**

TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.2 Example 2: Response Processing with Trunk agent as originator**

The following translations are for a Trunk originator (ISUPITIC) receiving an STR response with Destination address (41646710002) for a local IP. A

warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

**Figure 532** TRAVER example: AIN response translation for STR with Destination Address for TRUNK agent

Example 2 TRAVER output
>TRAVER TR ISUPITIC N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA \$) ( BC 3_1KHZ (CDN NA)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND

**Figure 532** TRAVER example: AIN response translation for STR with Destination Address for TRUNK agent

. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.3 Example 3: Response Processing with VFG-IBN originator**

The following translations are for a VFG-IBN originator (VCNCO1) receiving an STR response with Destination address (41646710002) for a local IP. A warning message is displayed indicating that, based in IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

**Figure 533** TRAVER example: AIN response translation for STR with Destination Address for VFG agent

<b>Example 3 TRAVER output</b>
>TRAVER V VCNCO1 N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present. Originator must be able to send in characteristics specified.
TABLE RTECHAR
. LECNA (CDN NA \$) ( BC 3_1KHZ (CDN NA)\$)\$
TABLE VIRTGRPS
VCNCO1 SIZE 4 IBN N COMKODAK 0 0 0 Y N N \$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$

**Figure 533** TRAVER example: AIN response translation for STR with Destination Address for VFG agent

TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT

**Figure 533 TRAVER example: AIN response translation for STR with Destination Address for VFG agent**

+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.4 Example 5: Response Processing with carrier in STR message**

The following translations are for a POTS originator (4164671001) receiving an STR response with Destination address (6136671002) and Carrier parameters for a remote IP. A warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS.

**Figure 534 TRAVER example: AIN response translation for STR with Carrier parameter**

<b>Example 5 TRAVER output</b>
>TRAVER L 4164671001 N CDN NA 6136671002 TNS NA CIC 0120 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR
. IXCDDNA (CDN NA (TNS NA)\$) ( BC 3_1KHZ (CDN NA) (TNS NA)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
6136671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10 10 F 0 STUTTER_DIALTONE P621
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N

**Figure 534**TRAVER example: AIN response translation for STR with Carrier parameter

TABLE PXLAMAP
. IXCDDNA P621 ( XLA DDNA)\$
TABLE STDPRTCT
DDNA ( 1) ( 0) 5
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10120 10120 EA DD 5 T NA MCI Y OFRT 897 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D ISUPOGMCI 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGMCI15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
416 Y 999 1 ( 49) ( 1) ( 4) ( 0) 4 \$
. SUBTABLE HNPACODE
. 6136671002 613667109 FRTE 900
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 900 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D Y1Y0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
416 C467 DD 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATAKLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO

**Figure 534**TRAVER example: AIN response translation for STR with Carrier parameter

MCI 0120 EAP Y Y Y Y N N Y Y Y LONG 14 FGRPC N N N N N N N N N N N N N N Y N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP DEFINED
Using Equal Access (EA) route OFRT 897 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
897 CND EA INTNL SK 2
N D ISUPOGMCI 0 N N
CND ALWAYS SK 1
N D ISUPOGMCI 15 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: Originator's Line attributes are being overridden by STRATTRS
DIGIT TRANSLATION ROUTES
1 ISUPOGMCI 6136671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.5 Example 6: Response Processing when AIN00304 SOC is IDLE**

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (41646710002) for a local IP when AIN00304 SOC is IDLE. A warning message is displayed indicating that, based on IP address, Originator line attributes LINEATTR, XLAPLAN and RATEAREA are overridden by those provided in Table STRATTRS. A second warning is displayed indicating AIN00304 SOC is IDLE and originator characteristics will be used for CallP translation.

**Figure 535**TRAVER example: AIN response translation for STR when SOC is IDLE

<b>Example 6 TRAVER output</b>
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B
Warning: Routing characteristics are present.
Originator must be able to send in
characteristics specified.
TABLE RTECHAR

**Figure 535**TRAVER example: AIN response translation for STR when SOC is IDLE

. LECNA (CDN NA \$) ( BC 3_1KHZ (CDN NA)\$)\$
Warning: Originator's Line attributes are being overridden by STRATTRS
TABLE STRATTRS
4164671002 403 416_PUB_403 L416_LATA1_400
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
+++ TRAVER: SUCCESSFUL CALL TRACE +++
Warning: AIN00304 SOC option is IDLE .Originator's
characteristics will be used by call processing.

**Figure 535**TRAVER example: AIN response translation for STR when SOC is IDLE

Warning: Originator's Line attributes are being overridden by STRATTRS		
DIGIT TRANSLATION ROUTES		
1	PRASID2W	4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT		
1	*OFLO	
2	LKOUT	
+++ TRAVER: SUCCESSFUL CALL TRACE +++		

**22.25.6 Response Processing for missing attributes**

The following translations are for a POTS originator (41646671001) receiving an STR response with Destination address (41646710002) for a local IP. The corresponding tuple for the Destination address is not present in Table STRATTRS.

**Figure 536**TRAVER example: AIN response translation for STR for missing attributes

<b>Example 1 TRAVER output</b>		
>TRAVER L 4164671001 N CDN NA 4164671002 AINRES R02 STR B		
Warning:Attributes not found in Table STRATTRS.		
Using Originators attributes for translation.		
Warning: Routing characteristics are present.		
Originator must be able to send in characteristics specified.		
TABLE RTECHAR		
. LECNA (CDN NA \$) ( BC 3_1KHZ (CDN NA)\$)\$		
TABLE STRATTRS		
TUPLE NOT FOUND		
TABLE LINEATTR		
518 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_P621_418 L467_LATA1_418 \$		
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE		
TABLE XLAPLAN		
416_P621_418 C467 416 P621 TSPS N \$ \$		
TABLE RATEAREA		
L467_LATA1_418 L467 NIL_LATA1 \$		
TABLE DNATTRS		
TUPLE NOT FOUND		
TABLE DNGRPS		
TUPLE NOT FOUND		
TABLE LENFEAT		
TUPLE NOT FOUND		
TABLE OFCVAR		
AIN OFFICE_TRIGGRP TIID		
TABLE PXLAMAP		
. LECNA P621 ( XLA P621)\$		
TABLE STDPRTCT		

**Figure 536**TRAVER example: AIN response translation for STR for missing attributes

P621 ( 1) ( 0) 1
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 4164671002 4164671002 T DD 0 OFRT 897 0 0 NONE
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D PRASID2W 0 N N
. . CND ALWAYS SK 1
. . N D PRASID2W15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HPCPATTN
TUPLE NOT FOUND
TABLE LATAXLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
Checking AIN SDS Trigger Items as SDS is compatible with current call
Checking AIN LNP Trigger Items as LNP is compatible with current call
AIN Info Analyzed TDP: trigger criteria not met.
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 PRASID2W 4164671002 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.7 Example 8: Response Processing for Analyze\_Route response**

The following example displays the output of an Analyze\_Route response TRAVER with the calledparty number datafilled in Table STRATTRS. This example shows STRATTRS data is not used for Analyze\_route response.

**Figure 537**TRAVER example: AIN response translations for Analyze\_Route response

<b>Example 5 TRAVER output</b>
>TRAVER L 4164671001 N CDN NA 6136671002 TNS NA CIC 0120 AINRES R02 AR B
Warning: Routing characteristics are present.
Originator must be able to send in

**Figure 537TRAVER example: AIN response translations for Analyze\_Route response**

characteristics specified.
TABLE RTECHAR
. IXCDDNA (CDN NA (TNS NA)\$) ( BC 3_1KHZ (CDN NA) (TNS NA)\$)\$
TABLE LINEATTR
403 1FR NONE NT 0 10 NILSFC 0 NIL NIL 00 416_PUB_403 L416_LATA1_400 \$
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE XLAPLAN
416_PUB_403 NSCR 416 PUB TSPS Y RESG416 0 0 \$ \$
TABLE RATEAREA
L416_LATA1_400 L416 NIL LATA1 \$
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP TIID
TABLE PXLAMAP
. Tuple not found. Default to old pretranslator name.
TABLE STDPRTCT
PUB ( 1) ( 0) 4
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10 10 F 0 STUTTER_DIALTONE P621
. SUBTABLE AMAPRT
. KEY NOT FOUND
. DEFAULT VALUE IS: NONE OVRNONE N
TABLE PXLAMAP
. IXCDDNA P621 ( XLA DDNA)\$
TABLE STDPRTCT
DDNA ( 1) ( 0) 5
. SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
. 10120 10120 EA DD 5 T NA MCI Y OFRT 897 5 20 N
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 897 CND EA INTNL SK 2
. . N D ISUPOGMCI 0 N N
. . CND ALWAYS SK 1
. . N D ISUPOGMCI15 D179 N
. . EXIT TABLE OFRT
. SUBTABLE AMAPRT
. KEY NOT FOUND

**Figure 537TRAVER example: AIN response translations for Analyze\_Route response**

. DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
416 Y 999 1 ( 49) ( 1) ( 4) ( 0) 4 \$
. SUBTABLE HNPACODE
. 6136671002 613667109 FRTE 900
. SUBTABLE RTEMAP
. . Tuple not found. Default to old index.
. SUBTABLE RTEREF
. 900 T OFRT 730
. . TABLE OFRTMAP
. . . Tuple not found. Default to old index.
. . TABLE OFRT
. . 730 S D Y1Y0_ISUPITOG
. . EXIT TABLE OFRT
. EXIT TABLE RTEREF
EXIT TABLE HNPACONT
LNP Info: Called DN is not resident.
LNP Info: HNPACONT results are used.
TABLE LCASCRCN
KEY NOT FOUND
LCASCRCN TUPLE MISSING
TABLE CLSVSCRC
416 C467 DD 2 N NONE ( 1)
. SUBTABLE CLSVSCR
. KEY NOT FOUND
EA:Local override does not apply to this call.
TABLE LATAKLA
TUPLE NOT FOUND
ASSUMED TO BE DEFAULT INTRALATA, INTRASTATE, STD
TABLE OCCINFO
MCI 0120 EAP Y Y Y Y N N Y Y Y Y LONG 14 FGRPC N N N N N N N N N N N N N N N Y
TABLE EASAC
TUPLE NOT FOUND
OVERLAP CARRIER SELECTION (OCS) DOES NOT APPLY - AIN_OFFICE_TRIGGRP DEFINED
Using Equal Access (EA) route OFRT 897 from Pretranslation
TABLE OFRTMAP
. Tuple not found. Default to old index.
TABLE OFRT
897 CND EA INTNL SK 2
N D ISUPOGMCI 0 N N
CND ALWAYS SK 1
N D ISUPOGMCI 15 D179 N
TABLE OFRTMAP
. Tuple not found. Default to old index.
EXIT TABLE OFRT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**Figure 537**TRAVER example: AIN response translations for Analyze\_Route response

DIGIT TRANSLATION ROUTES
1 ISUPOGMCI                      6136671002                      ST
TREATMENT ROUTES.    TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++

**22.25.8 Example 9: Response Processing for invalid Destination address**

The following translations are for a POTS originator (4164671001) receiving an STR response with invalid Destination address (not a 10 digit number) for a local IP. The corresponding tuple for the Destination address is not present in Table STRATTRS.

**Figure 538**TRAVER example: AIN response translation for invalid Destination Address

<b>Example 1 TRAVER output</b>
>TRAVER L 4164671001 N CDN NA 911 AINRES R02 STR B
Error :Invalid Destination Address-Mandatory 10 digits required



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## 23 TSTQUERY tool

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### 23.1 Directory description

**CAUTION****Possible loss of service**

Avoid using the TSTQUERY tool during peak traffic periods because of the low central processing unit (CPU) priority of command interpreter (CI) commands, and the consequent impact on the T1 timer. Exercising this tool does not affect switch traffic.

TSTQUERY is a menu-driven utility that enables operating company personnel to send AIN test queries to an SCP and display the incoming responses from the SCP.

TSTQUERY provides the following capabilities:

- populates the parameters of an AIN query message
- reads query message information from a file
- saves query message information to a file
- sends the query message
- allows responses to conversation messages
- generates a log of the outgoing and incoming messages
- overwrites the T1 timer for a given test query
- supports CCS7 and Ethernet transport protocol
- provides on-line help

**Note:** No billing records are generated from TSTQUERY.

TSTQUERY is a multi-user tool. The number of users is limited only by the number of MAPCI sessions that can be active at the same time. TSTQUERY can have only one test transaction active at a time. After a test query is sent,

the transaction must be closed by a response or some other sequence before another initial test query can be sent.

## 23.2 Limitations

The TSTQUERY tool has the following limitations and restrictions:

- Messages that originate from TSTQUERY increment messaging OMs and the SOC counters that count event usage.
- The introduction of underscores into the message names means that TSTQUERY files saved prior to NA009 cannot be loaded into versions of TSTQUERY available as part of NA009 or later.
- Update\_Data message is no longer valid as of NA009. Any TSTQUERY files containing an Update\_Data message cannot be loaded into versions of TSTQUERY available as part of NA009 or later.
- The next event list (NEL) transmitted in the EDP-Request and EDP-Notification message parameters of the Request\_Report\_BCM\_Event (RRBCME) message is not sanity checked or enforced. When any RRBCME message is received, all of the event request and notification messages are available for the user to send. It is up to the user to comply with the NEL sent in the RRBCME message.
- The number of bytes that can populate the IPReturnBlock parameter is limited by the DMS-100 switch command interface that restricts the number of characters that can be entered on a line. Since a byte can take up one, two or three characters, the actual number of bytes that can be entered depends on the size of the individual bytes entered.
- The SCP can attempt to cancel a non user interruptible announcement when zero digits are collected by sending a Cancel\_Resource\_Event operation in a Conversation Package (GR-1298-CORE).

## 23.3 Supported messages and parameters

TSTQUERY supports both AIN Essentials and AIN Service Enablers messages and parameters, depending on the selected values (either R01 and R02). Table 933 on page 637, Table 934 on page 640 and Table 935 on page 646 list the messages and parameters supported by TSTQUERY for AIN Essentials and AIN Service Enablers (R01 and R02 application values).

**Note:** TSTQUERY uses the AIN Service Enablers' (R02) implementation of parameters for R01 parameters that have been updated in GR1299.

Table 933 AIN Service Enablers messages reported by TSTQuery (Sheet 1 of 4)

Type	Message
SSP call-related messages	Call_Info_From_Resource
	Close
	CTR_Clear
	Failure_Outcome
	Info_Analyzed
	Info_Collected
	Network_Busy
	O_Abandon
	O_Answer
	O_Called_Party_Busy
	O_Disconnect
	O_Mid_Call
	O_No_Answer
	O_Suspected
	O_Term_Seized
	Origination_Attempt
	Resource_Clear
	Success_Outcome
	T_Answer
	T_Busy
	T_Disconnect
	T_Mid_Call
	T_No_Answer
	Termination_Attempt
	Term_Resource_Available
	Timeout

**Table 933 AIN Service Enablers messages reported by TSTQUERY (Contin-**

Type	Message
SCP or adjunct call-related messages	Acknowledge
	Analyze_Route
	Authorize_Termination
	Call_Info_To_Resource
	Cancel_Resource_Event
	Close
	Collect_Information
	Connect_To_Resource
	Continue
	Create_Call
	Disconnect
	Disconnect_Leg
	Forward_Call
	Merge_Call
	Move_Leg
	Offer_Call
	Originate_Call
	Reconnect
	Send_To_Resource
	Split_Leg

**Table 933 AIN Service Enablers messages reported by TSTQUERY (Contin-**

Type	Message
non-call-related messages	ACG
	ACG_Global_Ctrl_Restore
	ACG_Global_Ctrl_Restore_Success
	ACG_Overflow
	Control_Request
	Echo_Reply
	Echo_Request
	Furnish_AMA_Information
	Monitor_For_Change
	Monitor_Success
	NCA_Data
	NCA_Request
	NCA_Response
	Query_Request
	Query_Response
	Request_Report_BCM_Event
	Send_Notification
	Status_Reported
	Termination_Notification
	Update
	Update_Data
	Update_Request
Update_Success	
abnormal	Application_Error
	Report_Error
	Failure_Report
<b>Note:</b> Messages in shaded areas are not supported for this release.	

The following is the key to Table 934 on page 640 and Table 935 on page 646:

- B — both AIN Essentials and AIN Service Enablers support the parameter
- SE — only AIN Service Enablers supports the parameter
- a dash (-) —GR-1299 does not define the parameter
- X — GR-1299 defines the parameter, but TSTQUERY does not support the parameter

**Table 934 Outgoing messages and parameters supported by TSTQUERY**

	SSP call-related messages																non-call-related messages				
Parameters	Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error	
AccessCode	-	-		B	B	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
ACGEncountered	-	-		B	B	B	-	SE		SE	B	-	-	SE	B	SE	-	SE	-	-	-
AMAMeasurement	-	-	SE	-	-	-	-	-		-	-	SE	-	-	-	-	-	-	-	-	-
AMASequence Number	-	-		X	X	X	-	X		X	X	-	-	X	X	X	-	X	-	-	-
Amp1	X	SE		B	B	B	X	SE		SE	B	B	X	X	B	X	-	X	SE	-	-
Amp2	X	X		X	X	X	X	X		X	X	X	X	X	X	X	-	X	X	X	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																non-call-related messages	abnormal			
	Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error	
Parameters																					
ApplicationError String	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B
BCMType	-	-	S E	-	-	-	-	-	-	-	-	-	-	-	-	-	S E	-	-	-	-
BearerCapability	-	S E		B	B	B	S E	S E	S E	S E	B	-	S E	S E	B	S E	S E	S E	-	-	-
BusyCause	-	-		-	-	-	-	S E		-	-	-	-	S E	-	-	-	-	-	B	-
BusyType	-	-		-	-	-	-	-	-	-	-	-	-	S E	-	-	-	-	-	-	-
CallConfigurationID	-	-	S E	-	-	-	-	-	-	-	-	-	-	-	-	-	S E	-	-	-	-
CalledPartyID	-	-		B	-	B	-	S E		S E	-	-	-	S E	B	S E	-	S E	-	-	-
CalledPartyStation Type	-	-		-	-	-	-	-		-	-	-	-	X	B	S E	-	X	-	-	-
Calling Geodetic Location	-	-		S E	-	-	-	-		-	-	-	-	-	S E	-	-	-	-	-	-
CallingPartyBGID	-	-		B	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																	non-call-related messages		
	abnormal																			
Parameters	Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
CallingPartyID	-	-	-	B	B	B	-	S	-	S	B	-	-	S	B	S	-	S	-	-
Carrier	-	-	S	B	B	B	-	S	-	S	B	B	-	-	-	-	-	-	-	-
ChargeNumber	-	-	-	B	B	B	-	S	-	S	B	-	-	S	B	S	-	S	-	-
ChargeParty StationType	-	-	-	B	B	B	-	S	-	S	B	-	-	S	B	S	-	S	-	-
ClearCause	-	-	S	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
ClearCauseData	-	-	S	-	-	-	-	-	-	-	-	S	-	-	-	-	-	-	-	-
CloseCause	-	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CollectedAddress Info	-	-	S	B	B	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
CollectedDigits	-	-	S	B	B	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-
ConnectTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages																	non-call-related messages	abnormal		
Parameters	Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error	
CTRConnection	-	-	-	X	-	-	-	X	-	X	-	-	-	X	X	X	-	-	-	-	-
DisconnectCause	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-
Extension Parameter	X	X	-	X	X	X	X	X	-	X	X	X	X	X	X	X	-	X	X	X	X
FailureCause	-	-	SE	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-	-	-
GenericAddress List	-	-	-	SE	SE	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
GenericDigitsList	-	-	-	SE	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
GenericName	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	SE	SE	-	SE	-	-	-
IPReturnBlock	SE	-	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-
Lata	-	-	-	B	B	B	-	SE	-	SE	B	-	-	SE	B	SE	-	SE	-	-	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

	SSP call-related messages															non-call-related messages				
Parameters	Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
LegID	-	-	S E	-	-	-	-	-	S E	-	-	-	-	-	-	-	S E	-	-	-
NetworkSpecific Facilities	-	-	-	S E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notification Indicator	-	-	-	-	-	S E	S E	S E	S E	S E	X	-	S E	S E	-	-	S E	S E	-	-
OriginalCalledParty ID	-	-	-	B	B	B	-	S E	-	S E	-	-	-	S E	B	S E	-	S E	-	-
PointInCall	-	-	S E	-	-	-	-	-	S E	-	-	-	-	-	-	-	S E	-	-	-
Prefix (see note)	-	-	-	S E	S E	S E	-	S E	-	S E	-	-	-	-	-	-	-	-	-	-
RedirectingPartyID	-	-	-	B	B	B	-	S E	-	S E	-	-	-	S E	B	S E	-	S E	-	-
Redirection Information	-	-	-	B	B	B	-	S E	-	S E	-	-	-	S E	B	S E	-	S E	-	-
RTPService Indicator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
Sap	-	-	-	X	X	X	-	X	-	X	X	-	-	X	X	X	-	X	-	-

Table 934 Outgoing messages and parameters supported by TSTQUERY (Continued)

		SSP call-related messages															non-call-related messages	abnormal			
Parameters		Call_Info_From_Resource	Close	CTR_Clear	Info_Analyzed (TDP-R)	Info_Collected (TDP-R)	Network_Busy (TDP-R and EDP-R)	O_Answer (EDP-R)	O_Called_Party_Busy (TDP-R and EDP-R)	O_Disconnect (EDP-R)	O_No_Answer (TDP-R and EDP-R)	Orrigation_Attempt (TDP-R, EDP-R and EDP-N)	Resource_Clear	T_Answer (EDP-N)	T_Busy (TDP-R and EDP-R)	Termination_Attempt (TDP_R)	Term_Resource_Available (TDP_R)	Timeout (EDP-R)	T_No_Answer (TDP-R and EDP-R)	Termination_Notification	Error
STRConnection	-	-	-	X	-	-	-	X	-	X	-	-	-	-	X	X	X	-	X	-	-
TCM	-	-	-	B	B	B	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-
Termination Indicator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
TriggerCriteriaType	-	-	-	B	B	B	-	S	-	S	B	-	-	S	B	S	-	-	S	-	-
UserID	-	S	-	B	B	B	S	S	S	S	B	-	S	S	B	S	S	S	S	-	-
VerticalService Code	-	-	-	B	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Note:</b> Parameter Prefix is not supported for NELs at the Network_Busy TDP-R/EDP-R.																					

Table 935 Incoming messages and parameters supported by TSTQUERY

Parameters	SCP or adjunct call-related messages												non-call-related messages			abnormal	
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification		Error
AbsoluteSCPTIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AlternateBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-	-
AlternateCarrier	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-
AlternateDialingPlanInd	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
AlternateTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-	-
AMAAlternateBilling Number	B	B	-	-	-	SE	SE	B	B	B	SE	B	-	-	-	-	-
AMABillingFeature	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-	-
AMABusinessCustomerID	B	B	-	-	-	-	SE	B	B	B	SE	B	-	-	-	-	-
AMADigitsDialedWC	B	B	-	-	-	SE	-	B	B	B	SE	B	-	-	-	-	-
AMALineNumber	B	B	-	-	-	SE	-	B	B	B	SE	B	-	-	-	-	-
AMAMeasure	-	-	-	-	-	-	SE	-	-	-	-	SE	-	-	-	-	-
AMASequenceNumber	X	X	-	-	-	X	SE	X	X	X	X	X	-	-	-	-	-
AMAServiceProviderID	X	X	-	-	-	X	SE	X	X	X	X	X	-	-	-	-	-
AMASlpID	B	B	-	-	-	SE	SE	B	B	B	SE	B	-	-	-	-	-
Amp1	B	B	B	SE	B	X	-	B	B	B	SE	B	-	-	-	-	-
Amp2	X	X	X	X	X	X	-	X	X	X	X	X	-	-	-	-	-
AnswerIndicator	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-
ApplicationErrorString	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B
BearerCapability	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-	-
CalledPartyID	B	-	-	-	-	SE	-	-	-	B	-	SE	-	-	-	-	-
CallingPartyBGID	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

Parameters	SCP or adjunct call-related messages												non-call-related messages			abnormal
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	
CallingPartyID	B	B	-	-	-	-	-	-	-	B	SE	-	-	-	-	-
Carrier	B	-	-	-	-	-	-	-	-	B	-	SE	-	-	-	-
Carrier (with NOC)	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CarrierUsage	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ChargeNumber	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
ChargePartyStationType	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
CloseCause	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-
CollectedDigits	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-	-
ControlCauseIndicator	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
ControlEncountered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ControllingLegTreatment	-	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
DestinationAddress	-	-	-	-	-	-	SE	-	-	-	-	SE	-	-	-	-
DisconnectFlag	-	-	-	-	-	-	SE	-	-	-	-	B	-	-	-	-
DisplayText	-	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-
DPCConverter	-	-	-	-	-	SE	SE	-	-	-	-	SE	-	-	-	-
EchoData	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-
EDPNotification	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
EDPRequest	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
ExtensionParameter	SE	X	X	X	X	X	-	X	X	X	X	X	X	X	X	X
ExtendedRinging	X	X	X	X	X	X	-	X	X	X	X	B	X	X	X	X
ForwardCallIndicator	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

Parameters	SCP or adjunct call-related messages												non-call-related messages			abnormal
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	
GapDuration	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GapInterval	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
GenericAddressList	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
GenericName	SE	SE	-	-	-	-	-	-	-	SE	SE	-	-	-	-	-
GlobalTitleAddress	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
IntervalTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LegId	-	-	-	-	-	-	SE	-	-	-	-	-	-	-	-	-
LocalSSPTime	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NetworkSpecificFacilities	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ONoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
OutputPulseNumber	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
OverflowBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-
PartyID	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
PartyOnHold	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
PassiveLegTreatment	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
Prefix	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
PrimaryBillingIndicator	B	B	-	-	-	SE	SE	B	B	B	SE	B	-	-	-	-
PrimaryTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
RedirectingPartyID	B	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
RedirectionInformation	SE	-	-	-	-	-	-	-	-	SE	-	-	-	-	-	-
ResourceType	-	-	SE	-	-	-	SE	-	-	-	-	B	-	-	-	-

Table 935 Incoming messages and parameters supported by TSTQUERY (Continued)

Parameters	SCP or adjunct call-related messages												non-call-related messages			abnormal
	Analyze_Route	Authorize_Termination	Call_Info_To_Resource	Cancel_Resource_Event	Close	Collect_Information	Connect_To_Resource	Continue	Disconnect	Forward_Call	Offer_Call	Send_To_Resource	ACG	Request_Report_BCM_Event	Send_Notification	
RTPReroutingNumber	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
SecondAlternateBillingIndicator	B	-	-	-	-	SE	-	-	-	B	-	-	-	-	-	-
SecondAlternateCarrier	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
SecondAlternateTrunkGroup	B	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-
ServiceContext	X	X	X	X	-	X	SE	X	X	X	X	X	-	-	-	-
ServiceProviderID	X	X	X	X	-	X	SE	X	X	X	X	X	-	-	-	-
StrParameterBlock	-	-	SE	-	-	-	SE	-	-	-	-	B	-	-	-	-
TCM	B	B	-	-	-	-	-	-	-	B	-	-	-	-	-	-
Timeout Timer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
TNoAnswerTimer	-	-	-	-	-	-	-	-	-	-	-	-	-	SE	-	-
TranslationType	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-
TriggerCriteriaFlag	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TSTRCTimer	-	-	-	-	-	-	-	-	-	-	-	SE	-	-	-	-
UserID	-	-	-	-	B	-	-	-	-	-	-	-	-	-	-	-

**Note 1:** Parameter Prefix is not supported for next event list (NEL) EDPs.

**Note 2:** The Special Route parameter in extension parameter is only supported for AIN TFS for 800P service.

## 23.4 Using TSTQUERY

Before a test query can be sent, various pieces of information must be specified:

- application—R01 (maps to B in the tables) or R02 (maps to either SE or B)
- transport—value is SS7 (for CCS7) or TCPIP (for Ethernet)
- T1 Timer Value—range is 1–99 seconds; default is 3 seconds
- message—must be one of the AIN SSP query message types
- message parameters—the message parameters supplied depend on the query message type

This information can be specified by the user by loading a file using the READ\_ menu option or by manually entering the information using the CI commands provided by the TSTQUERY. All the message settings are displayed on-screen except for the message parameters that can be viewed using the See\_Parm menu option. To launch a query, the application, transport and query message type must be specified. When AIN software is not present in the office, no AIN information is displayed.

To run the TSTQUERY utility, enter the TESTTOOL menu in the MAPCI utility and select the TSTQUERY option from the menu. The TSTQUERY menu is shown in the following figure.

**Figure 539 TSTQUERY main menu**

```

Application: Outgoing Message:
Transport:T1_Timer(sec) :
Session ID:

TSTQUERY
0 Quit
2 TSTQUERY:
3 Read_
4 Save_
5
6 SetAppl_
7 SeTrnsp_
8 SeT1_
9 SetMsg_
10
11 ClrParm_
12 ListParm
13 SeeParm_
14
15 Send
16
17
18 Help_
CMAP5
Time 17:01 >

```

Alternatively, access TSTQUERY from the CI level of the MAP terminal by typing

**>MAPCI;TESTTOOL;TSTQUERY**

then press the enter key.

To return to CI enter the following command from CI level:

**>QUIT MAPCI**

A query is sent using the SEND menu option. When an automatic code gapping control exists for the global title address included in the query, the encountered parameter ACG is automatically added to the query (ACG does not gap test queries).

When the SEND option is used, the user can save the message information in a file. While TSTQUERY waits for a response, no further commands can be executed.

After a query is sent, one of the following events can occur:

```

Application: R02      OutgoingMessage: Info_Collected
Transport:   SS7      T1_Timer(sec):
SessionID: 12372

TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit      end
2
3 Read_      Transaction ID:          9
4 Save_      Elapsed Time Between Query And Response:
5           0 minute(s) 2 second(s) 42 millisecond(s)
6 SetAppl_
7 SetTrnsp_  SCP Response Message:  Analyze_Route
8 SetT1_     Called Party ID:       6136211002
9 SetMsg_    Nature of Number:     National (significant) number
10          Numbering Plan: ISDN Numbering Plan
11 ClrParm_  Elapsed Time Between Query And Response:
12 ListParm  0 minute(s) 2 second(s) 42 millisecond(s)
13 SeeParm_
14          SCP Response Message: Request_Report_BCM_Event
15 Send      EDP Request:
16          0_Disconnect_Called
17          A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:00 >

```

- A response message is received before the timer expires—the message is displayed on the screen and, when previously specified, dumps to a file.
- A conversation message is received before the timer expires—the conversation message is displayed. The user can generate a message to respond to the conversation message received. When the user does not respond with the correct information or does not respond within a specified period of time, an error message is displayed.
- Response time-out—the message is not received within the time specified by the T1 timer. An error message is displayed.

Help can be obtained by entering HELP at the command prompt.

#### 23.4.1 TSTQUERY menu commands

When a TSTQUERY session is initiated, a menu appears on the MAP terminal display. Each menu option is described in the following paragraphs.

It is possible to use abbreviated parameter names with commands ClrParm, ListParm, and SeeParm. The abbreviated parameter names display on the screen when commands SetMsg or ListParm are invoked.

#### **23.4.1.1 Command QUIT**

Command QUIT terminates the current TSTQUERY session. Information is lost unless the Save command is used to store the information in a file. When the Quit command is invoked in the middle of a transaction, the transaction and all parameter values are lost.

#### **23.4.1.2 Command READ**

Command READ reads the file from a previously saved query. It prompts for the name of the file that contains the query information. Command READ reuses the existing READ CI command, so rules for using the CI READ command apply to the TSTQUERY READ command. For more information on the syntax of an input file, see Section 23.4.2 “Input from a file” on page 657.

#### **23.4.1.3 Command SAVE**

Command SAVE permits the saving of the contents of a query to a file. The user is prompted for the device name and file name. File access occurs using the READ command for future queries. SAVE overwrites existing files with the same name.

#### **23.4.1.4 Command SetAppl**

Command SetAppl allows the user to select the AIN application to be tested, such as R01 or R02. When a value for this command is not specified, the screen displays all possible values.

For AIN, the menu option SetAppl accepts R02 as a valid application message set. This value displays in the application field of the MAP CI display.

#### **23.4.1.5 Command SeTrnsp**

Command SeTrnsp permits the user to select the transport medium. The DMS-100 switch supports signaling system 7 (SS7) for AIN. The user specifies the GTTname and GTTsource.

#### **23.4.1.6 Command SeT1**

Command SeT1 permits the user to overwrite the value of the T1 timer for a given test query. The T1 timer times the response. When a response is not received from the SCP within the time-out period, a time-out error occurs and the TSTQUERY tool informs AIN generic message handler of this event by sending a T1 error message. When a T1 timer value is not specified, command SeT1 uses a default value of 3 seconds.

#### **23.4.1.7 Command SetMsg**

Command SetMsg permits the user to specify an AIN message for the current query. When entered with a valid AIN message, this command displays the allowed parameters for the message. Each parameter has a command that permits the user to set its value. When a value is not specified following command SetMsg, acceptable values for the message display on the screen

The SetMsg command displays the Timeout message in the extended list of valid messages when an event request or notification is received in a Request\_Report\_BCM\_Event. A sample message containing the Timeout event request is shown in Figure 525 below.

The SetMsg command supports the O\_Disconnect EDP-R when the NEL is armed in a RRMCMCME component of a message. Sample messages containing the O\_Disconnect and O\_Disconnect\_Called events are shown in figures 526 and 527, respectively. The following parameters are supported for O\_Disconnect:

- Bearer Capability
- UserID
- NotificationIndicator
- DisconnectCause
- LegIDParm
- PointInCall

**Note:** T\_Resource\_Available is a valid operation for command SetMsg.

**Figure 540** Sample message containing Timeout event request

```

<UID>UserID (M)lyzedefault <BC >BearerCapability (M)d
Transport: SS7 T1_Timer(sec): 15 SessionID: 8363
TSTQUERY Close NEL with an EDP-R or Close before quitting
0 Quit Send
2
3 Read_ Transaction ID: 7
4 Save_ Elapsed Time Between Query And Response:
5 0 minute(s) 0 second(s) 106 millisecond(s)
6 SetAppl_
7 SeTrnsp_ SCP Response Message: Analyze_Route
8 SeT1_ Called Party ID: 4164631001
9 SetMsg_ Nature of Number: National (significant) number
10 Numbering Plan: ISDN Numbering Plan
11 ClnParm_ AMAslpID: 123456789
12 ListParm Elapsed Time Between Query And Response:
13 SeeParm_ 0 minute(s) 0 second(s) 106 millisecond(s)
14
15 Send SCP Response Message: Request_Report_BCM_Event
16 EDP Request:
17 Timeout
18 Help_ TimeoutTimer: 5
CMAP1 A NEL is in progress. DO NOT quit before closing it!
Time 16:50
>

```

Figure 541 Sample message containing O\_Disconnect Calling Event

```

Application: R02      OutgoingMessage: Info_Collected
Transport:  SS7      T1_Timer(sec):
                                           SessionID: 12372
TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit        end
2
3 Read_       Transaction ID:      11
4 Save_       Elapsed Time Between Query And Response:
5             0 minute(s) 2 second(s) 70 millisecond(s)
6 SetAppl_
7 SeTrnsp_   SCP Response Message:  Analyze_Route
8 SeT1_       Called Party ID:      6136211002
9 SetMsg_     Nature of Number:  National (significant) number
10            Numbering Plan:  ISDN Numbering Plan
11 ClnParm_   Elapsed Time Between Query And Response:
12 ListParm   0 minute(s) 2 second(s) 70 millisecond(s)
13 SeeParm_
14            SCP Response Message:  Request_Report_BCM_Event
15 Send       EDP Request:
16            O_Disconnect
17            A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:09 >

```

Figure 542 Sample message containing O\_Disconnect\_Called Event

```

Application: R02      OutgoingMessage: Info_Collected
Transport:   SS7      T1_Timer(sec):
                                           SessionID: 12372
TSTQUERY      Close NEL with an EDP-R or Close before quitting
0 Quit      end
2
3 Read_      Transaction ID:          9
4 Save_      Elapsed Time Between Query And Response:
5           0 minute(s) 2 second(s) 42 millisecond(s)
6 SetAppl_
7 SeTrnsp_   SCP Response Message:   Analyze_Route
8 SeT1_      Called Party ID:        6136211002
9 SetMsg_    Nature of Number:     National (significant) number
10          Numbering Plan:   ISDN Numbering Plan
11 ClrParm_  Elapsed Time Between Query And Response:
12 ListParm  0 minute(s) 2 second(s) 42 millisecond(s)
13 SeeParm_
14          SCP Response Message: Request_Report_BCM_Event
15 Send      EDP Request:
16          O_Disconnect_Called
17          A NEL is in progress. DO NOT quit before closing it!
18 Help_
TEAM11
Time 15:00 >

```

#### 23.4.1.8 Command ClrParm

Command ClrParm permits the user to clear the value of a parameter. When Clrparm ALL is entered, the system clears the values of all specified parameters. Clearing the value of a parameter indicates that the parameter is not sent.

#### 23.4.1.9 Command ListParm

Command ListParm lists all the parameters that are valid for the message specified for the current query. The following parameters are supported for the Timeout message:

- UserID
- Bearer Capability
- LegID
- BCMType
- PointInCall
- CallConfigurationID
- NotificationIndicator

The Timeout event request behavior is similar to existing NELs.

*Note:* Parameter CarrierUsage is a valid parameter for command ListParm..

#### **23.4.1.10 Command SeeParm**

Command SeeParm permits the user to see the current values of parameters, either one parameter at a time or for all the specified parameters. It permits the user to view the specified application, transport, or message. The valid options for this command are ALL, application, transport, message, and the name of a parameter.

*Note:* For parameter CarrierUsage, only NatureOfCarrier is displayed.

#### **23.4.1.11 Command Send**

Command Send permits the user to send an AIN message to the SCP, depending on the application chosen by SetApp1. The response can be saved by specifying a valid file and device name.

### **23.4.2 Input from a file**

All information required to send a query from a CI file can be input. A user can load this file using the READ command from the TSTQUERY menu. The following syntax rules apply to CI files that are used for TSTQUERY commands:

- the file contains only TSTQUERY commands
- each file line contains only one command
- a plus sign (+) at the end of a line indicates that the command continues on the next line
- the order of commands must be SetAppl and SetMsg

An example of a CI TSTQUERY file:

```
>SetAppl R01
>SeT1 2
>SetMsg InfoAnalyzed
>ChargeNumber 5 5 2 2 1234
>BearerCapability SPEECH
>SeTrnsp SS7 AINGTT Charge
```

### **23.4.3 Interactions with ACG**

When ACG controls are active, the system enters parameter ACGEncountered from the ACG database. A user cannot enter parameter ACGEncountered manually.

#### 23.4.4 Response delay

When no error occurs during the transaction and the SCP sends a response within the period specified by the T1 timer, then the MAP display displays a response message. When the SCP response is directed to a named file at the time the query is sent, the system saves the SCP response in a file while it is being displayed.

#### 23.4.5 Error message

The TSTQUERY tool displays an error message on the screen when any of the following events occur:

- The system does not receive an answer from the SCP within the period specified by the T1 timer.
- The system receives an erroneous query.
- The SCP sends a corrupted response.
- There is no reply to a conversation request message from the SCP within the time-out period governed by the AIN generic message handler.

### 23.5 TSTQUERY processing of messages

The SEND command causes TSTQUERY to send the composed message. When a response is expected, TSTQUERY waits for the components of the SCP's response. This section explains how TSTQUERY processes those components.

The most common query and response scenario is as follows:

1. The user composes the query message and invokes the SEND command.
2. TSTQUERY sends the message through the transport previously specified with setTransp.
3. TSTQUERY waits the number of seconds specified by the T1 timer.
4. When a message is received before the T1 timer expires, then it and any other messages sent in the same package are dumped to the screen display, a log is generated, and the messages are saved to a file, when specified.
5. When a message is not received before the T1 timer expires, then TSTQUERY sends the appropriate error message to the SCP and the appropriate output devices.
6. Control returns to the user.

Other messages, such as conversation messages, are sent the same way with the following differences:

- TSTQUERY can wait for a response, or not
- the response is processed differently

The user should not quit TSTQUERY while any of the following activities are pending:

- outstanding Send\_Notifications or Termination\_Notifications requests
- open STR conversation transactions
- open NEL transaction

When the user does quit TSTQUERY while a transaction is open, an automatic audit process closes the open transaction. Similarly, the user can use the disp\_trid command to manually close the open transaction(s).

In general, once the message is sent, TSTQUERY determines, based on the message, whether to wait for a response from the SCP or not. For example, the SCP is not expected to respond to notification messages, such as Termination\_Notification. However, queries, such as the Info\_Analyzed message, and messages that TSTQUERY has sent as part of a conversation require, do require a response. TSTQUERY supports more elaborate message exchanges with the SCP such as Send\_Notification, ACG as described in the “DMS-100 Family AIN Service Enablers Product Specification, Release NA009”. The following points are common to all response message processing:

- TSTQUERY supports the display of incoming multi-component packages. ACG can arrive as part of these packages and are dumped to the screen display or to a file. The NCR application processes these messages according to GR-1298 and TSTQUERY cannot respond to them. TSTQUERY receives the components of any response package in the same way as the DMS-100 SSP applications; one component at a time. TSTQUERY waits after each message is sent for either an incoming component or the T1 timer to expire. When a component is received before the timer expires, TSTQUERY dumps the message and then resets the timer to wait for any further components from the same message or further TCAP packages. Each component is processed as a message when it is received by TSTQUERY. When TSTQUERY’s T1 timer expires before a new component appears, control is returned to the MAP display so the user can react to the incoming messages.
- Part of TSTQUERY’s response processing updates the messages that are legal to send, given the transactions the SCP has open. For AIN Essentials and AIN Service Enablers, when TSTQUERY is started or is outside of an

ongoing conversation, it allows the user to send the following basic SSP AIN query messages:

- Origination\_Attempt
- Info\_Collected
- Info\_Analyzed
- Termination\_Attempt
- Network\_Busy
- O\_Called\_Party\_Busy (applicable to AIN Service Enablers only)
- O\_No\_Answer (applicable to AIN Service Enablers only)
- T\_Busy (applicable to AIN Service Enablers only)
- T\_No\_Answer (applicable to AIN Service Enablers only)
- Term\_Resource\_Available (applicable to AIN Service Enablers only)

After most conversations, the Error message can also be sent, but not immediately after another error message.

See Section 23.5.1 “Send\_Notification” on page 660 to Section 23.5.4 “ACG” on page 661 for a description of the messages that can be sent.

### **23.5.1 Send\_Notification**

The information in this section applies to AIN Essentials and AIN Service Enablers.

When the SCP has sent a Send\_Notification message, it is expecting a Termination\_Notification message from the SSP (when the associated call has completed). TSTQUERY tracks whether or not a Send\_Notification has arrived and allows the user to build the corresponding Termination\_Notification only when one has arrived.

*Note:* It is the user’s responsibility to ensure that the mandatory EchoData parameter contains the same six bytes that were in the original Send\_Notification message.

### **23.5.2 Send\_To\_Resource**

The information in this section applies to AIN Essentials and AIN Service Enablers.

When the SCP responds to a query with a Send\_To\_Resource message then TSTQUERY restricts you to send only the messages that are legal in the context of the STR’s persistent transaction: Resource\_Clear and Error. TSTQUERY also handles the special case of the SCP sending a Cancel\_Resource\_Event while the transaction is still open.

TSTQUERY transparently handles the management of the persistent transaction. The user does not need to track or enter the transaction to create Resource\_Clear messages for the conversation.

### 23.5.3 Request\_Report\_BCM\_Event

The information in this section applies AIN Service Enablers only.

This incoming message extends the set of legal messages the TSTQUERY user can compose. Once the message has been received, the user is allowed to compose and send any of the following event notification and request messages:

- Network\_Busy
- O\_Called\_Party\_Busy
- O\_No\_Answer
- T\_Busy
- T\_No\_Answer
- T\_Answer
- O\_Answer

The Close message is also available to close the transaction without using an event message.

The RRBCME message specifies the events that are to be armed in parameters EDP-Request , EDP-Notification and Timeout EDP-R. TSTQUERY does not enforce this by restricting the messages you can compose, the user should compose the messages that the call scenario requires. This includes ensuring the messages are properly flagged as notifications or requests using parameter NotificationIndicator.

TSTQUERY transparently tracks the transaction through the event notification or request transaction id of the RRBCME and ensures that the correct transaction ID is used for the EDP messages.

### 23.5.4 ACG

The information in this section applies to AIN Essentials and AIN Service Enablers.

The SCP can choose to send an ACG message in the same package as a response. TSTQUE displays this message and the non call-related application also receives this message.



---

## 24 AIN Scope Change tool (AINSCT)

---

### 24.1 Directory description

The AIN Scope Change Tool (AINSCT) provides the following capabilities:

- converts an existing line based subscription of PFC/SFC trigger in TRIGITM data model to customer group based subscription in TRIGITM data model.
- converts an existing line based subscription of PFC/SFC trigger in TRIGGRP data model to customer group based subscription in TRIGITM data mode

### 24.2 Functional Overview

The following figure shows the functional behavior of the Scope Change tool (AINSCT).

Figure 543 Functional behavior diagram of AINSCT tool

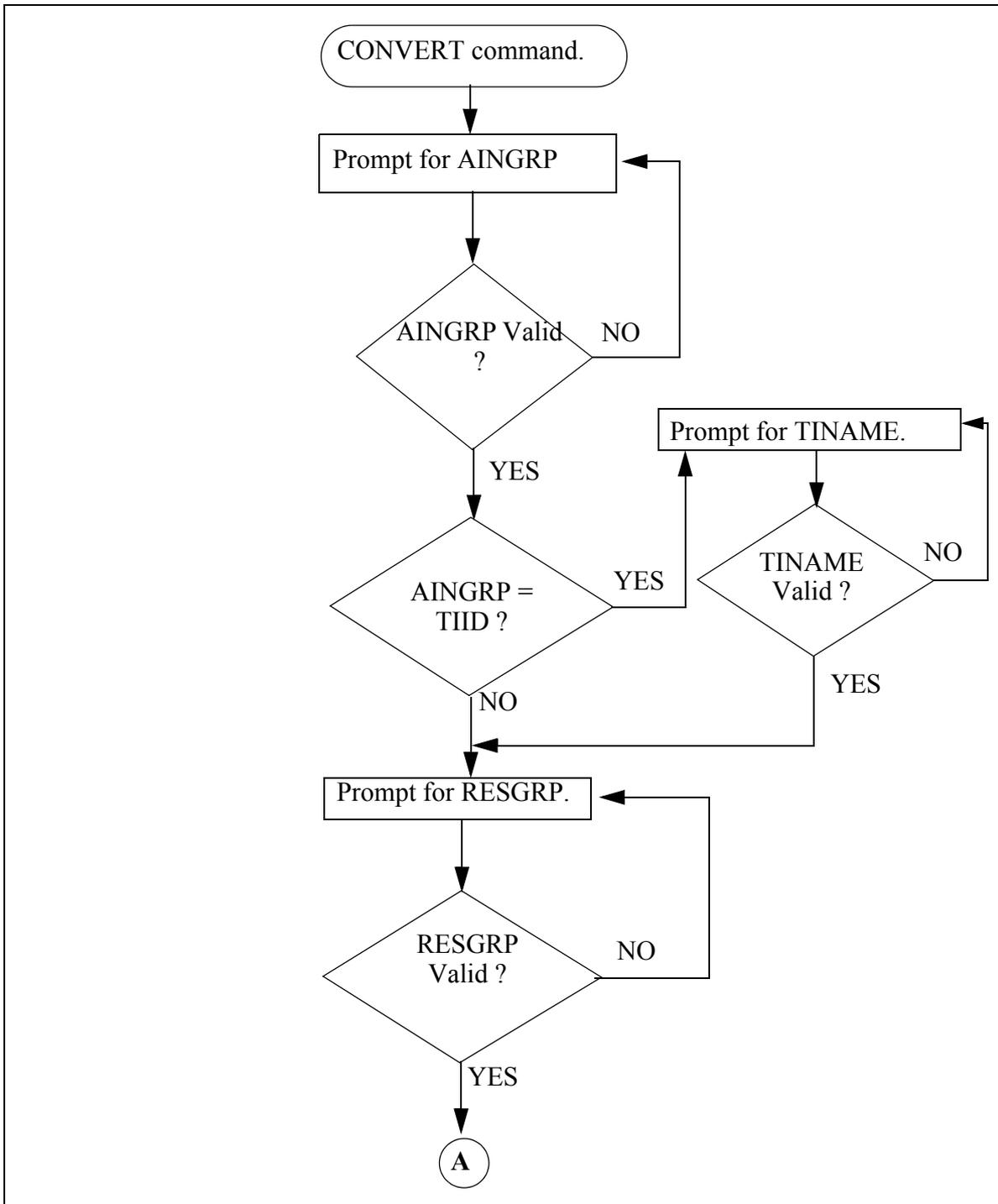
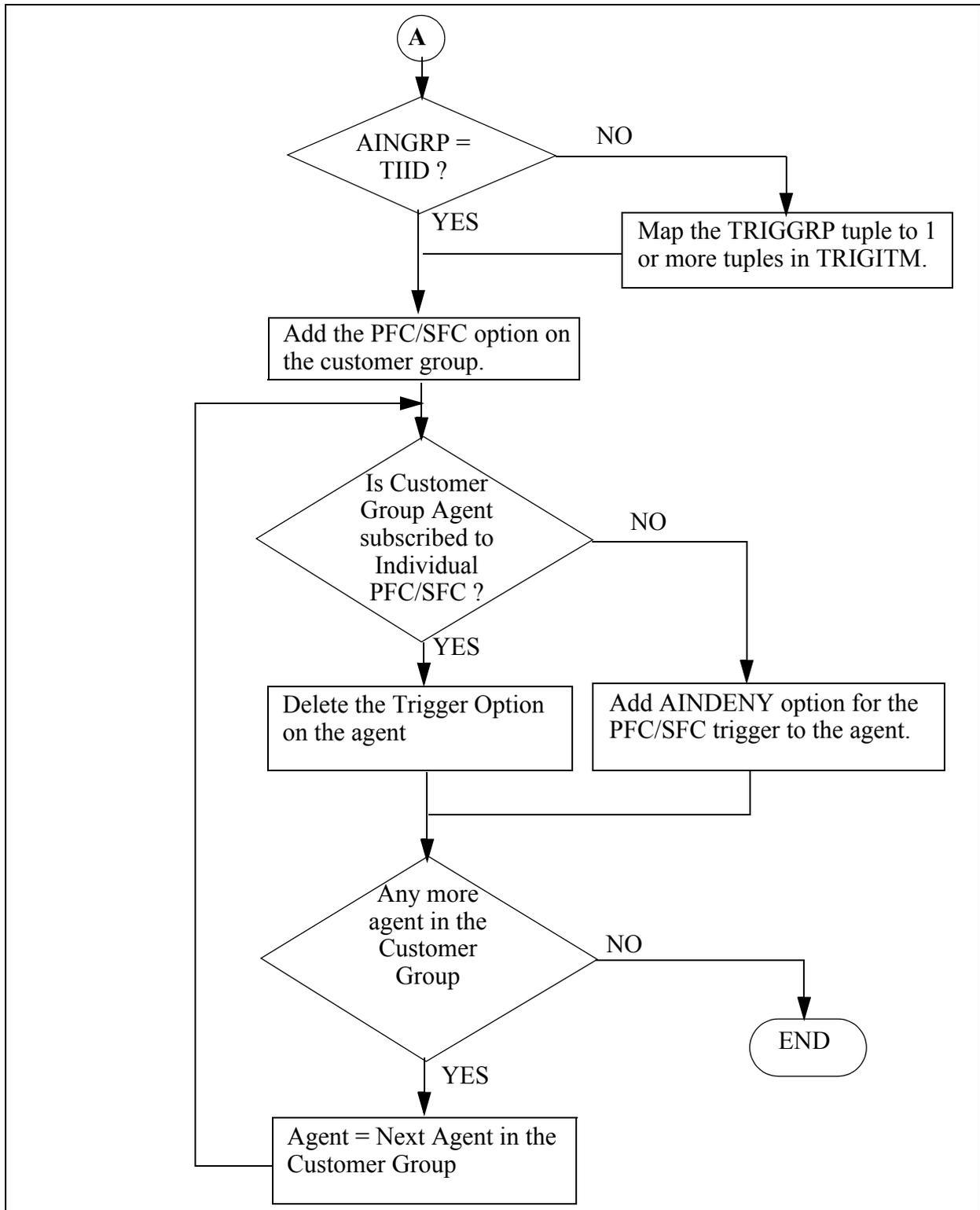


Figure 544 Functional behavior diagram of AINSCT tool (continued)



### 24.3 Using the Scope Change tool (AINSCT)

The steps for using the AINSCT tool follow:

- The CREATE command of AINTITT tool for the customer group must be executed when the RES customer group subscribes to an AIN trigger in the TRIGGRP data model. This is required because, no agent can have both TRIGGRP and TRIGITM AIN subscriptions assigned at any level of subscription (individual, customer group, office).
- The ANALYZE command of the AINSCT tool is executed to obtain the percentage of agents in the RES GROUP having the line based subscription to the given PFC trigger.
- The CONVERT command of the AINSCT tool is executed to convert the PFC/SFC trigger in TRIGITM/TRIGGRP data model from line subscription to customer group subscription in TRIGITM data model.

### 24.4 Supported commands

The following commands are supported in the AINSCT tool:

- ANALYZE
- CLEAR
- CONVERT
- HELP
- QUIT

#### 24.4.1 ANALYZE command

The ANALYZE command computes the percentage of agents with individual subscription to the PFC/SFC trigger in the customer group entered. An example of the ANALYZE command is shown in the following figure.

Figure 545 ANALYZE command example

**AINSCT:**

**>analyze**

**AINGRP:**

**>PFCGRP**

**RESGRP:**

**>all**

**1 lines of 7 line customer group RESG416 (14%) have PFCGRP line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 6**

**agents will be assigned AINDENY. AIN option will be removed from the remaining lines.**

**Before converting ensure local practices are followed.**

**2 lines of 8 line customer group RESG613 (25%) have PFCGRP line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 6**

**agents will be assigned AINDENY. AIN option will be removed from the remaining lines.**

**Before converting ensure local practices are followed.**

**10 lines of 100 line customer group POTSDATA (10%) have PFCGRP line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 90**

**agents will be assigned AINDENY. AIN option will be removed from the remaining lines.**

**Before converting ensure local practices are followed.**

#### **24.4.1.1 ANALYZE command for TRIGGRP based PFC/SFC trigger**

The ANALYZE command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP : This parameter accepts TRIGNAME from Table TRIGGRP which has an associated PFC/SFC trigger.
  - When an invalid value is entered, an error message is printed and the craftsperson is prompted re-enter the AINGRP.
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 546 .
- RESGRP : This parameter accepts either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the ANALYZE command must be repeated for all the RES groups in the switch.
  - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
  - When a valid IBN customergroup name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter RESGRP value as shown in Figure 547 .
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 546 ANALYZE command for invalid AINGRP

```

AINSCT:
>analyze
AINGRP:
>ds
DS
*** ERROR ***
|
TYPE OF AINGRP IS AINGRPID
PLEASE ENTER:
AINGRP:
>ds
DS
*** ERROR ***
|
TYPE OF AINGRP IS AINGRPID
TYPE IS AINGRPID
{OFFHKIMM,TERMATT,INTEROFF,LNOFFHKDEL,TRKOFFHKDEL,CDPCO
DE,
          OFCTRIG,AFRTRIG,LNTRIGGRP_AUTO,LNTRIGGRP1_AUTO,
DNTRIGGRP1_AUTO,TRKTRIGGRP1_AUTO,TRKTRIGGRP2_AUTO,
          OHI_TRAFFIC,TAT_TRAFFIC,INT_TRAFFIC,LNOHD_TRAFFIC,
TRKOHHD_TRAFFIC,PFC_TRAFFIC,AFRTRIG_TRAFFIC,PODPFC1,PODPC
DP,
PODPFC,TAT_SIM,OHI_SIM,LNOHD_SIM,TRKOHHD_SIM,PFC_AUTO,
          NCR_OHI,NCR_OHD,NCR_TAT,TAT_ISCP,OHI_ISCP,LNOHD_ISCP,
          TKOHD_ISCP,BRIPFC1,BRIPFC2,NIL,TIID}
PLEASE ENTER:
AINGRP:

```

**Figure 547 ANALYZE command for invalid RESGGRP**

```
AINSCT:
>analyze
AINGRP:
>pfcgrp
RESGRP:
>junk
INVALID CUSTOMER GROUP
RESGRP:
>mdc613
NOT A RES CUSTOMERGROUP
TYPE is RESGRP
{RESG200, RESG613,
RESG416,RESG202,RESG299,RESG298,MDC613,
RESG297, COMKODAK}
PLEASE ENTER:
RESGRP:
```

**24.4.1.2 ANALYZE command for TRIGITM based PFC/SFC trigger.**

An example of the ANALYZE command for TRIGITM based PFC/SFC trigger is shown in the following figure.

Figure 548 ANALYZE command for TRIGITM based PFC/SFC trigger example

**AINSCT:**

**>analyze**

**AINGRP:**

**>tiid**

**TINAME:**

**> all**

**RESGRP:**

**>RESG613**

**1 lines of 7 line customer group RESG613 (14%) have PFC1 line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 6**

**agents will be assigned AINDENY. The given trigger will be removed from the remaining lines**

**Before converting ensure local practices are followed**

**2 lines of 8 line customer group RESG613 (25%) have PFC2 line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 6**

**agents will be assigned AINDENY. AIN option will be removed from the remaining lines**

**Before converting ensure local practices are followed**

**10 lines of 100 line customer group RESG613 (10%) have PFC3 line assignments.**

**Upon usage of CONVERT command for this RES group and PFC trigger, 90**

**agents will be assigned AINDENY. AIN option will be removed from the remaining lines**

The ANALYZE command for a TRIGITM based data model accepts the following parameters as input:

- AINGRP: This parameter accepts the string 'TIID'
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 546 .
- TINAME: This parameter accepts either the value of TINAME in Table TRIGTM associated with the PFC/SFC trigger, or the string 'ALL'. RESGRP 'ALL' signifies that the ANALYZE command must be repeated for all of the PFC/SFC triggers datafilled in Table TRIGIT.
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the TINAME as shown in the following figure.
- RESGRP: This parameter accepts either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the ANALYZE command must be repeated for all RES groups in the switch.
  - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
  - When a valid IBN customergroup name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 550 .
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 549 ANALYZE command for invalid TINAME

```
AINSCT:
>analyze
AINGRP:
>tiid
TINAME:
>dsajds
INVALID TINAME
TINAME:
>junk
INVALID TINAME
TYPE is TINAME
{PFC_SIM, SFC_SIM, PFC, PFC1, SFC2, SFC1, SDS_SIM,
CDP_SIM}
PLEASE ENTER
TINAME:
>
```

**Figure 550 ANALYZE command for invalid RESGRP**

```
AINSCT:  
>analyze  
AINGRP:  
>tiid  
TINAME:  
>pfc1  
RESGRP:  
>junk  
INVALID CUSTOMER GROUP  
RESGRP:  
>mdc613  
NOT A RES CUSTOMERGROUP  
TYPE is RESGRP  
{RESG200,  
RESG613,RESG416,RESG202,RESG299,  
RESG298,RESG297,COMKODAK, MDC613}  
PLEASE ENTER:  
RESGRP:  
>RESG613
```

### 24.4.1.3 ANALYZE command warning

When all of the conditions below are satisfied, the ANALYZE command prints a warning message indicating the conversion will not be successful.

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the ANALYZE command warning message is shown in the following figure.

**Figure 551 ANALYZE command warning message**

```
AINSCT:
>analyze
AINGRP:
>tiid
TINAME:
>pfc1
RESGRP:
>RESG416

1 lines of 7 line customer group RESG416 (14%) have
PFC1 line assignments.
Upon usage of CONVERT command for this RES group and
PFC trigger, 6
agents will be assigned AINDENY. The given trigger will be
removed from the remaining lines
Before converting ensure local practices are followed

Warning: 4164671021 has subscribed to maximum number of
AINDENYs. AINDENY for pfc1 will not be added to 4164671021. After the
conversion, 4164671021 may encounter the pfc1 trigger.
```

#### 24.4.2 CLEAR command

The CLEAR command can be used to free all the queues allocated during the AINSCT operation. When the AINSCT tool is not exited cleanly, a message appears the next time the tool is entered, . It recommends running the CLEAR command to free the queues which were allocated during the previous operation.

**Figure 552 CLEAR command example**

```
>ainsct
AIN Scope Change Tool
The scope change tool did not terminate cleanly on last execution.
Run the CLEAR command before proceeding.
AINSCT:
>
>clear
The trigger group to trigger item mapping has been cleared.
>
```

#### 24.4.3 CONVERT command

The CONVERT command performs the conversion of the PFC/SFC trigger in TRIGITM/TRIGGRP data model from line subscription to customer group subscription in TRIGITM data model. An example of the CONVERT command is shown in the following figure.

Figure 553 CONVERT command example

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE command before using
CONVERT command.

AINGRP:
>PFCGRP

RESGRP:
>all

Converting Trigger PFC to
TRIGITM Tuple: 4 pfc1 pfc dg b123 $ ulk event r02 ss7 ainpop $
The default trigger item identifier is: PFC1.
Do you accept this trigger item identifier: PFC1 ? (Type N to modify)
Please confirm ("YES", "Y", "NO", or "N"):
n
Enter a new trigger item identifier.
*** ERROR ***

INDIVIDUAL PROMPT
|
TYPE OF TINAME IS EIGHT_CHAR_VECTOR
TINAME:
>PFC_SIM
Accept this trigger item identifier: PFC_SIM? (Type N to modify)
Please confirm ("YES", "Y", "NO", or "N"):
>y
Completed conversion of Trigger AFR to
TRIGITM Tuple: 4 PFC_SIM PFC DG b123 $ ULK EVENT R02 SS7 AINPOP $
Warning : AINDENY for pfc_sim was not added to 6136671001 of the
RESGRP RESG613.6136671001 may encounter pfc_sim trigger.
>
```

#### **24.4.3.1 Convert command for TRIGGRP based PFC/SFC trigger**

The CONVERT command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP: This parameter accept TRIGNAME from Table TRIGGRP which has PFC/SFC trigger associated with it
  - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the AINGRP.
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in the following figure.

Figure 554 CONVERT command with invalid AINGRP

```

AINSCT:

>convert

Warning: Ensure that you have used
ANALYZE command before using
CONVERT command.

AINGRP:

>ds

DS

*** ERROR ***

|

TYPE OF AINGRP IS AINGRPID

PLEASE ENTER:

AINGRP:

>ds

DS

*** ERROR ***

|

TYPE OF AINGRP IS AINGRPID

TYPE IS AINGRPID
{OFFHKIMM,TERMATT,INTEROFF,LNOFFHKDE
L,TRKOFFHKDEL,CDPCODE,

OFCTRIG,AFRTRIG,LNTRIGGRP_AUTO,LNTRIG
GRP1_AUTO,

DNTRIGGRP1_AUTO,TRKTRIGGRP1_AUTO,TR
KTRIGGRP2_AUTO,

OHI_TRAFFIC,TAT_TRAFFIC,INT_TRAFFIC,LN
OHD_TRAFFIC,

TRKOHD_TRAFFIC,PFC_TRAFFIC,AFRTRIG_T
RAFFIC,PODPFC1,PODP_CDP,

```

- RESGRP: This parameter accepts either a valid RES customer group or the string 'ALL'. REESGRP 'ALL' signifies the CONVERT command must be repeated for all RES groups in the switch.
  - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP value.
  - When a valid IBN customer group name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 555 .
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 555 CONVERT command with invalid RESGRP

```
AINSCT:  
>convert  
Warning: Ensure that you have used ANALYZE  
command before using CONVERT command.  
AINGRP:  
>PFCGRP  
RESGRP:  
>ds  
INVALID CUSTOMER GROUP  
RESGRP:  
>mdc613  
NOT A RES CUSTOMERGROUP  
TYPE is RESGRP  
{RESG200, RESG613,  
RESG416,RESG202,RESG299,RESG298,RESG297,  
MDC613, COMKODAK}  
PLEASE ENTER:
```

#### 24.4.3.1.1 Convert command for TRIGGRP based PFC/SFC trigger functions

The CONVERT command for TRIGGRP based PFC/SFC trigger performs the following functions:

- Adds tuples in Table TRIGITM corresponding to triggers associated with the entry of the Table TRIGGRP, given as AINGRP. A TINAME must be

entered for each tuple added in Table TRIGITM. The tuple in Table TRIGGRP is not removed.

- Adds the AINGRP of the given RES GROUP in Table CUSTSTN to TIID if required.
- Adds the PFC/SFC trigger to the RES GROUP in Table CUSTTIID. The default state is ON.
- Removes the AIN option from DNs associated with the concerned RES GROUP.
- Adds AINDENY for the PFC/SFC trigger to DNs not subscribed for the TRIGGRP based AIN option.
- Adds all the triggers (except PFC/SFC) associated with the given AINGRP in the TRIGITM data model to the DNs subscribed for the AIN option given as AINGRP. For example, the AINGRP entered has associated LNP, PODP, PFC and ONOA triggers. At completion of the CONVERT command, PFC trigger is added to the RES customer group in TRIGITM data model and ONOA trigger is added to the lines subscribed to AIN option in TRIGGRP data model. AINDENY for the PFC trigger is added to the DNs not subscribed for the given AIN option in TRIGGRP data model.

#### **24.4.3.1.2 Warning message in Convert command for TRIGGRP based PFC/SFC trigger**

When all of the conditions are satisfied, the CONVERT command prints a warning message indicating AINDENY was not added.

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the CONVERT command for TRIGGRP based PFC/SFC trigger warning message is shown in the following figure.

**Figure 556 Warning message in Convert command for TRIGGRP based PFC/SFC trigger**

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE
command before using CONVERT command.

AINGRP:
>PFCGRP

RESGRP:
  > RESG613

Warning : AINDENY for pfc_sim was not added to
6136671001 of the RESGRP RESG613.

>
```

#### **24.4.3.2 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model**

The CONVERT command for a TRIGGRP based data model accepts the following parameters as input:

- AINGRP: This parameter will accept a string 'TIID'.
  - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the AINGRP.
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the AINGRP as shown in Figure 554 .
- TINAME: This parameter accepts the TINAME from Table TRIGITM associated with the PFC/SFC trigger.
  - When an invalid value is entered, an error message is printed and the craftsperson is prompted to re-enter the TINAME.
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the TINAME as shown in the following figure.

Figure 557 CONVERT command with invalid TINNAME

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE command
before using CONVERT command.

AINGRP:
>tiid

TINAME:
>dsajds

INVALID TINAME

TINAME:
>junk

INVALID TINAME

TYPE is TINAME
{PFC_SIM, SFC_SIM, PFC, PFC1, SFC2, SFC1}

PLEASE ENTER

TINAME:
>pfc_sim

RESGRP:
>all

Warning : AINDENY for pfc_sim was not added to 6136671001
of the RESGRP RESG613.6136671001 may encounter pfc_sim
trigger.

>
```

- RESGRP: This parameter accepts either a valid RES customer group or the string 'ALL'. RESGRP 'ALL' signifies the CONVERT command must be repeated for all RES groups in the switch.
  - When an invalid value is entered, an error message 'INVALID CUSTOMER GROUP' is printed and the craftsperson is prompted to re-enter the RESGRP.
  - When a valid IBN customer group name is entered, the message 'NOT A RES CUSTOMERGROUP' is printed and the craftsperson is prompted to re-enter the RESGRP as shown in Figure 558 .
  - When an invalid value is entered more than once, a list of all valid values is printed and the craftsperson is prompted to re-enter the RESGRP.

Figure 558 CONVERT command with invalid RESGRP

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE
command before using CONVERT command.

AINGRP:
>tiid

TINAME:
>pfc_Sim

RESGRP:
>ds

INVALID CUSTOMER GROUP

RESGRP:
>mdc613

NOT A RES CUSTOMERGROUP

TYPE is RESGRP
{RESG200, RESG613,
RESG416,RESG202,RESG299,RESG298,RESG297,
MDC613, COMKODAK}

PLEASE ENTER:

RESGRP:
>RESG613
```

#### **24.4.3.2.1 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model functions**

The CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model performs the following functions:

- Adds the AINGRP of the specified RESGRP in Table CUSTSTN to TIID if required.
- Adds the PFC/SFC trigger to the RESGRP in Table CUSTTIID. The default state is ON.
- Removes the PFC/SFC trigger from DNs associated with the specified RESGRP.
- Adds the AINDENY option for the PFC/SFC trigger to DNs not subscribed to line based option. AINDENY is added to the DNs subscribed to line based PFC/SFC triggers in the OFF state.

#### **24.4.3.2.2 Warning message in CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model**

When the following conditions are satisfied, the CONVERT command prints a warning message indicating AINDENY was not added:

- The agent belongs to the specified customer group.
- The agent has no individual subscription to the PFC/SFC trigger entered.
- The agent has subscribed to the maximum number of AINDENYs.

An example of the CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model warning message is shown in the following figure.

**Figure 559 CONVERT command for conversion of line based PFC/SFC trigger in TRIGITM data model to customer group based PFC/SFC trigger in TRIGITM data model warning message**

```
AINSCT:
>convert

Warning: Ensure that you have used ANALYZE
command before using CONVERT command.

AINGRP:
>PFCGRP

RESGRP:
  > RESG613

Warning : AINDENY for pfc_sim was not added to
6136671001 of the RESGRP RESG613.

>
```

#### **24.4.3.3 Duplicate entries**

Duplicate entries can be created in table TRIGITM during execution of the CONVERT command in TRIGGRP data model . This occurs if the CONVERT command is executed for the same TRIGGRP/TRIGDIG entries in two different sessions of AINSCT tool. Duplicate entries can be avoided by executing the CONVERT command in the same AINSCT session.

#### **24.4.4 HELP command**

The HELP command provides help in using the AINSCT tool.

When the HELP command is executed specifying an AINSCT command, a description of the command is displayed.

When the HELP command is executed without specifying another AINSCT command, the list of commands supported by AINSCT tool is displayed on the screen. An example of the HELP command is shown in the following figure.

Figure 560 HELP command example

```
AINSCT:
>help

AIN Scope Change Tool.

Available commands:

ANALYZE - Computes the percentage of agents
subscribed to given PFC/SFC trigger.

CONVERT - Converts the given PFC/SFC trigger from
individual subscription level to customer group
subscription level

CLEAR - clear the queues created during processing

QUIT - exit increment
```

## 24.5 Supported messages and parameters

### 24.5.1 Warning message for AINTITT tool

The following warning message is provided for the CREATE sub-command for INDIVIDUAL triggers of AINTITT tool. This warning message is not required for NA017 loads as there will be no restriction in number of PFC/SFC trigger subscription on line due to RL re-engineering (A59037110). This warning is added only during patching the SCT tool to pre-NA017 loads.

**Figure 561 Warning message in AINTITT tool**

```
>create individual noprompt
Converting to trigger items may create duplicate
items with the same data in table TRIGITM.
Do you wish to have these duplicate trigger items
automatically deleted?
Please confirm ("YES", "Y", "NO", or "N"):
>n
If any PFC and SFC trigger is also being converted
abort this tool and use AINSCT tool to convert the PFC
and SFC triggers.
continue anyway?
Please confirm ("YES", "Y", "NO", or "N"):
>n
```

## 24.6 Limitations

The following are limitations of the Scope Change tool:

- The AINSCT tool does not have a provision to undo the changes incurred due to use of this tool. Any changes required must be done manually.
- When the AINGRP entered in the CONVERT command is associated with PFC/SFC and CDPCODE trigger, only the PFC/SFC trigger is added to the RESGRP. The CDPCODE trigger is not provisioned, because it is not compatible with RESGRP.



---

## 25 Other CI commands for AIN

---

CI (command interpreter) commands allow operating company personnel to perform various administration and maintenance tasks on the DMS-100 SSP. For the AIN SSP, this includes the following commands and tools:

- query commands such as QLEN, QLENWRK, QDN, QDNWRK, QLT, QIT, QCUST and QGRP (MDN option)
- MAKEAMA command
- AMADUMP and CALLDUMP commands
- AINTCPCI command set
- AINMKRES tool
- AINCI directory of commands
- CALLTRAK tool
- DISPCALL tool
- ACGRESTORE tool
- XPMIST tool
- QAIN tool

### 25.1 Query commands

The query commands display AIN SSP information for DNs, LENS and logical terminals that have subscribed to AIN. When the agent subscribes to AIN SSP, “AIN” or “AINDN” is listed as an option. The output also displays the AIN SSP group name (AINGRP) from table TRIGGRP that defines the triggers subscribed by the agent.

Each of these tools displays individual (line based) AIN trigger group subscriptions of the queried line. Each tool (except QCUST) displays the AIN trigger groups that are subscribed to the following:

- the office
- a customer group, when the line is a member of such a customer group:

This data is formatted and displayed on the MAP terminal display as part of the line query command output.

**Note 1:** The office wide and customer group wide AIN subscriptions are not displayed when the queried line is not supported for originating triggers.

**Note 2:** As there is no call context information available to the line query tools, they only indicate potential for AIN involvement in calls. The display of an AIN subscription in the line query tool output does not guarantee AIN involvement in calls on the line. To verify AIN involvement in a call, the user can make a more specific check using the TRAVER tools.

Figure 562 shows an example query of DN 7225027 that subscribes to AIN SSP. The group of triggers it subscribes to is specified by AINGRP1. In this case, AINGRP1 and its associated triggers would be datafilled in table TRIGGRP.

**Figure 562 QDN query command example**

```

>QDN 6216061
-----
DN:          6216061
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: DT   LNATTIDX: 200
LINE EQUIPMENT NUMBER:      HOST 00 1 05 18
LINE CLASS CODE:           1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
LINE TREATMENT GROUP:      0
CARDCODE: 6X17AC   GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC
-----
>

```

## 25.2 Display of office wide AIN trigger group subscription

This function displays the prompt “OFFICE OPTIONS:” and a list of the office options found in the tuple AIN\_OFFICE\_TRIGGRP of the DMS table OFCVAR. When a trigger group is present then the text “AIN” is displayed in

the list of Office Options followed by the trigger group name. A sample of the office options display capability is shown in Figure 563 on page 695.

**Figure 563 Office option display capability example**

```

PM TERMINAL NUMBER :    179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
OFFICE OPTIONS:
U3WC AIN OFFICETRIG
-----
>

```

### 25.3 Display of customer group AIN trigger group subscription

This function displays the title “CUSTOMER GROUP OPTIONS:” and a list of the AIN customer group options found. Only AIN customer group options are displayed (even when other customer group options exist).

The customer group option display capability checks whether the queried line is a member of a customer group. When the line is a member of a customer group then the table CUSTSTN is checked for the presence of the AIN option tuple for that customer group. When such a tuple is found, the text “AIN” is displayed in the Customer Group options list followed by the subscribed trigger group name. A sample of the customer group option display capability is shown in Figure 564 on page 696.

**Note 1:** For MDC lines the customer group options displayed under the QLEN and QLENWRK commands are those of the customer group of key 1. The customer group options displayed under the QDN and QDNWRK commands are those of the customer group of the key corresponding to the queried directory number. This is consistent with the customer group displayed by each command.

**Note 2:** For ISDN lines, the customer group options displayed under the QLT and QIT commands are those of the customer group of key 1. The customer group options displayed under the QDN and QDNWRK commands are those of the customer group of the key corresponding to the queried directory number. This is consistent with the customer group displayed by each command.

**Figure 564 Customer group option display capability example**

```

PM TERMINAL NUMBER :    179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC AIN OFFICETRIG
-----
>

```

## 25.4 Samples of queries

This section shows a number of figures illustrating the output of the QLEN, QLENWRK, QDN, QDNWRK, and QGRP commands.

Figure 565 shows output for a RES line. In this example, an AIN trigger group was subscribed for this line's customer group and is shown in bold.

**Figure 565 QLEN output example for a RES line**

```

>QLEN HOST 00 1 05 18
-----
LEN:      HOST 00 1 05 18
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6216061
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE: DIGITONE
LINE ATTRIBUTE INDEX:      200
CARDCODE: 6X17AC      GND: N  PADGRP: STDLN  BNV: NL  MNO: N
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      179
OPTIONS:
DGT
RES OPTIONS:
AIN LINETRIG1
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC
-----
>

```

Figure 566 on page 697 provides a sample output for a QLENWRK command. In this example, the trigger group OFFICETRIG is provisioned as the office wide trigger group.



**Figure 567 QDN output example for an MDC line**

```
>QDN 7225032
-----
DN:          7225032
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG: N/A   LNATTIDX: N/A
LINE EQUIPMENT NUMBER:      REM4  00 0 00 24
LINE CLASS CODE:  M5312 SET
KEY: 1
CUSTGRP:          COMKODAK  SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE:  6X21AC   GND: N  PADGRP: PPHON  BNV: NL MNO: Y
PM NODE NUMBER      :      81
PM TERMINAL NUMBER :      25
OPTIONS:
MCH EBO
AIN LINETRIG1 $
FTRGRP OPTIONS: PFGROUP1
AAB INSPECT MSB $ PRK RAG 3WC CFB P $ I $ CBI CFD P $ I $ CDI CFU N $ I $
PF USER GENERAL LANG ENGLISH SCS
OFFICE OPTIONS:
AIN OFFICETRIG
-----
>
```

Figure 568 on page 699 provides an output for a QDNWRK command. In this example, no AIN trigger group is subscribed for the lines' customer group (COMKODAK), therefore, no customer group options are displayed. The trigger group OFFICETRIG is subscribed as the office wide AIN trigger group.

**Figure 568 QDNWRK output example for MDC lines**

```

REPORT ON WORKING DIRECTORY NUMBERS
FROM      6137225031 TO      6137225032
LCC ALL           OPTION ALL
-----
DN:      7225031
TYPE: SINGLE PARTY LINE
SNPA: 613 SIG: N/A LNATTIDX: N/A
LINE EQUIPMENT NUMBER:      HOST 00 1 02 08
LINE CLASS CODE: M5112 SET
KEY: 1
CUSTGRP:      COMKODAK SUBGRP: 0 NCOS: 0 RING: Y
CARDCODE: 6X21AC GND: N PADGRP: PPHON BNV: NL MNO: Y
PM NODE NUMBER      :      74
PM TERMINAL NUMBER :      73
OPTIONS:
3WC MCH RAG PRK EBO
DND 1 CFU N $ I $ CFB N 25032 A $ CBI CFD N 25032 A $ CDI SCS AAB
OFFICE OPTIONS:
AIN OFFICETRIG
-----
DN:      7225032
TYPE: SINGLE PARTY LINE
SNPA: 613 SIG: N/A LNATTIDX: N/A
LINE EQUIPMENT NUMBER:      REM4 00 0 00 24
LINE CLASS CODE: M5312 SET
KEY: 1
CUSTGRP:      COMKODAK SUBGRP: 0 NCOS: 0 RING: Y
CARDCODE: 6X21AC GND: N PADGRP: PPHON BNV: NL MNO: Y
PM NODE NUMBER      :      81
PM TERMINAL NUMBER :      25
OPTIONS:
MCH EBO
DND 1
FTRGRP OPTIONS: PFGROUP1
AAB INSPECT MSB $ PRK RAG 3WC CFB P $ I $ CBI CFD P $ I $ CDI CFU N $ I $
PF USER GENERAL LANG ENGLISH SCS
OFFICE OPTIONS:
AIN OFFICETRIG
-----
TOTAL COUNT OF WORKING DN FROM      6137225031 TO      6137225032:      2
>

```

Figure 569 on page 700 provides an output of the QGRP command using the MDN option. Note the output. In this case, the trigger group CUSTTRIG is provisioned for the customer group COMKODAK and the trigger group OFFICETRIG is provisioned as the office wide trigger group.

**Figure 569 QGRP output example using the MDN option**

```
>qgrp mdn 7227050

MDN GROUP
-----

PRIMARY:      ISDN      104      KEY 3
              ISDN      102      KEY 4
              ISDN      101      KEY 3
              ISDN      111      KEY 4
              ISDN      120      KEY 4
              ISDN      130      KEY 4
              ISDN      150      KEY 4
              ISDN      160      KEY 4
              ISDN      170      KEY 4
              ISDN      180      KEY 4
              REM1    00 0 00 24 KEY 2
              REM1    00 0 09 31 KEY 2

The Primary member has the following options :
RAG PRK SFC EBO NAME PUBLIC TWEETY BIRD PRIVATE SYLVESTER
LVM SCS CFU N $ I $ FC 6 HLD XFER CTALL DROP SCL 0 L30
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
SDS AIN OFFICETRIG

The number of members in the SCA MDN GROUP is 12.

>
```

## 25.5 Line query tool support for the DMS trigger item interface

The following line query tools support the DMS-100 trigger item interface:

- QLEN and QLENWRK
- QDN and QDNWRK
- QLT
- QIT
- QGRP

The output of the line query tools includes line, customer group and office-wide AIN subscription data.

When the AIN\_OFFICE\_TRIGGRP office parameter is set to "TIID", the office option portion of the line query output appears as "AIN TIID", indicating that one or more subscriptions to office wide trigger items are in use.

See Figure 570 and Figure 571 on page 702 for sample outputs.

**Figure 570 Sample QLEN output**

```
>QLEN HOST 00 0 10 26
-----
LEN:      HOST 00 0 10 26
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6213112
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE: DIGITONE
LINE TREATMENT GROUP:      0
LINE ATTRIBUTE INDEX:      400
CARDCODE: 6X17AC      GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      169
PM TERMINAL NUMBER :      347
OPTIONS:
DGT
RES OPTIONS:
AIN INDIVTRIG
CND NOAMA
CUSTOMER GROUP OPTIONS:
AIN CUSTTRIG
OFFICE OPTIONS:
U3WC  AIN TIID
-----
```

**Figure 571 Sample QDN output**

```
>qdn 6215110
-----
DN:      6215110      (NON-UNIQUE)
TYPE: SINGLE PARTY LINE
SNPA: 613  SIG: DT  LNATTIDX: 167
LINE EQUIPMENT NUMBER:      HOST 00 0 00 23
LINE CLASS CODE:      PBX
CARDCODE: 6X17AC  GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      76
PM TERMINAL NUMBER :      24
OPTIONS:
HOT DGT
OFFICE OPTIONS:
AIN TIID
-----
```

### 25.5.1 Query commands

When the customer group subscription is set to trigger items, the line query output appears as “AIN TIID”, indicating that one or more subscriptions to trigger items are in use by the customer group. The actual subscriptions are shown in table CUSTIID.

When the agent subscribes to AIN trigger items, “AIN” or “AINDN” is listed as an option, followed by the keyword “TIID” and the list of trigger item assignments. Each trigger item assignment will be displayed as a TDP, TINAME, and assignment state (ON or OFF). Figure 572 illustrates customer group and individual subscription to AIN using the trigger item provisioning interface.

**Figure 572 QLEN Output example**

```

>qlen REM1 01 0 08 10
-----
LEN:      REM1 01 0 08 10
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:      6136214 77
LINE CLASS CODE:      1FR
IBN TYPE: STATION
CUSTGRP:      RESG200      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:  DIGITONE
LINE ATTRIBUTE INDEX:      200
CARDCODE: 6X17AA GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :      45
PM TERMINAL NUMBER :      267
OPTIONS:
DGT
RES OPTIONS:
AIN TIID 01 OFFIMM ON 17 AFR OFF
CUSTOMER GROUP OPTIONS:
AIN TIID
OFFICE OPTIONS:
U3WC AIN TIID
-----

```

## 25.6 MAKEAMA command

The MAKEAMA CI command is used by operating company personnel to generate AMA records for testing purposes. MAKEAMA is enhanced by AIN SSP to generate new AIN SSP AMA Structures 220 and 221 and support the Call Type code 047. The syntax for the MAKEAMA command is as follows:

```
>MAKEAMA <call code> [<quantity>] [<structure code>]
```

For example, to generate an AMA record for a Call Type 047 in Structure 220, the command is as follows:

```
>MAKEAMA 047 1 220
```

## 25.7 AMADUMP and CALLDUMP commands

The AMADUMP and CALLDUMP CI commands have been modified to support the structures 220 and 221 as well as the Call Type code 047.

## 25.8 AINTCPCI commands

AINTCPCI is a set of CI commands introduced for the ethernet AIN SSP. The commands in this set are used to add, delete and display mapping of the remote TCP/IP socket on the off-board processor to the AIN SSP application on the SSP.

Before the TCP/IP socket can be mapped, the AIN SSP subsystem on the adjunct must be defined in table C7LOCSSN.

To enter the AINPCI directory and define the remote TCP/IP socket, the set of commands are:

```
>AINTCPCI
>ADDAPPL <application_name> <application_instance>
        <IP_address> <TCP_port_number>
```

where:

- application\_name is the AIN SSP application on the SSP
- application\_instance identifies the off-board processor
- IP\_address is the IP address of the off-board processor
- TCP\_port\_number is the port number for the AIN SSP application at the off-board processor

For example, to define the TCP/IP socket for application instance 2 at IP address “41 208 0 159” and TCP port number “217” for AIN SSP the command is

```
>ADDAPPL AINR01 2 41 208 0 159 217
```

To change the TCP/IP socket for an application instance, the old value must first be deleted using the delete command and the new value assigned using the ADD command. The syntax for the delete command is as follows:

```
>DELAPPL <application_name> <application_instance>
```

Values assigned to an application instance can be displayed using the following query command:

```
>DISPAPPL <application_name> <application_instance>
```

## 25.9 AINMKRES tool

The AINMKRES tool creates a CI command environment, under which the user can convert the existing AIN POTS lines to the compatible RES lines.

To enter the AINMKRES directory, type the following:

```
>AINMKRES
```

To convert all the eligible AIN POTS lines to RES, type the following:

```
>ALL
```

To convert all the AIN POTS lines within a given range of line equipment numbers (LEN), type the following:

```
>RANGE START <LEN> STOP <LEN>
```

## 25.10 AINCI command interpreter directory

AINCI is the name of a directory of CI commands. This directory is intended to contain all AIN CI commands that have been created since NA005B.

Currently, the CI commands in this directory can be grouped in the following categories:

- *Trigger activation state administration for the trigger group provisioning interface*—Two CI commands are used to display and modify the activation states for a given AIN subscriber to Off-Hook Immediate, Off-Hook Delay, or Termination Attempt triggers.
- *Automatic code gapping commands*—Three CI commands are used to display the control lists and delete specified control items from the control lists.

To enter the AINCI directory, type the following:

```
>AINCI
```

The following sections describe the CI commands that can be used from within the AINCI directory.

### 25.10.1 Trigger activation-state administration for the trigger group provisioning interface

The following CI commands help you display and modify the activation states for triggers provisioned with the trigger group provisioning interface:

- SHOWSTATE
- CHANGESTATE

### 25.10.1.1 Displaying the trigger activation states

To display the trigger activation states for a given line, trunk, or DN subscribed AIN agent, use the SHOWSTATE CI command. The syntax of the SHOWSTATE command is shown in Table 936.

**Table 936 SHOWSTATE command**

>SHOWSTATE	<agent>	{DN <directory number>
		CLLI <trunk group name>
		ADNUM <administrative number> }
	<trigger>	{OFFHKIMM, OFFHKDEL, TERMATT}
	[<BearerCapability>]	{SPEECH, 3_1KHZ, 56KDATA, 64KDATA}

where:

- <agent> is either a DN, a CLLI, or an Administrative Number that designates an AIN subscribed agent. <directory number> should be a 7- or 10-digit DN that corresponds to a line or DN subscribed agent. <trunk group name> should be a CLLI identifier that corresponds to a trunk subscribed agent. <administrative number> should be an Administrative Number (in the range from 0 to 8191) that corresponds to a trunk subscribed agent.
- <trigger> is the trigger type for which the corresponding activation states will be displayed.
- <bearer\_capability> is the AIN bearer capability for which the corresponding activation states will be displayed. When this parameter is omitted, then the SHOWSTATE command will be executed for all applicable bearer capabilities.

The bearer capabilities that apply for a particular AIN-subscribed agent depend on the trigger group to which the agent is subscribed. When the agent is subscribed to an AIN trigger group that contains, say, an Off-Hook Immediate trigger subscribed on a particular call type criterion, then the applicable bearer capabilities are those that are compatible with the call type criterion. When no call type criterion is specified in the trigger group, then all bearer capabilities are applicable. Table 937 shows how the call type criteria

---

(from the subscribed AIN agent's trigger group) is mapped to the corresponding bearer capabilities.

**Table 937 Corresponding bearer capabilities for the call type criteria**

Call type	Bearer capability
VBINFO	SPEECH
	3_1KHZ
CMDATA	56KDATA
	64KDATA

The following examples demonstrate the use of command SHOWSTATE. An agent, specified by the DN, CLLI, or Administrative number, and a trigger with bearer capability are entered by the user. The output of command SHOWSTATE is shown in Figure 573 on page 708.

**Figure 573 Examples of outputs from the SHOWSTATE command**

```

>AINCI
AINCI:
>SHOWSTATE DN 6211091 OFFHKIMM SPEECH
AGENT:          DN 6136211091
TRIGGER:        OFFHKIMM
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF

>SHOWSTATE CLLI TRKGRP1 OFFHKDEL 56KDATA
AGENT:          CLLI TRKGRP1
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON

>SHOWSTATE ADNUM 203 OFFHKDEL
AGENT:          ADNUM 203
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF
BEARER CAPABILITY: 3_1KHZ
TRIGGER STATE:  OFF
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

>SHOWSTATE DN 6137221234 TERMATT 64KDATA
AGENT:          DN 6137221234
TRIGGER:        TERMATT
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

>SHOWSTATE DN 6211111 OFFHKDEL
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY SPEECH
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILTIY 3_1KHZ
AGENT:          DN 6136211111
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  OFF
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  ON

```

**25.10.1.2 Modifying the trigger activation state**

To modify the trigger activation states for a given line, trunk, or DN-subscribed AIN agent, use the CHANGESTATE CI command. The syntax for command CHANGESTATE is shown in Table 938.

**Table 938 CHANGESTATE command**

>CHANGESTATE	<agent>	{DN <directory number>   CLLI <trunk group name>   ADNUM <administrative number> }
--------------	---------	--

**Table 938 CHANGESTATE command (Continued)**

<trigger>	{OFFHKIMM, OFFHKDEL, TERMATT}
[<bearer_capability>]	{SPEECH, 3_1KHZ, 56KDATA, 64KDATA}
<state>]	{ON, OFF}

where:

- <agent> is either a DN, a CLI, or an Administrative Number that designates an AIN subscribed agent. <directory number> should be a 7- or 10-digit DN that corresponds to a line or DN subscribed agent. <trunk group name> should be a CLI identifier that corresponds to a trunk subscribed agent. <administrative number> should be an Administrative Number (in the range from 0 to 8191) that corresponds to a trunk subscribed agent.
- <trigger> is the trigger type for which the corresponding activation states will be modified.
- <bearer\_capability> is the AIN bearer capability for which the corresponding activation states will be modified. When this parameter is omitted, then the CHANGESTATE command will be executed for all applicable bearer capabilities.
- <state> is the value to which the trigger activation states will be set.

In the case where the <bearer\_capability> parameter is omitted, the applicable bearer capabilities are determined in the same manner as for the SHOWSTATE command.

Figure 574 on page 710 demonstrates the use of command CHANGESTATE.

Figure 574 Examples of the CHANGESTATE command

```
>AINCI
AINCI:
>CHANGESTATE DN 6211091 OFFHKIMM SPEECH ON
AGENT:          DN 6136211091
TRIGGER:        OFFHKIMM
BEARER CAPABILITY: SPEECH
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO ON?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE CLLI TRKGRP1 OFFHKDEL 56KDATA OFF
AGENT:          CLLI TRKGRP1
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO OFF?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE ADNUM 203 OFFHKDEL OFF
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY SPEECH
TRIGGER IS NOT SUBSCRIBED FOR BEARER CAPABILITY 3_1KHZ
AGENT:          ADNUM 203
TRIGGER:        OFFHKDEL
BEARER CAPABILITY: 56KDATA
TRIGGER STATE:  ON
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO OFF?
Please confirm ("YES", "Y", "NO", or "N"):
>Y
ACTIVATION STATE CHANGED

>CHANGESTATE DN 6137221234 TERMATT 64KDATA ON
AGENT:          DN 6137221234
TRIGGER:        TERMATT
BEARER CAPABILITY: 64KDATA
TRIGGER STATE:  OFF

ARE YOU SURE YOU WANT TO CHANGE THE TRIGGER STATE(S) TO ON?
Please confirm ("YES", "Y", "NO", or "N"):
>N
CHANGESTATE COMMAND ABORTED
```

### 25.10.2 Automatic Code Gapping commands

The following CI commands are used to display the ACG control lists and delete specified controls from the control lists:

- ACGDISPLAY—This CI command is used to display the control lists. There are two control lists: an SCP list and an SMS list.
- The syntax of the ACGDISPLAY command is as follows:  

```
>ACGDISELAY [<list_type>] [<gap_type>]
```
- where:
  - <list\_type> is either SCP\_LIST, SMS\_LIST, or ALL
  - This parameter is optional. When list\_type is omitted the default is to print all lists.
  - <gap\_type> is either ZERO\_GAP or NON\_ZERO\_GAP.

*Note:* This parameter is optional and can only be included when a list\_type of SMS\_LIST has been entered. When list\_type is SMS\_LIST and the gap\_type parameter is omitted, then both ZERO\_GAP and NON\_ZERO\_GAP controls are displayed.

- ACGDELETE—This CI command is used to delete a specified control from an ACG control list. Only one control is deleted by this command.
- The syntax of the ACGDELETE command is as follows:  

```
>ACGDELETE <list_type> <tt_name> <gta>
```
- where:
  - <list\_type> is either SCP\_LIST or SMS\_LIST
  - <tt\_name> is the GTT name as datafilled in table C7GTTYPE
  - <gta> is the Global Title Address (digits)
- For example, to delete the GTA/TT combination of 613621/AINJAZZ from the SCP control list, type:  

```
>ACGDELETE SCP_LIST AINJAZZ 613621
```
- ACGRESTORE—This CI command is used to restore entire control lists with one request; that is, delete all controls from either the SMS or SCP, or both control lists as specified.
- Deleting controls from a control list may impact the stability of the CCS7 network. The severity of this impact is dependent on the current network traffic load. The ACGRESTORE command should be used with caution.
- The syntax of the ACGRESTORE command is as follows:  

```
>ACGRESTORE <list_type> <gap_type>
```

- where:
  - <list\_type> is either SCP\_LIST, SMS\_LIST, or ALL
  - <gap\_type> is either ALL or EXCLUDE\_ZERO\_GAPS
- The parameter <list\_type> is mandatory. The parameter <gap\_type> is only required when <list\_type> is set to SMS\_LIST.

## 25.11 CALLTRAK tool

The CALLTRAK tool traces individual calls in the DMS-100 switch. The call can originate on a line or a trunk.

CALLTRAK contains these tools to collect and display data:

- PGMTRACE traces procedure and method calls for the call process CALLP
- MSGTRACE monitors incoming, outgoing, and internal messages for a traced call
- TIMECALL provides a list of call events with their real-time costs and the total cost of the call.

*Note:* PGMTRACE is based on the tool CALLCT. MSGTRACE is based on the tool PMIST.

### 25.11.1 When to use CALLTRAK

Use CALLTRAK to collect data for call processing applications. Use CALLTRAK to

- trace the program execution of the call processing transactions for a call
- monitor incoming and outgoing call processing messages and transactions for call agents
- determine the execution timing for call events and the length of an entire call

### 25.11.2 CALLTRAK commands

CALLTRAK is integral to several subsystems, each of which contains one or more modules. When subsystems or modules are missing, some CALLTRAK commands or tools do not function. The following table lists the CALLTRAK subsystems and modules.

### 25.11.3 Restrictions and limitations

This section describes the following restrictions and limitations on the use of CALLTRAK:

- real-time impact
- interaction with external calls

- interaction with other tools
- number of sessions

#### **25.11.3.1 Real-time impact**

Do not use CALLTRAK during peak hours because there is a substantial real-time impact on call processing in the following manner:

- PGMTRACE slows call process by 200 times.
- MSGTRACE slows call process by 100%.
- TIMECALL slows call process by 25 to 50%.

#### **25.11.3.2 Interaction with external calls**

Normally, an external call can interrupt external actions. When an external call interferes with a CALLTRAK trace, you cannot trace the correct type of call. For example, when the terminal is called from a different site just before the trace begins, the call terminates as planned, and the CALLTRAK call terminates in a busy signal. In this case, you are tracing a line-to-tone call instead of the planned line-to-line call.

For interaction with other tools, CALLTRAK uses the same software modules as CALLCT and PROTRACE. As a result, running either of these tools at the same time as CALLTRAK can result in invalid CALLTRAK data. For this reason, run CALLTRAK separately.

Only one measuring tool can use firmware timing at any given time. The tools ACTIVITY, ANALYSIS, HOGCT, and CALLCT use firmware timing. When you start CALLTRAK with either PGMTRACE or TIMECALL turned on, CALLTRAK checks for another tool that is using firmware timing. When another tool is using firmware timing, CALLTRAK does not start and displays a warning message.

#### **25.11.3.3 Number of sessions**

Fifteen CALLTRAK sessions can be run simultaneously.

## **25.12 DISPCALL tool**

DISPCALL is a diagnostic tool that monitors data entered from a dropped calls or calls held for analysis.

You can set DISPCALL to invoke automatically on the dropped call or you can use DISPCALL to capture information about a call in progress.

For a cross-threaded call, DISPCALL shows the originating and terminating ports of the call, and the software and hardware resources that the system uses on the call. For the originator or receiver of a call, DISPCALL displays call processing data areas: call condense blocks (CCB), call data blocks (CDB), message buffers, extension blocks, and protected and unprotected data.

You can display DISPCALL data in either formatted (English text) or hexadecimal form.

### **25.12.1 When to use DISPCALL**

Use DISPCALL to investigate trouble conditions that cause dropped calls. In the cross-threaded environment, use DISPCALL to analyze AUDIT log reports as well.

### **25.12.2 Commands**

The commands available at the DISPCALL level are as follows:

- clear
- death
- disptid
- free
- help
- query
- quit
- savelen
- savetid
- set
- show

#### **25.12.2.1 Clear command**

Use the clear command to clear all the data buffers. The clear command has no parameters or variables. There are no responses to the clear command.

#### **25.12.2.2 Death command**

Use the death command to enable or disable data collection for dropped calls.

#### **25.12.2.3 Disptid command**

Use the disptid command to convert the terminal identifier (TID) number of an agent to a call process identifier (CPID) designation (the LEN and DN).

#### **25.12.2.4 Free command**

Use the free command to de-allocate all buffers. The free command has no parameters or variables. There is no message response to the free command.

#### **25.12.2.5 Help command**

Use the help command to access on-line information on DISPCALL commands.

**25.12.2.6 Query command**

Use the query command to display the

- number of allocated buffers
- number of buffers currently in use
- current settings of the parameters of the death command

**25.12.2.7 Quit command**

Use the quit command to exit from DISPCALL.

**25.12.2.8 Savelen command**

Use the savelen command to save data on a call on an active line when you know the LEN. The savelen command saves the CCB, whether protected or unprotected. Use the DISPTID command to determine the LEN.

**25.12.2.9 Savetid command**

Use the savetid command to save the call data on an active line when you know the call's TID. The savetid command saves the CCB, whether it is protected or unprotected.

**25.12.2.10 Set command**

Use the set command to allocate call data buffers.

**25.12.2.11 Show command**

Use the show command to display the call data buffers.

**25.12.3 How to access DISPCALL**

Access the DISPCALL level from the CI level of the MAP display by entering:

**>DISPCALL**

and pressing the Enter key.

Table 939 provides explanations for the responses to command DISPCALL.

**Table 939 Responses for the DISPCALL command**

MAP response	Meaning and action
CAN'T ALLOCATE COMMAND DIRECTORY	<p>Meaning: The system does not have enough resources to allocate a DISPCALL command directory.</p> <p>Action: Wait until the system is less busy and enter the command again. When the problem continues, contact your next level of support.</p>

**Table 939 Responses for the DISPCALL command (Continued)**

MAP response	Meaning and action
CAN'T EXTEND THE SYMBOL TABLE	<p>Meaning: system does not have enough resources to allocate a DISPCALL symbol table.</p> <p>Action: Wait until the system is less busy and try again. When the problem persists, contact your next level of support.</p>

### 25.12.4 Notes for the use of DISPCALL

There are different methods of using DISPCALL to collect and display call processing information. This section provides recommendations for operating DISPCALL and procedures that illustrate the methods of using the utility.

#### 25.12.4.1 Operating DISPCALL

Follow these recommendations to obtain accurate and complete DISPCALL displays.

- Before using DISPCALL to analyze a dropped call, perform a TRAVER on the called number to verify that the translations information is complete.
- Use the set command to allocate 10 buffers for each buffer type. For example, to define 10 CCB buffers, enter  
**set ccb 10**  
Repeat this command for the CDB, EXT, PROT, UNPROT, and MBUFF buffers.
- To run DISPCALL continuously, set the death command on. While death is on, every dropped call causes DISPCALL to capture and display data, allowing you to analyze the data rapidly.
- To determine the number of buffers in use, use the query command periodically.
- Before you can use the savelen or savetid command, the call you want to analyze must be in progress.
- To obtain a hard copy of the DISPCALL data, use the show command to show all buffers in use. Using the show call command with the formatted option displays notification of a dropped call, including information such as calling and called numbers, route data, equal access data, and whether or not a feature is in use. Keep the hard copies for trouble analysis.
- To make room for more call data, clear the buffers periodically.

- When a network is running in simplex mode, loss of integrity can cause a call to drop. Analyzing a dropped call at the integrity analysis (NETINTEG) sublevel of the MAP display can help in troubleshooting.
- When more than one MAP sessions are running DISPCALL simultaneously, the buffer space is shared.
- When you quit DISPCALL, buffers do not automatically clear. Therefore, you can retrieve call information when you exit a session accidentally.

### 25.12.4.2 Collection of data when a call fails

To collect and display data when a call fails, perform the steps in the following procedure.

#### Procedure 1 Displaying and collecting data when a call fails

##### Step Action and response

- 1 Access DISPCALL.  
The system returns the DISPCALL prompt.
- 2 Use the query command to make sure sufficient buffers are available to hold the call information.

The resulting display shows:

BUFFER	ALLOCATED	IN USE
CCB	10	0
CDB	10	0
EXT	10	0
PROT	10	0
UNPROT	10	0
MBUFF	10	0

When 0 appears in the ALLOCATED column, use the set command to set the number of buffers to 10.

- 3 To enable data collection, turn the death command on. DISPCALL responds by saving all the data buffers for any call that drops.
- 4 While the death command is on, do the following steps:
  - a Periodically determine how many buffers are in use with the query command.
  - b Display all the information associated with the call by using the show call command with f for the formatting option.
  - c Obtain a hard copy of the data for each buffer in use by using the show type command with f for the formatting option. Keep the hard copies for trouble analysis.
  - d To make room for more data, periodically clear the buffers with the clear command.

- 5 To disable data collection, turn the death command off.
- 6 To exit from DISPCALL, use the quit command.

### 25.12.4.3 Collecting data for an active call

To collect and display the data associated with an active call, perform the steps in the following procedure.

#### Procedure 2 Displaying and collecting data for an active call

##### Step Action and response

- 1 Access DISPCALL.  
The system returns the DISPCALL prompt.
- 2 Use the query command to make sure sufficient buffers are available to hold the call information. The resulting display shows:

BUFFER	ALLOCATED	IN USE
CCB	10	0
CDB	10	0
EXT	10	0
PROT	10	0
UNPROT	10	0
MBUFF	10	0

When 0 appears in the ALLOCATED column, set the number of buffers to 10 with the set command.

- 3 To save the data associated with the call, use the savetid command when the call's TID is known, or the savelen command when the call's LEN is known.

**Note:** DISPCALL does not save the CDB when you use the savetid or savelen command.

- 4 Display all the information associated with the call by using the show call command with f for the formatting option.
- 5 Display the information for each buffer in use with the show type command with f for the formatting option.
- 6 To exit from DISPCALL, use the quit command.

### 25.12.5 Restrictions and limitations

The DISPCALL tool does not function when CPU occupancy is too high.

## 25.13 ACGRESTORE

Use this command to do the following:

- restore entire control lists with a single request
- delete all controls from either the SMS or SCP, or both control lists as specified



### CAUTION

#### Possible loss of service

Deleting controls from a control list can impact the stability of the CCS7 network. The severity of this impact depends on the current network traffic load. Use the ACGRESTORE command with extreme caution.

### 25.13.1 ACGRESTORE syntax

ACGRESTORE has the following syntax:

```
>ACGRESTORE <list_type> <gap_type>
```

where <list\_type> is the control list from which you want to remove controls (mandatory) <gap\_type> is only valid when you specify an SMS\_LIST. When you specify an SMS\_LIST, you must select a gap\_type.

When the command starts, you have the following choices:

- enter Y to continue with the command; the system dumps all associated controls lists to the MAP display
- enter N to cancel the preview; the system continues processing to delete the controls from the control lists
- enter abort to cancel the command; no further processing of the ACGRESTORE request occurs

### 25.13.2 ACGRESTORE responses

The system displays the following:

- a message regarding the status of ACG
- a warning on the potential impact of using this command

These responses are shown in Figure 575 to Figure 578 on page 721.

**Figure 575 ACGRESTORE response example 1**

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SCP control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

**Figure 576 ACGRESTORE response example 2**

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

**Figure 577 ACGRESTORE response example 3**

```
ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS control list, except for those with a
zero-gap interval will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':
```

**Figure 578 ACGRESTORE response example 4**

```

ACG is Currently Enabled.
WARNING: When Automatic Code Gapping (ACG) is enabled, then
deleting controls from the ACG control lists may impact the stability of
the CCS7 network. The severity of this impact depends on the current
network traffic load. This command should be used with extreme caution!
All AIN ACG controls in the SMS and SCP control list will be deleted.

Do you want to preview the controls to be deleted before continuing with
the restore?

Please confirm: Enter 'Y', 'N' or 'abort':

```

Enter Y to continue with the restore request and to preview the controls prior to the delete operation. When you enter Y, the controls display on the terminal. You then have one last opportunity to cancel the request to restore the control lists. This display is shown in Figure 579.

**Figure 579 ACGRESTORE MAP display dumps**

```
The following controls will be deleted:
```

A I N		S C P		C O N T R O L		C O D E S	
TRANSLATION TYPE	GLOBAL TITLE ADDRESS	GAP_DUR (Secs)	GAP_INT (mSecs)	GAP_DUR REMAINING	GAP_INT REMAINING		
AINTRANS1	613621	16	3000	5	341		
AINTRANS1	613722	64	8000	52	1854		

```
DO YOU WANT TO CONTINUE WITH THE GLOBAL RESTORE?
Please confirm ('Yes', 'Y', 'No' or 'N'):
```

When you respond with Yes, the system removes all controls from the control lists specified in the command line and generates the AIN612 log. This display is shown in Figure 580.

**Figure 580 ACGRESTORE display during processing**

```

The ACGRESTORE request is being processed.

Please use the ACGDISPLAY command to verify that
the controls have been removed. An AIN612 log
will be generated when the controls have been
successfully deleted.

```

## 25.14 UPDCI increment

UPDCI is used to test and verify AIN Update ‘Change status of MWI’ messages on the SCP. This is a command interpreter (CI) increment to an existing CI tool message waiting queue (MWQ). MWQ is a existing generic tool on the switch that allows operating company to queue or remove from the queue, messages for message waiting feature subscribers.

AIN Update ‘Change status of MWI’ messages introduced in NA010 permit the SCP to activate and deactivate the message waiting indicator on a subscriber. UPDCI is introduced in NA12 as an increment of MWQ to simulate Update messages that request ‘Change status of MWI’.

### 25.14.1 When to use UPDCI

UPDCI can be used to queue (or remove from the queue) messages on an Agent, thereby simulating an AIN Update message request to activate or deactivate MWI indication on an Agent.

### 25.14.2 Commands

The following commands are possible from UPDCI level:

- QUEUE
- DEQ (remove from the queue)
- STATUS

#### 25.14.2.1 QUEUE

The QUEUE command is used to simulate an Update message request for activation of MWI Indication. Invoking the QUEUE command queues a new message for the Agent and activates the specified Indication.

The QUEUE command has the following syntax:

```
>QUEUE <agent> <msrid> <indication-type>
```

where the <agent> is a 7-digit DN (LCC supported by Update ‘Change Status of MWI’ functionality), the DN in the request. The <msrid> is the message service provider ID (valid MSRIDs are datafilled in table MSRTAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

```
>QUEUE 6211001 1010101010 S
```

#### 25.14.2.2 DEQ

The DEQ command is used to simulate an Update message request for de-activation of MWI Indication. Invoking this command removes from the

queue an existing message queued against the agent and deactivates the specified Indication.

The DEQ command has the following syntax:

**>DEQ <agent> <msrid> <indication-type>**

where the <agent> is a 7-digit DN (LCC supported by Update 'Change Status of MWI' functionality), the DN in the request. The <msrid> is the message service provider ID (valid MSRIDs are datafilled in table MSRTAB). The <indication-type> a stuttered dial tone and lamp are currently supported (stuttered [S] or lamp [L]).

For example:

**>DEQ 6211001 1010101010 S**

#### **25.14.2.3 STATUS**

The STATUS command is used to find out whether any messages have been queued against an agent. Invoking this command lists the details of the messages queued against an Agent. Details include the MSRID and TYPE of MWI Indication that the activation requested.

The STATUS command has the following syntax:

**>STATUS <agent>**

For example:

**>STATUS 6211001**

#### **25.14.2.4 How to access UPDCI**

The UPDCI level can be accessed from the CI level by entering two commands. The following is an example that illustrates how to access the UPDCI level.

At the CI Level type MWQ, then type UPDCI.

For example:

```
>MWQ  
MWQ>  
MWQ> UPDCI  
UPDCI>
```

#### **25.14.2.5 Notes on UPDCI**

The UPDCI level commands reuse the Update MWI functionality in the DMS-100 switch and the processing of these commands are consistent with processing of AIN Update 'Change status of MWI' messages from the SCP.

#### **25.14.2.6 Restrictions and Limitations**

No limitations are identified with UPDCI.

### **25.15 XPMIST**

XPMIST allows operating company personnel to capture the messages that occur between the XPMs and the CM during call processing. For ISUP messages, this tool breaks down hex data into text.

### **25.16 QAIN**

The functionality of the Query AIN (QAIN) command is to

- display the AIN/AINDN options associated with a DN/LEN/customer group/trunk group/office, for TRIGGRP as well as TRIGITM data models.
- display the AINDENY options subscribed by DN/LEN and customer group.
- display the number of lines in a customer group which are subscribed to AIN/AINDN and AINDENY separately.

This activity is dependent on SOC AIN00006 - Call Management.

Also the command QAIN supports multi user compatibility. Multiple instances of the tool can be run in a switch.

The QAIN command is used in the following manner at the CI prompt:

- QAIN LEN <line equipment number/logical terminal identifier>
- QAIN DN <directory number>
- QAIN CUSGRP <customer group>
- QAIN TRK <trunk group>
- QAIN OFC

If any of the parameter after QAIN is an invalid parameter, the command format is displayed as help and the craftsperson has to give the command again.

If any parameter is not entered , it shall prompt for the parameter.

If the craftsperson types HELP QAIN and enter, The QAIN format is displayed.

Figure 581 Example for QAIN

**CI:**  
**>HELP QAIN**

```
COMMAND QAIN :    QUERY AIN SUBSCRIPTION DATA
COMMAND FORMAT :  QAIN LEN <LINE EQUIPMENT NUMBER /
                   LOGICAL TERMINAL IDENTIFIER>
                   OR
                   QAIN DN <DIRECTORY NUMBER>
                   OR
                   QAIN CUSGRP <CUSTOMER GROUP>
                   OR
                   QAIN TRK <TRUNK GROUP>
                   OR
                   QAIN OFC
```

#### **25.16.1 QAIN DN <directory number>**

This option displays the AIN/AINDN options subscribed by a DN. The AINDENY options, if any, are also displayed.

The craftsman can enter 7-digit as well as 10-digit DN.

Figure 582 Example for QAIN DN &lt;directory number&gt;

CI:

>QAIN DN 6136671024

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	4	SFC_SIM	SFC (DG 1234567)\$	OFF	R02	SS7 AINPOP DFLT	\$
AINDN	20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$

>QAIN DN 6136671022

TRIGGRP DATA MODEL

FEATURE	TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
AIN	TAT_TRFC	TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT \$

>QAIN DN

DN :

>6136671023

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$
RESTORE	4	PFC2	PFC (DG B123)\$	R02	SS7 AINPOP DFLT	\$

Figure 583 QAIN DN &lt;directory number&gt; (continued)

```

CI:
>QAIN
>Enter any one : DN/LEN/CUSGRP/TRK/OFC
>DN
DN :
> 6136671024

TRIGITM DATA MODEL
-----
FEATURE TDP TINAME TRIGDATA TRIGACT MSGSET TRANSPORT OPTIONS
-----
AIN 4 SFC_SIM SFC (DG 1234567)$ OFF R02 SS7 AINPOP DFLT $
AINDN 20 TAT_SIM TERMATT $ ON R02 SS7 AINPOP DFLT $

AINDENY DATA
-----
FEATURE TDP TINAME TRIGDATA MSGSET TRANSPORT OPTIONS
-----
DENY 4 SFC1 SFC (DG B98)$ R02 SS7 AINPOP DFLT $

>QAIN DN HOST 01 0 00 02

>Error : Invalid DN

>QAIN DN 6631001
>No AIN options subscribed

```

### 25.16.2 QAIN LEN <line equipment number>

This option displays the AIN/AINDN options subscribed by a valid LEN. The display contains AINDENY options also, if any.

Both TRIGGRP and TRIGITM data models are supported.

Figure 584 Example for QAIN LEN &lt;line equipment number&gt;

CI:

>QAIN LEN HOST 01 0 00 02

TRIGITM DATA MODEL

FEATURE	TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
AIN	17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
AINDN	20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

>QAIN LEN HOST 01 0 02 14

TRIGGRP DATA MODEL

FEATURE	TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
AIN	TAT_TRFC	TERMATT	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT

>QAIN LEN

LEN :

>HOST 01 0 01 02

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	SFC1	SFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$
RESTORE	4	PFC2	PFC (DG B123)\$	R02	SS7 AINPOP DFLT	\$

>QAIN LEN 6631001

>Error : Invalid LEN

>

**25.16.3 QAIN CUSGRP <customer group>**

This option displays the AIN options subscribed by a customer group as well as AINDENY options, if any.

The option also displays the number of lines of the customer group which are subscribed to AIN, AINDN, and AINDENY options.

**Figure 585 Example for QAIN CUSGRP**

```

CI:
>QAIN CUSGRP COMKODAK

No. of lines with AIN options      = 12
No. of lines with AINDN options    = 03
No. of lines with AINDENY options  = 09

TRIGITM DATA MODEL
-----
TDP TINAME  TRIGDATA      TRIGACT MSGSET  TRANSPORT  OPTIONS
-----
17 AFR_SIM   AFR (CT VBINFO)$ OFF   R02   SS7 AINPOP DFLT  $
20 TAT_SIM   TERMATT $      ON    R02   SS7 AINPOP DFLT  $

AINDENY DATA
-----
FEATURE TDP TINAME  TRIGDATA      MSGSET  TRANSPORT  OPTIONS
-----
DENY    4  OFCPFC1  OFCPFC (DG B98)$  R02   SS7 AINPOP DFLT  $

>QAIN CUSGRP RESG416

No. of lines with AIN options      = 12
No. of lines with AINDN options    = 03
No. of lines with AINDENY options  = 09

TRIGGRP DATA MODEL
-----
TRIGGER      TRIGDATA      MSGSET  TRANSPORT  OPTIONS
-----
TAT_TRFC TERMATT  TERMATT $JAZZINFO  R01   SS7 AINJAZZ DFLT  $

```

Figure 586 QAIN CUSGRP &lt;customer group&gt; (continued)

CI:

>QAIN CUSGRP

>Customer group:

>COMKODAK

No. of lines with AIN options = 12  
 No. of lines with AINDN options = 03  
 No. of lines with AINDENY options = 09

TRIGITM DATA MODEL

TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
20	TAT_SIM	TERMATT \$	ON	R02	SS7 AINPOP DFLT	\$

AINDENY DATA

FEATURE	TDP	TINAME	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
DENY	4	OFCPFC1	OFCPFC (DG B98)\$	R02	SS7 AINPOP DFLT	\$

>QAIN CUSGRP abcdef

>## Error ##

Type of customer group is customer\_group

CUSTOMER GROUP:

>RESG200

No. of lines with AIN options = 12  
 No. of lines with AINDN options = 03  
 No. of lines with AINDENY options = 09

TRIGGRP DATA MODEL

TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC	TERMATT TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

### 25.16.4 QAIN TRK <trunk group>

This option displays the AIN/AINDN options associated with a trunk group. The TRIGGRP and TRIGITM data models are displayed separately.

Figure 587 Example for QAIN TRK <trunk group>

```

CI:
>QAIN TRK ISUPITIC

TRIGITM DATA MODEL
-----
FEATURE TDP TINAME   TRIGDATA           TRIGACT MSGSET  TRANSPORT  OPTIONS
-----
AIN      17  AFR_SIM   AFR (CT VBINFO)$  OFF        R02        SS7 AINPOP DFLT  $
AIN      4   SFC_SIM   S FC (DG B98)$    ON         R02        SS7 AINPOP DFLT  $

>QAIN TRK ISUPITEAIC

TRIGGRP DATA MODEL
-----
TRIGGER   TRIGDATA           MSGSET  TRANSPORT  OPTIONS
-----
TAT_TRFC TERMATT  TERMATT $JAZZINFO  R01     SS7 AINJAZZ DFLT  $

>QAIN TRK abcd
> ## Error ##
Type of trunk group is Common_language_name
TRUNK GROUP:

>ISUPITIC

TRIGITM DATA MODEL
-----
FEATURE TDP TINAME   TRIGDATA           TRIGACT MSGSET  TRANSPORT  OPTIONS
-----
AIN      17  AFR_SIM   AFR (CT VBINFO)$  OFF        R02        SS7 AINPOP DFLT  $
AIN      4   SFC_SIM   S FC (DG B98)$    ON         R02        SS7 AINPOP DFLT  $

```

### 25.16.5 QAIN OFC

This option displays the AIN options that the office is subscribed to. Since either TRIGGRP or TRIGITM data model exists for an office, either of the data model is displayed.

Figure 588 Example for QAIN OFC

CI:  
>QAIN OFC

## TRIGITM DATA MODEL

TDP	TINAME	TRIGDATA	TRIGACT	MSGSET	TRANSPORT	OPTIONS
17	AFR_SIM	AFR (CT VBINFO)\$	OFF	R02	SS7 AINPOP DFLT	\$
4	SDS_1	SDS(DG 123456)	ON	R02	SS7 AINPOP DFLT	\$
4	SDS_2	SDS(DG 5454545)	OFF	R02	SS7 AINPOP DFLT	\$

>QAIN OFC

## TRIGGRP DATA MODEL

TRIGGER	TRIGDATA	MSGSET	TRANSPORT	OPTIONS
TAT_TRFC	TERMATT \$JAZZINFO	R01	SS7 AINJAZZ DFLT	\$

---

## 26 Trouble locating for AIN

---

**CAUTION****Possible loss of service**

The information and procedures in this chapter are for experienced maintenance personnel only. You must know how to use tools for troubleshooting translations problems. You must also know how to use and interpret the reporting subsystems for logs and OMs.

This chapter contains the troubleshooting procedures for AIN Service Enablers. This chapter limits these procedures to those that have a high probability of interrupting service.

The following tools are useful in investigating and troubleshooting AIN service problems:

- ACGRESTORE
- AINTRACE
- CALLTRAK
- DISPCALL
- TRAVER
- TSTQuery
- XPMIST

### 26.1 Advanced trouble locating procedures task list

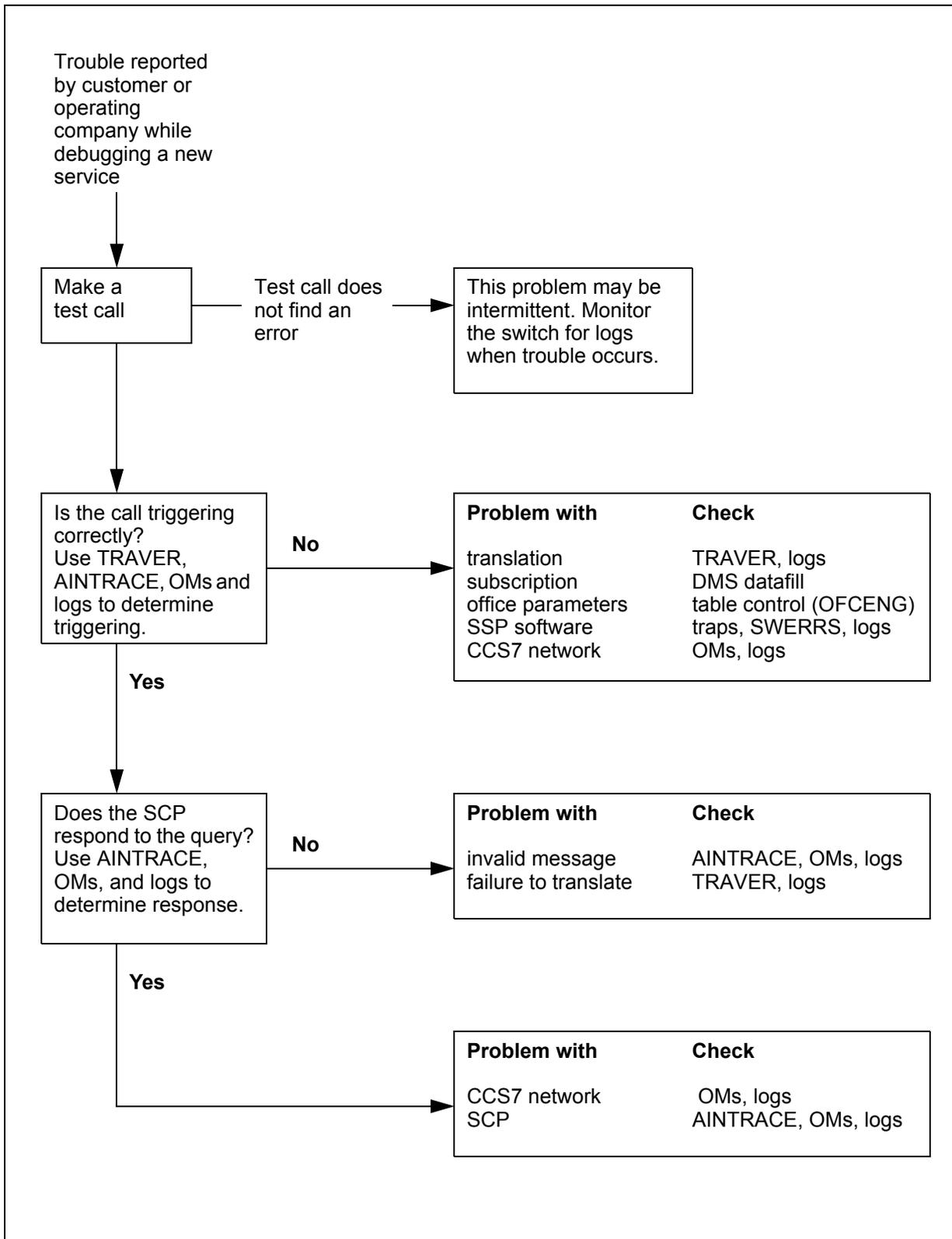
The tasks exclusively assigned to more experienced operating company personnel for AIN include the following:

- Verify datafill using translation verification (TRAVER).
- Determine when datafill error prevents AIN call completion; interpret log messages.

- Use command interpreter (CI) utility AINTRACE to monitor AIN messages and to see when the service control point (SCP) and the service switching point (SSP) are sending messages; check TCAP100 logs.
- Use the C7TU test utility to monitor messages going over links to database and back, checking to monitor and interpret messages from the SSP and SCP.
- Error detection

Figure 589 on page 735 summarizes the overall approach to AIN trouble locating and clearing.

Figure 589 Quick reference for AIN trouble locating and clearing



## 26.2 Verify datafill using TRAVER

The TRAVER command simulates a call and displays the translation and routing tables accessed by the call. When calls should go to treatment (route, tone, or announcement), or do not follow their intended route, TRAVER enables you to determine how the call routes by displaying the following information:

- the tables for translating and routing a call
- each element of the route list with digits out-pulsed
- each alternate conditional route

Samples of TRAVER for AIN calls are contained in the *North American DMS-100 Translations Guide* and in this document.

## 26.3 AINTRACE utility

The AINTRACE utility is a tool that lets a user display AIN Service Enablers CCS7 TCAP messages to or from an SCP that is associated with a particular call. AIN messages are captured for a particular line or by trunk. The TCAP messages are captured in hex along with other related information, stored in a buffer and then displayed in hex, text, or both these formats.

## 26.4 C7TU test utility

Use the C7TU test utility to monitor messages going over links to the database and back. C7TU provides testing of CCS7 features. Use C7TU for troubleshooting, monitoring, and interpretation of messages from the SSP and SCP. Refer to the *Commands Reference Manual* and to *C7TU User Guide Technical Assistance Manual* for additional information.



### **CAUTION**

#### **Possible loss of service**

Use the C7TU tool with caution. The C7TU tool has a real-time impact on any node.

Use logs to identify problems and to provide information for troubleshooting.

## 26.5 Error detection

The SSP checks and validates each message that the SCP database sends. Checking detect protocol and application errors.

Incorrect transaction capabilities application part (TCAP) messages cause protocol errors. Either TCAP or the application process detects protocol errors. For example, unrecognized package type or component type, unrecognized

operation, and unrecognized responding transaction ID or correlation ID are protocol errors.

Violations of application process procedures or unavailability of network resources cause application errors. For example, unexpected message sequence, erroneous data value, unavailable network resource, or T1 timer time-out are application errors.

DMS-100 implementation has some rules and basic assumptions regarding the type of error message returned to the database.

### **26.5.1 Protocol error handling**

The system sends the ABORT package with the appropriate abort cause value when the base TCAP or the AIN application detects the following protocol errors:

- transaction portion
- unrecognized transaction ID
- AIN does not use the transaction ID or the transaction ID is not in the correct state to receive the SCP message (the switch reports the value only when it is in a conversation package)
- unrecognized package type
- received package type is not in the allowed range, for example, it is not query, response, abort, conversation with or without permission, or unidirectional (the switch sends the value only when it finds a transaction ID)

The system sends the REJECT message with the appropriate problem code when the AIN application detects the following protocol errors:

- General
  - Unrecognized component type. The SSP receives an undefined or unexpected component type.
  - Incorrect component. This problem code is used to report missing mandatory parameters and is sent for the following errors
    - a message has too many components (more than four) or too many parameters (more than 37)
    - a message has a duplicate component
    - a package contains both routing and play announcement components
    - the response package has invoke components, but there is neither a routing component or play announcement component in the package
    - the conversation message has more than one component (play announcement and collect digits)
    - the Return Error or Reject component is not the only component in the message
- Invoke
  - Unrecognized operation code. For any Invoke component, the system checks the operation code against the expected operation codes at that state. When the operation code is not the expected code, the system sends a problem code in the reject message.
  - Incorrect parameter. This problem code is sent for the following errors
    - duplicate parameter or unexpected or unrecognized parameter
    - the originator sends parameters in a message a set rather than a sequence
  - Missing mandatory parameter: A received message has one or more mandatory parameters missing

The system sends the above Reject message in a response package when the error is in a conversation or query package and the transaction is still open.

When the system detects any of the above protocol errors, the switch routes the call to treatment.

### **26.5.2 Application error handling**

The system detects application errors at the decoder and reports these errors to the SCP or adjunct.

---

### 26.5.3 Error detection at the decoded SCP

The AIN decoder looks for protocol and application errors when it decodes an SCP or adjunct response message.

All errors are fatal or nonfatal. In AIN, they are

- fatal protocol errors—reported to the SCP or adjunct only for open transactions
- fatal application errors—reported to the SCP or adjunct for both open and closed transactions
- nonfatal protocol errors—not reported to the SCP or adjunct
- nonfatal application errors—reported only when an open transaction needs to be closed

### 26.5.4 Protocol errors

Incorrect TCAP messages cause Protocol errors. The protocol errors that the AIN decoder detects are as follows. All of these errors are fatal. The AIN decoder detects errors in the following order:

- Unrecognized Correlation ID. The Received Correlation ID does not reflect an existing Invoke ID that the SSP assigned.
- Unrecognized Operation Code. The Operation Code in the Received Component is not an AIN SCP or adjunct operation.
- Incorrect Parameter. Parameters in a message are in a set rather than in a sequence.
- Missing Mandatory Parameter. A received message has one or more mandatory parameters missing.

### 26.5.5 Application errors

The switch associates application errors with a received message that violates the requirements for sending the message, and are of a non-protocol nature. The switch detects errors in the following order:

- Response Message Timer Expired. Given that the SSP sends a message, the SSP response message timer (timer T1) expires before it cancels. This error is always fatal and may result from the office parameter AIN\_T1\_TIMER being set too low. Its default value is 3 s.
- Without Permission to Release Package Type Received. The SSP receives a Query/Conversation Without Permission to Release Package type from the SCP or adjunct. This error is fatal.

- Unexpected Communication. Unexpected Communication errors may be fatal or nonfatal.
  - fatal errors
    - The SSP receives an SCP or adjunct message in a TCAP package that is not allowed for that message.
    - The SSP receives an SCP or adjunct message in a response TCAP package. The message is valid, but the SSP expects a conversation package.
  - nonfatal error

The SSP expects to receive an SCP or adjunct message, in the form of a response package, from the SCP. Instead, the SSP receives a conversation TCAP package from the SCP. Although this is an error, the call still continues to process.
- Unexpected Message. An Unexpected Message occurs when one of the following conditions is true.
  - the SSP receives an SCP or adjunct response message that is not allowed in reply to the previously sent SSP query message
  - the received TCAP package contains more than one call-related message
  - the received TCAP package contains more than one message of the same type

This error is always fatal.
- Unexpected Message Sequence. This error occurs as a result of one of the following:
  - The SSP receives a multi-component response package but the second, third, and fourth components are not ACG and Send\_Notification operation codes. This error is fatal.
  - The SSP receives a multi-component conversation package but the second, third, and fourth components are not ACG, Update\_Request, and RRBCME operation codes. This error is fatal.
- Unexpected Parameter Sequence. The SSP receives an SCP, or adjunct message and the parameters in that message do not appear in the proper sequence. This error is fatal.
- Erroneous Data Value. The SSP receives an SCP or adjunct response message containing an invalid parameter, which, when dropped, does not

allow the operation to be performed. The parameter with the error may be mandatory or optional. This error can be fatal or nonfatal.

- **Missing Conditional Parameter.** The SSP receives an SCP or adjunct message; a missing conditional parameter in the response message prevents processing of the message. This error is fatal.

## 26.6 Reporting to the SCP or adjunct

Protocol errors, application errors, and the caller abandon information are reported to the SCP or adjunct.

### 26.6.1 Protocol errors

When the AIN decoder detects a protocol errors in a TCAP message that is in a query or a conversation package, then the decoder reports the error to the SCP or adjunct in a response package with the error specified as a problem code in the Reject component.

The decoder does not report to the SCP or adjunct any protocol errors that it detects in a response, abort, or unidirectional package.

### 26.6.2 Application errors

When the switch detects an application error (other than the Response Message Timer Expired) in a message in a query or conversation TCAP package, the switch sends an error message in a response TCAP package with a Return Error component.

When the switch receives an application error (other than the Response Message Timer Expired) in a message in a response TCAP package, the switch sends the error message to the SCP or adjunct in a unidirectional TCAP package with an Invoke component.

When the Response Message Timer expires, the system always sends the error message in a unidirectional package with an Invoke component.

Application error types may have the following values:

- erroneousDataValue
- missingConditionalParameter
- responseMessageTimerExpired
- unexpectedCommunication
- unexpectedMessage
- unexpectedMessageSequence
- unexpectedParameterSequence

### 26.6.3 Caller abandon information

When the caller abandoned the call, the SSP replies to the SCP or adjunct only on the following two occasions:

- when the SSP receives a Send\_To\_Resource in a conversation package
- when the SSP receives a Send\_Notification in a response package

Other messages are treated as follows:

- The SSP discards all other call-related messages
- The SSP decodes and processes non-call related messages (Monitor\_For\_Change and Update\_Request) received in a query package.
- The SSP discards a Update\_Request received in a conversation package.

## 26.7 AIN advanced trouble locating procedures

This section provides advanced troubleshooting procedures that maintenance personnel can use as a first line of support.



### **CAUTION**

#### **Possible loss of service**

The information and procedures in this chapter are for experienced operating company personnel only. Information and procedures assume a knowledge of the tools used to troubleshoot translations problems, and of the reporting subsystems for logs and OMs.

### 26.7.1 Task list

The following table provides the names of all the procedures in this document. To find the appropriate trouble locating procedure, look for the name in the left column and go to the page number listed in the right column.

<b>Procedure</b>	<b>Page</b>
"Calls to AIN trigger do not complete"	page 743

This chapter contains procedures for locating and clearing troubles in AIN. For each trouble condition, there is a procedure that contains

- explanatory and context-setting information
- summary flowchart
- step-action instructions

### 26.7.1.1 Explanatory and context-setting information

In each procedure, the sections titled “Application,” “Definition,” and “Action” contain important explanatory notes and context-setting information. Read these sections before you try to clear the trouble. The section titled “Common procedures” lists the names of common procedures that you may be asked to perform as you follow the step-action instructions. Go to these common procedures only when directed to do so.

### 26.7.1.2 Summary flowchart

The flowchart is only a summary of the main actions, decision points, and possible paths you can take. Do not use the summary flowchart to perform the procedure. Instead, use it to preview what you will be doing and to help prepare for it. For example, when these instructions involve another office, advise that office before starting the step-action instructions.

### 26.7.1.3 Step-action instructions

The step-action instructions tell you how to locate and clear a trouble. Normally, you perform the steps in order, but you may be directed to return to a previous step and repeat a sequence. The successful completion of a step may depend on previous steps; therefore, always perform the steps in the order specified.

The step-action instructions provide the command syntax and machine output you use or see while performing this procedure. For help on DMS commands or output (for example, problems logging into a utility), see *Commands Reference Manual*, 297-1001-822.

## 26.8 Calls to AIN trigger do not complete

### 26.8.1 Application

Use this procedure to locate and correct the difficulty being reported by the subscriber who cannot complete outgoing AIN calls.



#### **CAUTION**

##### **Possible loss of service**

This procedure is for experienced operating company personnel only. Do not use this procedure when you do not have knowledge and understanding of AIN and LRN-LNP tools, datafill procedures, translations, and DMS reporting subsystems for logs and OMs.

For the purposes of trouble locating, treat the following triggers as originating triggers:

- Off-Hook Immediate (OFFHKIMM)
- Off-Hook Delay (OFFHKDEL)

- Shared Interoffice Trunk (INTEROFF)
- Automatic Flexible Routing (AFR)
- Public Office Dialing Plan 3 to 10 (PODP)
- N11
- Customized Dial Plan (CDPCODE)

### **26.8.2 Definition**

This condition means that the subscriber cannot complete outgoing calls using the features of AIN software and the SCP database to query for routing and billing information.

Possible causes of this problem include

- congestion in the SSP
- incorrect or incomplete datafill (translations)
- inability of the subscriber to activate AIN features
- protocol or application errors caused by incorrect TCAP messages
- SCP datafill errors

When the SCP does not reply within a certain period of time, the system invokes network time-out and sends the call to AIN final treatment.

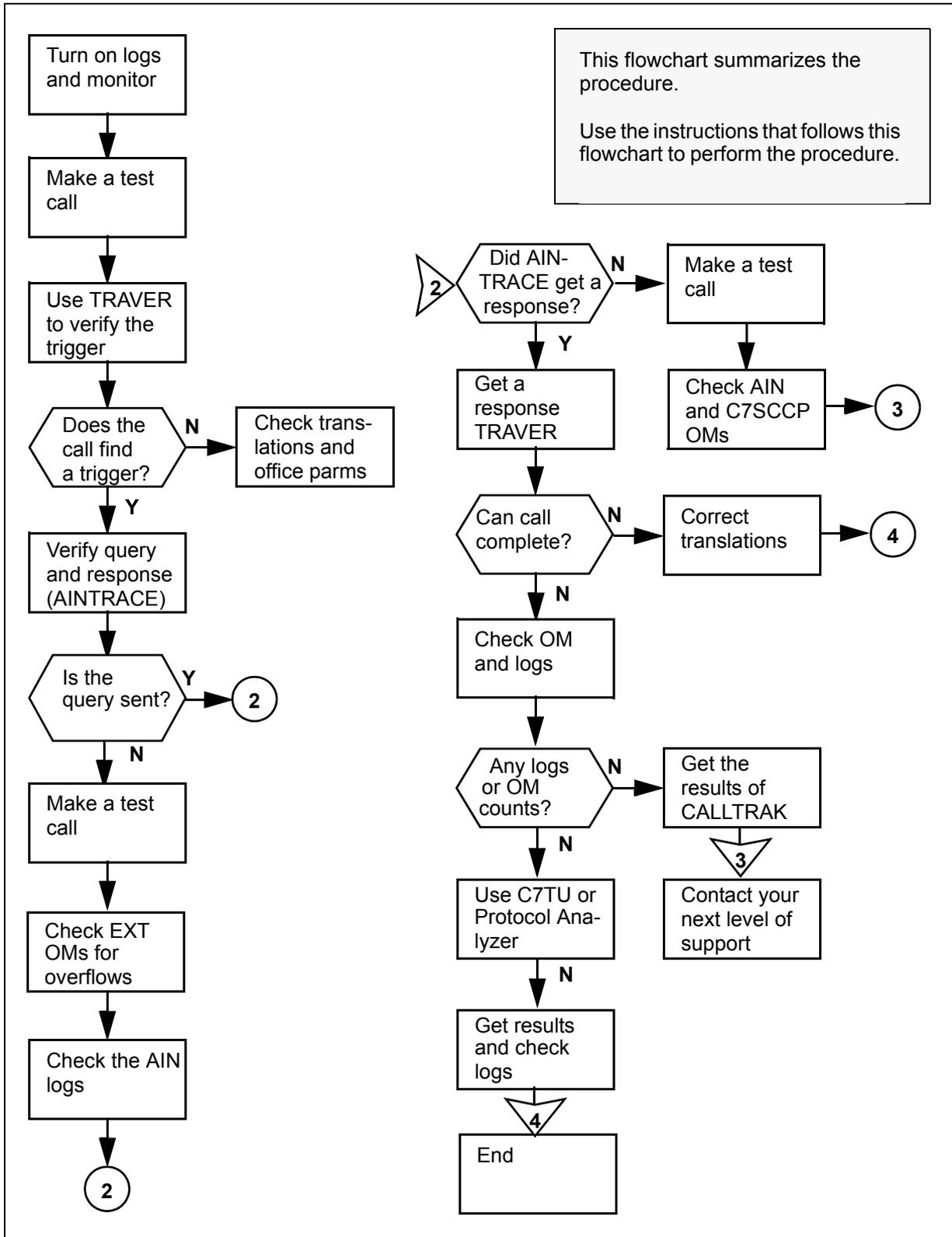
### **26.8.3 Common procedures**

None.

### **26.8.4 Action**

This procedure contains a summary flowchart and a list of specific steps for checking a “Cannot call out” trouble report for an AIN subscriber. Use the flowchart as an overview of the procedure. Follow the specific steps to perform the procedure.

Figure 590 Summary of Calls to AIN trigger do not complete



**Procedure 3 Calls to AIN trigger do not complete**

**Step Action and response**

- 1 Turn on all LNP, AIN, AUD, and TCAP logs and monitor these logs throughout this procedure.
- 2 Make a test call.  
When the call does not complete, do step 3 .  
When the call does complete, do step 5 .
- 3 Use TRAVER to verify that the call encounters the AIN trigger.  
When the TRAVER does not encounter the trigger, do step 4 .  
When the TRAVER indicates that the call would encounter the trigger, do step 5 .
- 4 Check translations and AIN office parameters.
- 5 Use AINTRACE to verify when a query is sent and a response returned.  
When a query is not sent, do step 6 .  
When a query is sent, do step 10 .
- 6 Make a test call.
- 7 Check the EXT OMs for overflows.
- 8 Check the AIN logs.
- 9 Check the SS7 network to ensure that the following are operating without troubles: linksets, routesets, and AIN subsystem.
- 10 Check when the system received a response.  
When the system did not receive a response, do step 11 .  
When the system receives a response, do step 13 .
- 11 Make a test call.
- 12 Check AIN OMs for T1 time-out. Check C7CSSP OMs for UDTs messages.  
Go to step 20 .
- 13 Use TRAVER to obtain a response TRAVER with the information received in the AINTRACE response at step 5 .  
When the response TRAVER indicates that the call can complete, do step 14 .  
When the response TRAVER indicates that the call cannot complete, do step 19 .

- 14 Make a test call.
- 15 Check AIN OMs for invalid responses. Also check all logs.  
When the system does not increment OMs and does not generate logs, do step 16 .  
When the system increments OMs and generate logs, do step 17 .
- 16 Use CALLTRAK to trace the calls in the DMS-100 switch and capture the results.  
Go to step 20 .
- 17 Make a test call.
- 18 Use C7TU or the Protocol Analyzer to capture any error messages, and check the logs.  
Go to step 21 .
- 19 Correct translations.  
Go to step 21 .
- 20 Contact the next level of support.
- 21 You have completed this procedure.



---

## 27 Logs for AIN

---

The following sections describe logs used by AIN.

The following list outlines the logs used by AIN:

- AIN300
- AIN301
- AIN302
- AIN303
- AIN304
- AIN500
- AIN501
- AIN510
- AIN511
- AIN600
- AIN601
- AIN602
- AIN610
- AIN611
- AIN612
- AINT700
- AUD579
- AUD650
- AUD651
- DFIL109
- DFIL320
- GAME100



---

## 28 AUD579

---

### 28.1 Explanation

Log AUD579 is generated when a call traps, dies, or terminates and an extra-large history data block (HDB) is linked to the call.

### 28.2 Format

The format for log AUD579 is illustrated in the following figure.

**Figure 591 Format for log AUD579**

```
AUD579 <mm:dd:yy> <hh:mm:ss> <ssdd> INFO EXT DUMP <callid>
<hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
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hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh
hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh hhhh>
```

### 28.3 Example

An example output for log AUD579 is illustrated in the following figure.



---

## 29 AIN300

---

### 29.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN300. Log AIN300 is generated when the service control point (SCP) control list overflows. The SCP control list overflows when the subsystem attempts to add a control to a full list. The subsystem does not add the control and the service switching point (SSP) does not operate according to the SCP request. The degree of seriousness of the overflow condition depends on the network condition at the time of the request.

The subsystem generates log AIN300 once per five minute period. Log AIN300 lists the number of attempts to generate this log in the UNREPORTED\_OVERFLOWES field.

Log AIN300 is for AIN Essentials and subsequent releases.

### 29.2 Format

The format for log AIN300 is illustrated in the following figure.

**Figure 593 Format for log AIN300**

```
office * AIN300 mmmdd hh:mm:ss seqno TBL ACG/SOCC SCP
Control List Overflow
  AIN ACG SCP Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: <>          TT_Name: <>
  UNREPORTED_OVERFLOWES: <>
```

**Note:** The subsystem modifies log AIN300 in NA008 so that it does not refer to AIN Essentials on the second line.

### 29.3 Example

An example output for log AIN300 is illustrated in the following figure.

**Figure 594 Example output for log AIN300**

```

COMR05AB * AIN300 Feb01 14:25:44 1400 TBL ACG/SOCC SCP
Control List Overflow
  AIN ACG SCP Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: 613722          TT_Name: AINJAZZ
  UNREPORTED_OVERFLOWS: 4

```

## 29.4 Field descriptions

The following table describes each field in the log AIN300.

**Table 941 Field descriptions for log AIN300**

Field	Value	Description
GTA	NPANXXXXXX	The Global Title Address. indicates the call or charge number on which to gap queries.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release. The TT_Name depends on entries.
UNREPORTED_OVERFLOWS	numeric	Indicates the number of attempts made to generate this log report from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within five minutes of a report that the subsystem. generated earlier.

## 29.5 Action

Analyze the SCP control list for old controls. To delete old controls, use command ACGDELETE in the CI AINCI directory.

## 29.6 Associated OM registers

Group AINACG, Register SCPOVLDO.

## 29.7 Additional information

Use table LOGCLASS to suppress generation of log AIN300. Do not use table LOGCLASS to report thresholding of log AIN300. The ACG application performs the thresholding.

---

## 30 AIN301

---

### 30.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN301 when the SMS control list overflows. The SMS control list overflows when an attempt is made to add a control when the list is full. The system does not add the control and the SSP does not behave according to the SMS request. The condition of the network at the time of the request, determines the severity of this condition.

The system generates log AIN301 once per 5-min period. Log AIN301 lists the number of attempts to generate this log since the last report. This information appears in the UNREPORTED\_OVERFLOW field.

Log AIN301 applies to AIN Essentials and subsequent releases.

### 30.2 Format

The format for log AIN301 is illustrated in the following figure.

**Figure 595 Format for log AIN301**

```
office * AIN301 mmmdd hh:mm:ss seqno TBL ACG/SOCC SMS
Control List Overflow
  AIN ACG SMS Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: <>          TT_Name: <>
  UNREPORTED_OVERFLOW: <>
```

**Note:** Log AIN301 no longer refers to AIN Essentials on the second line in NA008.

### 30.3 Example

An example output for log AIN301 is illustrated in the following figure.

**Figure 596 Example output for log AIN301**

```

COMR05AB * AIN301 Feb01 14:25:44 1400 TBL ACG/SOCC SMS
Control List Overflow
  AIN ACG SMS Control List Overflow
  ACTION: Analyze list for stale controls.
  GTA: 613722          TT_Name: AINJAZZ
  UNREPORTED_OVERFLOWS: 4

```

## 30.4 Field descriptions

The following table describes each field in log AIN301.

**Table 942 Field descriptions for log AIN301**

Field	Value	Description
GTA	NPANXXXXXX	Global title address indicates the call or charge number to gap queries on.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name can indicate a service, a group of services, or a software release. The type depends on the entry.
UNREPORTED_OVERFLOWS	numeric	This field indicates the number of attempts made to generate this log report. The measurement is made since the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 5 min of an earlier report.

## 30.5 Action

Analyze the SMS control list for stale controls. Use command ACGDELETE in the CI AINCI directory to delete any stale controls.

## 30.6 Associated OM registers

Group AINACG, register SMSOVLDO.

## 30.7 Additional information

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to perform threshold reports for log AIN301, because the ACG application performs the thresholding.

---

## 31 AIN302

---

### 31.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN302 when the SSP receives an ACG message that contains a translation type (TT), that is not currently datafilled in table C7GTTYPE for the SSP.

Log AIN302 is generated, at most, once in any 5-min period. On the subsequent report, the number of attempts to generate this log since the previous report is listed in the SUPPRESSED field.

Log AIN302 pertains to AIN Essentials and subsequent releases.

### 31.2 Format

The format for log AIN302 is illustrated in the following figure.

**Figure 597 Format for log AIN302**

```
office * AIN302 mmmdd hh:mm:ss seqno TBL Unknown TT
      AIN ACG Unknown Translation Type number.
      ACTION: Check table C7GTTYPE for the specified TT number.
      List Type: <>
      GTA: <>           TT: <>
      SUPPRESSED: <>
```

**Note:** Log AIN302 is modified in NA008 so that it no longer refers to AIN Essentials on the second line.

### 31.3 Example

An example output for log AIN302 is illustrated in the following figure.

**Figure 598 Example output for log AIN302**

```

COMR05AB * AIN302 Feb01 14:29:08 0600 TBL Unknown TT
AIN ACG Unknown Translation Type number.
ACTION: Check table C7GTTYPE for the specified TT
number.
List Type: SCP
GTA: 613722 TT: 6
SUPPRESSED: 0

```

## 31.4 Field descriptions

The following table explains each of the fields in the log AIN302.

**Table 943 Field descriptions for log AIN302**

Field	Value	Description
List_Type	SCP or SMS	Indicates: <ul style="list-style-type: none"> <li>• SCP control list for automatic controls</li> <li>• SMS control list for manual controls</li> </ul>
GTA	NPANXXXXXX	Global title address. Indicates the called or charge number to gap queries.
TT	As entered in table C7GTTYPE, field GTNUM	Translation type. Can indicate a service, a group of services, or a software release, depending on datafill.
SUPPRESSED	numeric	Indicates the number of attempts that were made to generate this log report since the last report of this type was generated. Attempts to generate this report within 5 min of a previously generated report are suppressed by the ACG application.

## 31.5 Action

Check table C7GTTYPE to determine whether the TT number is present and whether it should be included in the table.

## 31.6 Associated OM registers

None

## 31.7 Additional information

Table LOGCLASS suppresses generation of log AIN302. Do not use table LOGCLASS to threshold reporting of log AIN302, because thresholding is performed by the ACG application.

---

## 32 AIN303

---

### 32.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN303 when the SSP receives an ACG message. The ACG work queue is full when this log is generated.

The system generates log AIN303 once per 5-min period. lists the number of attempts to generate this log from the previous report in the SUPPRESSED field.

### 32.2 Format

The format for log AIN303 is illustrated in the following figure.

**Figure 599 Format for log AIN303**

```
office * AIN303 mmmdd hh:mm:ss seqno TBL ACG/SOCC_Queue
AIN ACG Work Queue Overflow
ACTION: Increase processor time for ACG.
SUPPRESSED: < >
```

*Note:* The system modifies log AIN303 in NA008, so that it no longer refers to AIN Essentials on the second line.

### 32.3 Example

An example output for log AIN303 is illustrated in the following figure.

**Figure 600 Example output for log AIN303**

```
COMR05AB * AIN303 Feb01 14:29:08 0600 TBL ACG/SOCC_Queue
AIN ACG Work Queue Overflow
ACTION: Increase processor time for ACG.
SUPPRESSED: 2
```

## 32.4 Field descriptions

The following table describes each field in log AIN303.

**Table 944 Field descriptions for log AIN303**

Field	Value	Description
SUPPRESSED	numeric	Indicates the number of attempts to generate this log report from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 5 min of an earlier generated report.

## 32.5 Action

The ACG work queue runs at SOS Scheduler class AUXCP. Use office parameter AUXCP\_CPU\_SHARE in table OFCENG to set the time slice available to AUXCP. Use caution when you change parameter AUXCP\_CPU\_SHARE, because many other office applications use AUXCP.

## 32.6 Associated OM registers

There are no associated OM registers.

## 32.7 Additional information

Use table LOGCLASS to suppress this report. Do not use table LOGCLASS to perform a threshold report for log AIN303, because the ACG application performs thresholding.

---

## 33 AIN304

---

### 33.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN304 when the SSP receives an ACG message during an image dump.

The system generates this log one time in any 15-min period. The following report lists the number of attempts to generate this log from the previous report in the SUPPRESSED field.

### 33.2 Format

The format for log report AIN304 follows:

```
office * AIN304 mmmdd hh:mm:ss seqno FAIL ACG control not added
  AIN ACG inoperative during image dumps.
  ACTION: None.
  SUPPRESSED: < >
```

### 33.3 Example

An example of log report AIN304 follows:

```
COMR05AB * AIN304 Feb01 14:29:08 0600 FAIL ACG control not added
  AIN ACG inoperative during image dumps.
  ACTION: Increase processor time for ACG.
  SUPPRESSED: 2
```

### 33.4 Field descriptions

The table that follows describes each field in the log report:

Field	Value	Description
SUPPRESSED	numeric	This field indicates the number of attempts to generate this log report, from the generation of the last report of this type. The ACG application suppresses attempts to generate this report within 10 min of an earlier generated report.

### **33.5 Action**

None.

### **33.6 Associated OM registers**

There are no associated OM registers.

### **33.7 Additional information**

Use table LOGCLASS to suppress generation of this report. Do not use table LOGCLASS to perform a threshold report for this log. The ACG application performs thresholding.

---

## 34 AIN500

---

### 34.1 Explanation

Log AIN500 records successful AIN Update message, requested activation state changes, for trigger item IDs. Log AIN500 allows telephone operating companies to monitor changes to trigger item activation states. The log output provides details on each Update message attempt, so that undesirable change requests can be monitored. Downstream processing can monitor the logs and verify the source point code and subsystem number (SSN), to validate the service control point (SCP) update requests. Log AIN500 can be used to verify that all desired activation changes are complete.

*Note:* Log AIN500 is not generated for individual trigger item updates.

### 34.2 Format

The format for log report AIN500 is illustrated in the following figure.

**Figure 601 Format for log AIN500**

```
<load name> * AIN500 <date> <time> <seqno> TBL Successful
trigger item update
Message Type: Update
SSP User Resource:<user resource id> = <resource data
value>
TDP: e<1 to 34>
SubNum: <N11,LNP,SDS,AFR>
STATE: <ON/OFF>
Source: SCP; PC: <0 to 255>-<0 to 255>-<0 to 255>, SSN:
<0 to 255>
```

### 34.3 Example

An example output for log AIN500 is illustrated in the following figure.

**Figure 602 Example output for log AIN500**

```
COMR09AJ * AIN500 JAN02 11:52:45 4100 TBL Successful
trigger item update
Message Type: Update
SSP User Resource: LocalSSPID = TEST
TDP: e17
SubNum: AFR
STATE: OFF
Source: SCP; PC: 253-253-251, SSN: 236
```

## 34.4 Field descriptions

The following table explains each of the fields in the log AIN500.

**Table 945 Field descriptions for log AIN500**

Field	Value	Description
Message Type	Message Type: Update	Indicates the Update message.
Source	SCP or PC: nnn-xxx-xxx, SSN: xxx	The values nnn and xxx are numbers from 0-255, representing the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the Update message.
SSP Resource ID	Local SSPID	Identifies the SSP User Resource ID that the Update message has indicated. For NA009, it is a fixed string.
Trigger Detection Point	TDP: e1 to e34	The value identifies the detection point in the AIN call model.
Trigger Subnumber		
Activation Status	State: ON or OFF	The value indicates the current activation state of the trigger item ID.

## 34.5 Action

No immediate action is required for log AIN500.

## 34.6 Associated OM registers

There are no associated OM registers for log AIN500.

## 34.7 Additional information

Not applicable

---

## 35 AIN501

---

### 35.1 Explanation

Log AIN501 records unsuccessful AIN Update message requests for activation state changes of trigger item IDs.

In the scenarios that follow Log AIN501 is not generated:

- The service switching point (SSP) returns a reject component with an incorrect parameter problem code.
- The SSP returns a failure report indicating a rate-too-high condition.
- The SSP returns an application error indicating an erroneous data value, or an unexpected parameter sequence.

### 35.2 Format

The format for log report AIN501 follows:

```
<load name> * AIN501 <date> <time> <seqno> TBL Unsuccessful
trigger item update
Message Type: Update
SSP User Resource: <user resource id> = <resource data value>
TDP: e<4 and 17>
SubNum: <N11,LNP,SDS,AFR>
STATE: <ON/OFF>
Source: SCP; PC: <0 to 255>--<0 to 255>--<0 to 255>, SSN: <0 to
255>
```

### 35.3 Example

An example of log report AIN501 follows:

```
COMR09AJ * AIN501 JAN02 11:52:45 4100 TBL Un-successfull
trigger item update
Message Type: Update
SSP User Resource: LocalSSPID = TEST
TDP: e4
SubNum: N11TRIG1
STATE: ON
Source: SCP; PC: 253-253-251, SSN: 236
```

## 35.4 Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
Message Type	Message Type: Update	Indicates the Update message.
Source	SCP or PC: nnn- <del>nnn</del> -nnn, SSN: xxx	The values nnn and xxx are numbers from 0-255, representing the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the Update message.
SSP Resource ID	Local SSPID	Identifies the SSP User Resource ID that the Update message has indicated. For NA009, it is a fixed string.
Trigger Detection Point	TDP: e1 to e34	The value identifies the detection point in the AIN call model.
Trigger Subnumber		
Activation Status	State: ON or OFF	The value indicates the current activation state of the trigger item ID.

## 35.5 Action

No immediate action is required for log AIN501.

## 35.6 Associated OM registers

There are no associated OM registers for log AIN501.

## 35.7 Additional information

AIN501 logs are not generated for individual trigger Item Updates.

## 36 AIN510

### 36.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN510 when operating company personnel enable automatic call gapping (ACG).

This report indicates the date and time when operating company personnel enabled the ACG.

Log AIN510 applies to AIN Essentials and subsequent releases.

### 36.2 Format

The format for log AIN510 is illustrated in the following figure.

**Figure 603 Format for log AIN510**

```
COMD08AB * AIN510 <Date> <Time> <Seqno> RTS ACG State
The AIN ACG Functionality is now turned ON.
```

### 36.3 Example

An example output for log AIN510 is illustrated in the following figure.

**Figure 604 Example output for log AIN510**

```
COMD08AB * AIN510 Feb01 14:29:08 0600 RTS ACG State
The AIN ACG Functionality is now turned ON.
```

### 36.4 Field descriptions

The following table describes each field in log AIN510.

**Table 946 Field descriptions for log AIN510 (Sheet 1 of 2)**

Field	Value	Description
Date	mmdd	Indicates month and day

**Table 946 Field descriptions for log AIN510 (Sheet 2 of 2)**

<b>Field</b>	<b>Value</b>	<b>Description</b>
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

### **36.5 Action**

There is no action required.

### **36.6 Associated OM registers**

There are no associated OM registers.

### **36.7 Additional information**

Enable ACG with the ACGONOF command in the AINCI tool.

## 37 AIN511

### 37.1 Explanation

The advanced intelligent network (AIN) subsystem generates AIN511 when operating company personnel disable automatic call gapping (ACG).

This report indicates the date and time when operating company personnel disabled ACG.

Log AIN511 applies to AIN Essentials and subsequent releases.

### 37.2 Format

The format for log AIN511 is illustrated in the following figure.

**Figure 605 Format for log AIN511**

```
COMD08AB * AIN511 <Date> <Time> <Seqno> OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

### 37.3 Example

An example output for log AIN511 is illustrated in the following figure.

**Figure 606 Example output for log AIN511**

```
COMD08AB * AIN511 Feb01 14:29:13 0602 OFFL ACG State
The AIN ACG Functionality is now turned OFF .
```

### 37.4 Field descriptions

The following table describes each field in log AIN511.

**Table 947 Field descriptions for log AIN511 (Sheet 1 of 2)**

Field	Value	Description
Date	mmdd	Indicates month and day

**Table 947 Field descriptions for log AIN511 (Sheet 2 of 2)**

<b>Field</b>	<b>Value</b>	<b>Description</b>
Time	hh:mm:ss	Indicates hour, minute, second
Seqno	nnnn	the sequence number of this report

### **37.5 Action**

There is no action required.

### **37.6 Associated OM registers**

There are no associated OM registers.

### **37.7 Additional information**

Disable ACG with the ACGONOF command in the AINCI tool.

---

## 38 AIN600

---

### 38.1 Explanation

The system generates the AIN600 log when the TstQuery tool sends a message to the service control point (SCP). Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. The AIN600 log records an attempt to send a message to the SCP. When the system finds errors or responses, the system generates additional reports in AIN601 and AIN602 logs.

### 38.2 Format

NA009 and NA011 update the AIN600 log to record new messages and parameters introduced into TstQuery. The format for the AIN600 log report follows:

```
<loadname> AIN600 <date> <time> <sequence no> INFO Test Query
Attempt
  User Name:           <>
  SessionID:          <>
  Application:         <>
  T1 Timer:           <>
  Transport:          <>
    Gtt Name:          <>
    Gtt Source:        <>
  Message:            <>
  <Parameters>
```

### 38.3 Example

An example of the AIN600 log report follows:

```
COMIO9BC AIN600 JAN02 15:50:40 9900 INFO Test Query Attempt
  User Name:           ADMIN
  SessionID:          12527
  Application:         R02
  T1 Timer:           30
  Transport:          TCPIP
    Application Instance Number: 0
  Message:            Info_Collected
  BearerCapability:   speech
  UserId Dn:          6137225085
```

## 38.4 Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value(s)	Description
User Name	local datafill	This field is the name of the MAP CI user (for example, TEAM11)
SessionID	0 to 32 767	This field is the number identification of the session.
Application	R01, R02	This field is the message set in use (for example, AIN Service Enablers).
T1 Timer	1-99	This field is the preset time to wait for an incoming message.
Transport	SS7, TCPIP	This field is the transport type used.
GTT Name	local datafill	This field is the global title translation name used for signaling connection control point (SCCP) routing.
GTT Source	local datafill	This field is the global title translation name source (for example, charge or default)
Message	messages and of the AIN Essentials message set	This field is the message of the AIN Essentials message set.
<parameters>	parameters that go with the outgoing messages, parameter field names and their values	This field is the values filled in the outgoing message parameters.

## 38.5 Action

No immediate action

## 38.6 Explanation

The system generates the AIN600 log when the TstQuery tool sends a message to the service control point (SCP). Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. The AIN600 log records an attempt to send a message to the SCP. When the system finds errors or responses, the system generates additional reports in AIN601 and AIN602 logs.

## 38.7 Format

NA009 and NA011 update the AIN600 log to record new messages and parameters introduced into TstQuery. The format for the AIN600 log report follows:

```
<loadname> AIN600 <date> <time> <sequence no> INFO Test Query
Attempt
  User Name:          ◇
  SessionID:         ◇
  Application:       ◇
  T1 Timer:          ◇
  Transport:         ◇
  Gtt Name:          ◇
  Gtt Source:        ◇
  Message:           ◇
  <Parameters>
```

## 38.8 Example

An example of the AIN600 log report follows:

```
COMIO9BC AIN600 JAN02 15:50:40 9900 INFO Test Query Attempt
  User Name:          ADMIN
  SessionID:         12527
  Application:       R02
  T1 Timer:          30
  Transport:         TCPIP
  Application Instance Number: 0
  Message:           Info_Collected
  BearerCapability:  speech
  UserId Dn:         6137225085
```

## 38.9 Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value(s)	Description
User Name	local datafill	This field is the name of the MAP CI user (for example, TEAM11)
SessionID	0 to 32 767	This field is the number identification of the session.
Application	R01, R02	This field is the message set in use (for example, AIN Service Enablers).

Field	Value(s)	Description
T1 Timer	1-99	This field is the preset time to wait for an incoming message.
Transport	SS7, TCPIP	This field is the transport type used.
GTT Name	local datafill	This field is the global title translation name used for signaling connection control point (SCCP) routing.
GTT Source	local datafill	This field is the global title translation name source (for example, charge or default)
Message	messages and of the AIN Essentials message set	This field is the message of the AIN Essentials message set.
<parameters>	parameters that go with the outgoing messages, parameter field names and their values	This field is the values filled in the outgoing message parameters.

### 38.10 Action

No immediate action

### 38.11 Associated OM registers

Does not apply

### 38.12 Release history

#### 38.12.1 NA017

This log is modified to support the new meassages and parameters introduced by feature AIN Timeout and Disconnect, (59037100).

---

## 39 AIN601

---

### 39.1 Explanation

The system generates the AIN601 log when operating company personnel issue the send command to the service control point (SCP) and receive an Connect To Resource (CTR) message from SCP as a response. Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. When the system finds errors or responses, the system generates additional reports.

### 39.2 Format

NA011 updates the AIN601 log to record new messages and parameters introduced into TstQuery. The format for the AIN601 log report follows.

```
<loadname> AIN601 <date> <time> <sequence no> INFO Test Query
Response
  User Name:           ◇
  SessionID:          ◇
  Elapsed Time Between Query And Response:
  <Min> minute(s) <Sec> second(s) <mill> millisecond(s)
  Conversation:       ◇
  Trans ID:           ◇
  Far End Trans ID:   ◇
  Corr ID:            ◇
  SCP Response Message: ◇
  <Parameters>
```

### 39.3 Example

An example of the AIN601 log report follows:

COMIO9BC AIN601 JAN02 15:50:40 0000 INFO Test Query Response

```

User Name:          ADMIN
SessionID:         12527
Elapsed Time Between Query And Response:
  0 minute(s) 0 second(s) 303 millisecond(s)
Conversation:      No
Trans ID:         2
Far End Trans ID: 65021
Corr ID:         1
SCP Response Message: Analyze_Route
Called Party ID:  7225031
  Nature of Number: Subscriber number
  Numbering Plan:  ISDN Numbering Plan
AMA SLP ID:       123456789

```

### 39.4 Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value	Description
UserName	local datafill	This field is the name of the MAP CI user (for example, TEAM11)
SessionID	0 to 32 767	This field is the number identification of the session.
ElapsedTimeBetweenQuery andResponse	see subfields	This field is the elapsed time between the query and the response.
<Min>	0 to 32 767	This field is the number of minutes that elapsed between the query and the response.
<Sec>	0 to 32 767	This field is the number of seconds that elapsed between the query and the response.
<Mill>	0 to 32 767	This field is the number of milliseconds that elapsed between the query and the response.
Conversation	Yes, No	This field indicates if the message is a conversation.
Trans ID	0 to 65 535	This field is the transaction ID.

Field	Value	Description
FarEndTransID	0 to 65 535	When the incoming message is a conversation, this field is the SCP transaction ID for the conversation.  When the incoming message is a response, there is no SCP transaction ID and this value is the service switching point (SSP) transaction ID.
CorrID	0 to 255	This field contains a correlation ID from the incoming transaction capabilities application part (TCAP) message. The ID is the invoke ID.
CTR Message	incoming messages	This field is the SCP response.
<parameters>	incoming message parameters	This field is the value filled in the outgoing message parameter.

### 39.5 Action

No immediate action

### 39.6 Associated OM registers

Does not apply

### 39.7 Release history

#### 39.7.1 Na017

This log is modified to support the new messages and parameters introduced by feature AIN Timeout and Disconnect, (59037100). Also, AIN601 Log sends a CTR message from SCP as a response (59037140).



---

## 40 AIN602

---

### 40.1 Explanation

The system generates the AIN602 log when operating company personnel use the send command and find a send error. Operating company personnel generate the send command from the query tool at the TSTQUERY level of the MAP terminal. The AIN602 log indicates that the system found an error and did not send the message to the service control point (SCP).

### 40.2 Format

NA011 updates the AIN602 log to record new messages and parameters introduced into TstQuery. The format for the AIN602 log report follows.

```
<loadname>  AIN602 <date> <time> <sequence no> INFO Test Query
Error
<Error Message>
  User Name:      <>
  SessionID:     <>
  Application:    <>
  Transport:     <>
  GTT Name:      <>
  GTT Source:    <>
  Message:       <>
  T1 Timer:      <>
```

### 40.3 Example

An example of the AIN602 log report follows:

```
COMIO9BC      AIN602 JAN02 15:50:40 9900 INFO Test Query Error
  <Unable to send a query due to transport out of
service>
  User Name:          ADMIN
  SessionID:         12527
  Application:       R02
  Transport:        TCPIP
    Application Instance Number: 0
  Message:          Info_Collected
  BearerCapability:  speech
  UserId Dn:        6137225085
  T1 Timer:         30
```

## 40.4 Field descriptions

The table that follows explains each of the fields in the log report.

Field	Value	Description
<ErrorMessage>	No data in query to the SCP, Unexpected data encountered, Invalid event ID or transaction ID encountered, Invalid parameters encountered, The application subsystem does not exist, No TCAP transaction IDs available, Application out of Service, Unrecognized Game Interface Return Code	This field is the description of the error messages received from the messaging interface.
User Name	local datafill	This field is the MAP CI user (for example, TEAM11).
SessionID	0 to 32 767	This field is the number identification of the session.
Application	R01, R02	This field is the message set in use (for example, AIN Service Enablers).
Transport	SS7, TCPIP	This field is the transport type used to send the messages.
GTT Name	local datafill	This field is the global title translation name used for signaling connection control part (SCCP) routing.
GTT Source	local datafill	This field is the GTT name source (for example, charge or default).
Application Instance Number	local datafill	This field is the number of the application instance (for example, 0).

---

Field	Value	Description
Message	Outgoing messages	This field is the outgoing message.
T1 Timer	0-99	This field is the set time to wait for an incoming message.

#### **40.5 Action**

No immediate action

#### **40.6 Associated OM registers**

Does not apply



---

# 41 AIN610

---

## 41.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN610 when an ACG control list changes. Changes include the addition or replacement of a control. Log AIN610 indicates the contents of the control, the affected list, and when the addition or the replacement of a control occurred.

Log AIN610 report applies to AIN Essentials and later releases.

## 41.2 Format

The format for log AIN610 is illustrated in the following figure.

**Figure 607 Format for log AIN610**

```
office AIN610 mmmdd hh:mm:ss seqno INFO ACG/SOCC
Control List Change
    AIN ACG Control List Change
    Change_Event: <>          List_Type: <>
    GTA: <>                   Duration (10 msec): <>
    TT_Name: <>               Interval (10 msec): <>
```

*Note:* Log AIN610 no longer refers to AIN Essentials on the second line in NA008.

## 41.3 Example

An example output for log AIN610 is illustrated in the following figure.

**Figure 608 Example output for log AIN610**

```

COMD05AJ      AIN610 JAN01 21:31:44 4624 INFO ACG/SOCC
Control List Change
  AIN ACG Control List Change
  Change_Event: CONTROL ADDED      List_Type: SCP
  GTA: 613621                      Duration (10 msec): 6400
  TT_Name: AINJAZZ                 Interval (10 msec): 400

```

## 41.4 Field descriptions

The following table describes each field in log AIN610:

**Table 948 Field descriptions for log AIN610**

Field	Value	Description
Change_Event	CONTROL ADDED or CONTROL REPLACED	indicates when the control was an addition to the specified list or a replacement of a current control in the list
List_Type	SCP or SMS	indicates the following: <ul style="list-style-type: none"> <li>• SCP control list for automatic controls</li> <li>• SMS control list for manual controls</li> </ul>
GTA	NPANXXXXXX	the global title address indicates the call or charge number to gap queries on
TT_Name	As entered in table C7GTTYPE, field GTTNAME	the translation type name can indicate a service, a group of services, or a software release, depending on the entry
Duration	numeric	indicates the gap duration in 10-ms units
Interval	numeric	indicates the gap interval in 10-ms units

## 41.5 Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

## 41.6 Associated OM registers

Group AINACG, register CTRLCHA

## 41.7 Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

---

## 42 AIN611

---

### 42.1 Explanation

The advanced intelligent network (AIN) subsystem generates log AIN611 when AIN removes a control from the indicated ACG control list. Log AIN611 generates this report when the AIN subsystem removes a control that uses one of the following removal messages:

- service control point (SCP)
- service management system (SMS) removal messages
- service switching point (SSP) delete command

The system does not generate this report when a control expires.

This log report is for AIN Essentials and later releases.

### 42.2 Format

The format for log AIN611 is illustrated in the following figure.

**Figure 609 Format for log AIN611**

```
office      AIN611 mmmdd hh:mm:ss seqno INFO ACG/SOCC Control
Removed
            AIN ACG control removed from list.
            List_Type: <>
            GTA: <>          TT_Name: <>
```

**Note:** Log AIN611 no longer refers to AIN 0.1 on the second line in NA008.

### 42.3 Example

An example output for log AIN611 is illustrated in the following figure.

**Figure 610 Example output for log AIN611**

```

COMD05AJ      AIN611 JAN01 21:50:27 7646 INFO ACG/SOCC
Control Removed
      AIN ACG control removed from list.
      List_Type: SCP
      GTA: 613621                      TT_Name: AINJAZZ

```

## 42.4 Field descriptions

Field descriptions for log AIN611 are provided in the following table.

**Table 949 Field descriptions for log AIN611**

Field	Value	Description
List_Type	SCP or SMS	Indicates: <ul style="list-style-type: none"> <li>• SCP control list for automatic controls</li> <li>• SMS control list for manual controls</li> </ul>
GTA	NPANXXXXXX	Global title address. indicates the call or charge number to gap queries on.
TT_Name	As entered in table C7GTTYPE, field GTTNAME	Translation type name. This field can indicate a service, a group of services, or a software release, depending on entry.

## 42.5 Action

There is no immediate action required. Use this report to monitor control list activity or for security purposes.

## 42.6 Associated OM registers

Group AINACG, register CTRLCHA

## 42.7 Additional information

Use table LOGCLASS to threshold or suppress the report of this log.

---

## 43 AIN612

---

### 43.1 Explanation

Log AIN612 indicates when the service control point (SCP) control list or service management system (SMS) control list (or both) have been restored (controls removed) as requested. Log AIN612 is generated when controls are removed, either as a result of the service switching point (SSP) receiving an ACG\_Global\_Ctrl\_Restore message from the SCP, or when the SSP restore command ACGRESTORE is invoked.

### 43.2 Format

The format for log AIN612 is illustrated in the following figure.

**Figure 611 Format for log AIN612**

```
COMD08AJ  AIN612 mmmdd hh:mm:ss ssdd INFO ACG/SOCC Control
List Restored
  AIN ACG Control List Restored.
  List Type: <>   Request Type: <>
  Number of Controls Deleted: <>
  Source: <>
```

### 43.3 Example

An example output for log AIN612 is illustrated in the following figure.

**Figure 612 Example output for log AIN612**

```

COMD08AJ      AIN612 JAN01 21:50:27 7646 INFO ACG/SOCC
Control List Restored
  AIN ACG Control List Restored.
  List_Type: SMS   Request_Type: Exclude Zero-Gap SMS
  Controls
  Number of Controls Deleted: 45
  Source: SCP; PC:100-105-106,      SSN:51

COMD08AJ      AIN612 JAN01 14:50:00 7646 INFO ACG/SOCC
Control List Restored
  AIN ACG Control List Restored.
  List_Type: SCP           Request_Type: All
  Number of Controls Deleted: 10
  Source: SSP

```

## 43.4 Field descriptions

The following table explains each of the fields in log AIN612

**Table 950 Field descriptions for log AIN612**

Field	Value	Description
Date:	mmmdd	the date that the log is generated
Time:	hh:mm:ss	the time that the log is generated
Seqno:	ssdd	the sequence number of the log
List_Type	SCP or SMS or SCP and SMS	SCP or SMS or SCP and SMS Control Lists
Request_Type	All or Exclude Zero-gap SMS Controls	all controls are removed or all but zero-gap controls are removed (SMS only)
Source	SSP, SCP; PC:nnn- SSN:xxx	SSP-initiated (AINCI, ACGRESTORE command) or SCP-initiated restore using ACG_Global_Ctrl_Restore message (where nnn and xxx are numbers from 0-255, representing the point code (PC) and the signaling subsystem number (SSN) of the SCP that initiated the restore request
Number of Controls Deleted	0-512	the total number of controls removed from the control list(s)

**43.5 Action**

Not applicable

**43.6 Associated OM registers**

Group AINACG, register CTRLCHA

**43.7 Additional information**

Not applicable



---

# 44 AINT700

---

## 44.1 Explanation

The system generates the AINT700 log when the AINTrace tool finds a CTR and CTR clear messages related to the agent or to select messages. The AINT700 log records the CTR messages, and displays the messages in the following formats: TEXT, HEX, and BOTH (TEXT and HEX).

## 44.2 Format

The NA011 product release introduced log AINT700.

The following HEX format applies to the AINT700 log report.

```
loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report
TCAP message recorded by AINTRACE:
  Time:<>
  Direction<>

****TCAP message in HEX format ****
  <sequence of hex bytes>
```

---

The following TEXT format applies to the AINT700 log report.

```
<loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report
TCAP message recorded by AINTRACE:
  Time:                               <>
  Direction:                           <>

****TCAP message in TEXT format ****
TCAP Package Type:                     <>
Origin ID: <>
Respond ID:<>

Component Sequence:
=====
      Component:                        <>

      Component Type:                   <>

          Invoke ID:                    <>
          Correlation ID:                <>

Operation Code
      Operation Family:                  <>
      Operation Name:                   <>

====Parameter Sequence====

<Parameter Name>
<Parameter Fields>
```

The following BOTH format applies to the AINT700 log report.

```

<loadname> AINT700 <date> <time> <sequence no> INFO AINTrace Report

TCAP message recorded by AINTRACE:
Time:                <>
Direction            <>

****TCAP message in HEX format ****
      <sequence of hex bytes>

****TCAP message in TEXT format ****
TCAP Package Type    <>
Origin ID:           <>
Respond ID:          <>

Component Sequence
=====
Component:

Component Type:      <>

Invoke ID:           <>
Correlation ID:      <>

Operation Code
Operation Family:    <>
Operation Name:      <>

====Parameter Sequence====

<Parameter Name>
<Parameter Fields>

```

## Examples

The following sections provide log report examples in TEXT, HEX, and BOTH format for the following areas:

- T\_Busy query and Offer\_Call response
- ACG
- Update query and Update\_success response
- Create\_Call

### T\_Busy query and Offer\_Call response

The following example, in HEX format, represents an AINT700 log report for a T\_Busy query.

```
COML013AM      AINT700 OCT20 20:21:07 9100 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27      DN 6136210307
Direction:            from SSP (outgoing)

      ***** TCAP message in HEX format *****
      E2 4D C7 04 00 00 60 00 E8 45 E9 43 CF 01 00
      D1 02 64 06 30 3A BF 35 07 81 05 16 73 22 70
      70 8D 01 00 8F 07 01 10 16 73 22 70 70 9F 34
      01 1A 93 07 03 10 16 63 12 30 70 92 07 03 13
      16 63 12 30 70 94 01 00 8E 02 82 91 9F 5E 01
      01 90 01 00
```

The following example, in HEX format, represents an AINT700 log report for an Offer\_Call response.

```
COML013AM      AINT700 OCT20 20:21:07 9300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27      DN 6136210307
Direction:            from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
      E4 44 C7 04 00 00 60 00 E8 3C E9 3A CF 02 01
      00 D1 02 65 04 30 30 92 07 00 00 16 63 12 03
      60 98 01 42 BA 22 8B 0A 36 31 33 37 37 37 38
      37 37 37 8D 0A 48 45 4C 4C 4F 2C 20 44 41 44
      93 08 30 31 30 31 30 30 30 30
```

The following example, in TEXT format, represents an AIN700 log report for a T\_Busy query.

```

COML013AM      AINT700 OCT20 20:21:07 9100 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27   DN 6136210307
Direction:            from SSP (outgoing)

        ***** TCAP message in TEXT format *****
TCAP Package Type:    Query with Permission
  Origin ID:          00 00 60 00
  Respond ID:         NIL

Component Sequence
=====

COMPONENT:           1

Component Type:      Invoke (last) Component

Invoke ID:           0
Correlation ID:     256

Operation Code
  Operation Family:   Request Instructions
  Operation Name:    T-Busy
    
```

The following example, in TEXT format, represents an AINT700 log report for an Offer\_Call response.

```
COML013AM      AINT700 OCT20 20:21:07 9300 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27   DN 6136210307
Direction:            from SCP or Adjunct (incoming)

        ***** TCAP message in TEXT format *****
TCAP Package Type:    Response
Origin ID:            NIL
Respond ID:           00 00 60 00

Component Sequence
=====

COMPONENT:           1

Component Type:       Invoke (last) Component

Invoke ID:            1
Correlation ID:       0

Operation Code
  Operation Family:   Connection Control
  Operation Name:     Offer_Call

====Parameter Sequence====

CallingPartyID:       6136213006
  Nature of Number:   Unknown or not applicable
  Numbering Plan:     Unknown or not applicable
  Presentation Indicator: Presentation allowed
  Screen Indicator:   User provided, not screened
  Odd/Even Indicator: Even digits
ControllingLegTreatment: alertingOnPattern2DistinctiveSpecial

DisplayText:
  callingAddress:     "6137778777"
  callingPartyName:   "HELLO, DAD"
  dateTimeOfDay:      "01010000"
```

The following example, in BOTH format, represents an AIN700 log report for a T\_Busy query.

```

COML013AM      AIN700 OCT20 20:21:07 9100 INFO AINTrace Report

  TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27   DN 6136210307
Direction:            from SSP (outgoing)

      ***** TCAP message in HEX format *****
                        E2 4D C7 04 00 00 60 00 E8 45 E9 43 CF 01 00
                        D1 02 64 06 30 3A BF 35 07 81 05 16 73 22 70
                        70 8D 01 00 8F 07 01 10 16 73 22 70 70 9F 34
                        01 1A 93 07 03 10 16 63 12 30 70 92 07 03 13
                        16 63 12 30 70 94 01 00 8E 02 82 91 9F 5E 01
                        01 90 01 00

      ***** TCAP message in TEXT format *****
TCAP Package Type:    Query with Permission
  Origin ID:          00 00 60 00
  Respond ID:         NIL

Component Sequence
=====

COMPONENT:           1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           0
Correlation ID:      256

Operation Code
  Opcode Bytes:      64 06
  Operation Family:  Request Instructions
  Operation Name:    T-Busy

  Parameter Tag:     30
====Parameter Sequence====

  Parameter Id:      BF 35
  Contents:          81 05 16 73 22 70 70
UserID:
  DN:                6137220707
--{ End of UserID }--
      Parameter Id:      8D
  Contents:          00
BearerCapability:    speech

  Parameter Id:      8F
  Contents:          01 10 16 73 22 70 70

```

(continued)

```
CalledPartyID:          6137220707
  Nature of Number:     Subscriber number
  Numbering Plan:       ISDN Numbering Plan
  Odd/Even Indicator:   Even digits

  Parameter Id:         9F 34
  Contents:             1A
  TriggerCriteriaType:  tBusy

  Parameter Id:         93
  Contents:             03 10 16 63 12 30 70
  ChargeNumber:         6136210307
  Nature of Number:     ANI of the calling party; national number
  Numbering Plan:       ISDN Numbering Plan
  Odd/Even Indicator:   Even digits

  Parameter Id:         92
  Contents:             03 13 16 63 12 30 70
  CallingPartyID:       6136210307
  Nature of Number:     Unique national (significant) number
  Numbering Plan:       ISDN Numbering Plan
  Presentation Indicator: Presentation allowed
  Screen Indicator:     Network provided
  Odd/Even Indicator:   Even digits

  Parameter Id:         94
  Contents:             00
  ChargePartyStationType: IdentifiedLine - No Special Treatment

  Parameter Id:         8E
  Contents:             82 91
  BusyCause:
  General location:     Public network serving the local user
  Coding Standard:     CCITT Standard
  Number Of Diags:     0
  Cause value:         Normal event - User busy
  Diagnostic Byte #1:  242
  Diagnostic Byte #2:  54

  Parameter Id:         9F 5E
  Contents:             01
  BusyType:            Call Cannot Be Offered

  Parameter Id:         90
  Contents:             00
  CalledPartyStationType: IdentifiedLine - No Special Treatment
```

The following example, in BOTH format, represents an AIN700 log report for an Offer\_Call response.

```

COML013AM      AIN700 OCT20 20:21:07 9300 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
Time: 99/10/20 20:21:07  Tid:   74  316
Agent:                HOST 00 1 09 27   DN 6136210307
Direction:            from SCP or Adjunct (incoming)

        ***** TCAP message in HEX format *****
                                E4 44 C7 04 00 00 60 00 E8 3C E9 3A CF 02 01
                                00 D1 02 65 04 30 30 92 07 00 00 16 63 12 03
                                60 98 01 42 BA 22 8B 0A 36 31 33 37 37 37 38
                                37 37 37 8D 0A 48 45 4C 4C 4F 2C 20 44 41 44
                                93 08 30 31 30 31 30 30 30 30

        ***** TCAP message in TEXT format *****
TCAP Package Type:      Response
Origin ID:              NIL
Respond ID:             00 00 60 00

Component Sequence
=====

COMPONENT:              1

Component code:         E9
Component Type:         Invoke (last) Component

Invoke ID:              1
Correlation ID:        0

Operation Code
  Opcode Bytes:         65 04
  Operation Family:     Connection Control
  Operation Name:       Offer_Call

  Parameter Tag:        30
====Parameter Sequence====

  Parameter Id:         92
  Contents:              00 00 16 63 12 03 60
CallingPartyID:         6136213006
  Nature of Number:     Unknown or not applicable
  Numbering Plan:       Unknown or not applicable
  Presentation Indicator: Presentation allowed
  Screen Indicator:     User provided, not screened
  Odd/Even Indicator:   Even digits

  Parameter Id:         98
  Contents:              42
ControllingLegTreatment: alertingOnPattern2DistinctiveSpecial

```

(continued)

```

Parameter Id:      BA
  Contents:        8B 0A 36 31 33 37 37 37 38 37 37 37 8D 0A 48
                   45 4C 4C 4F 2C 20 44 41 44 93 08 30 31 30 31
                   30 30 30 30
  DisplayText:
    callingAddress: "6137778777"
    callingPartyName: "HELLO, DAD"
    dateTimeOfDay:  "01010000"

```

ControllingLegTreatment:alertingOnPattern2DistinctiveSpecial

```

Parameter Id:      BA
  Contents:        8B 0A 36 31 33 37 37 37 38 37 37 37 8D 0A 48
                   45 4C 4C 4F 2C 20 44 41 44 93 08 30 31 30 31
                   30 30 30 30
  DisplayText:
    callingAddress: "6137778777"
    callingPartyName: "HELLO, DAD"
    dateTimeOfDay:  "01010000"

```

#### 44.2.1 ACG

The following example, in HEX format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```

COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

```

```

  TCAP Message recorded by AINTrace:
  Time: 99/10/20 20:46:26
  Direction:           from SCP or Adjunct (incoming)

```

\*\*\*\*\* TCAP message in HEX format \*\*\*\*\*

```

E1 28 C7 00 E8 24 E9 22 CF 02 01 00 D1 02 69
01 30 18 9F 3B 01 4A 9F 3E 01 0D 9F 3F 01 0D
9F 46 01 0F 9F 45 05 16 63 12 34 01

```

---

The following example, in TEXT format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```
COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 99/10/20 20:46:26
    Direction:          from SCP or Adjunct (incoming)

        ***** TCAP message in TEXT format *****
    TCAP Package Type:  Unidirectional
    Origin ID:         NIL
    Respond ID:        NIL

    Component Sequence
    =====

    COMPONENT:         1

    Component Type:    Invoke (last) Component

    Invoke ID:         1
    Correlation ID:    0

    Operation Code
    Operation Family:  Network Management
    Operation Name:    ACG

    ====Parameter Sequence====

    ControlCauseIndicator:
    Control Digits:    10 digit control
    SMS Indicator:     SMS initiated controls encountered
    SCP Indicator:     no SCP overload controls encountered

    GapDuration:       infinity

    NationalGapInterval:  no300Seconds

    Translation Type:  AINPOP - internetwork applications - 15

    GlobalTitleValue:  6136214310
```

The following example, in BOTH format, represents an AINT700 log report for Automatic Call Gapping (ACG).

```
COML013AM      AINT700 OCT20 20:46:26 0100 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 99/10/20 20:46:26
Direction:          from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                E1 28 C7 00 E8 24 E9 22 CF 02 01 00 D1 02 69
                01 30 18 9F 3B 01 4A 9F 3E 01 0D 9F 3F 01 0D
                9F 46 01 0F 9F 45 05 16 63 12 34 01

      ***** TCAP message in TEXT format *****
TCAP Package Type:   Unidirectional
Origin ID:           NIL
Respond ID:          NIL

Component Sequence
=====

COMPONENT:          1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           1
Correlation ID:      0
      Operation Code
      Opcode Bytes:   69 01
      Operation Family: Network Management
      Operation Name:  ACG

      Parameter Tag:   30
====Parameter Sequence====

      Parameter Id:    9F 3B
      Contents:        4A
ControlCauseIndicator:
Control Digits:      10 digit control
SMS Indicator:       SMS initiated controls encountered
SCP Indicator:       no SCP overload controls encountered

      Parameter Id:    9F 3E
      Contents:        0D
GapDuration:         infinity
```

(continued)

```

Parameter Id:      9F 3F
  Contents:        0D
NationalGapInterval: no300Seconds

  Parameter Id:    9F 46
  Contents:        0F
Translation Type:  AINPOP - internetwork applications - 15

  Parameter Id:    9F 45
  Contents:        16 63 12 34 01
GlobalTitleValue: 6136214310
    
```

#### 44.2.2 Update query and Update\_success response

The following example, in HEX format, represents an AINT700 log report for an Update query.

```

COML013AM   AINT700 OCT20 20:51:03 8300 INFO AINTrace Report

  TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:      from SCP or Adjunct (incoming)

  ***** TCAP message in HEX format *****
                E2 26 C7 04 00 00 E0 00 E8 1E E9 1C CF 01 02
                D1 02 68 03 30 13 BF 67 10 A1 0A 85 08 4C 6F
                63 53 53 50 49 44 9F 5B 01 78
    
```

The following example, in HEX format, represents an AINT700 log report for an Update\_success response.

```

COML013AM   AINT700 OCT20 20:51:03 8500 INFO AINTrace Report

  TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:      from SSP (outgoing)

  ***** TCAP message in HEX format *****
                E4 0F C7 04 00 00 E0 00 E8 07 EA 05 CF 01 02
                30 00
    
```

The following example, in TEXT format, represents an AINT700 log report for an Update query.

```
COML013AM      AINT700 OCT20 20:51:03 8300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
      Time: 99/10/20 20:51:03
      Direction:                from SCP or Adjunct (incoming)

      ***** TCAP message in TEXT format *****          TCAP Package Type:
Query with Permission
      Origin ID:                00 00 E0 00
      Respond ID:               NIL

      Component Sequence
      =====

      COMPONENT:                1

      Component Type:           Invoke (last) Component

      Invoke ID:                2
      Correlation ID:           256

      Operation Code
      Operation Family:         Information Revision
      Operation Name:           Update

      ====Parameter Sequence====

      SSPUserResource:
      SSPUserResourceID:
      LocalSSPID:               LocSSPID
      ONoAnswerTimer:           120
      --{ End of SSPUserResource }--
```

The following example, in TEXT format, represents an AIN700 log report for an Update\_success response.

```

COML013AM      AIN700 OCT20 20:51:03 8500 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:                from SSP (outgoing)

      ***** TCAP message in TEXT format *****
TCAP Package Type:        Response
      Origin ID:           NIL
      Respond ID:          00 00 E0 00

Component Sequence
=====

COMPONENT:                1

Component Type:           Result (last) Component
CORR ID:                  2
*** No parameters in the message ***

```

The following example, in BOTH format, represents an AIN700 log report for an Update query.

```

COML013AM      AIN700 OCT20 20:51:03 8300 INFO AINTrace Report

      TCAP Message recorded by AINTrace:
Time: 99/10/20 20:51:03
Direction:                from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                                E2 26 C7 04 00 00 E0 00 E8 1E E9 1C CF 01 02
                                D1 02 68 03 30 13 BF 67 10 A1 0A 85 08 4C 6F
                                63 53 53 50 49 44 9F 5B 01 78

      ***** TCAP message in TEXT format *****
TCAP Package Type:        Query with Permission
      Origin ID:           00 00 E0 00
      Respond ID:          NIL

```

(continued)

Component Sequence

=====

COMPONENT: 1  
Component code: E9  
Component Type: Invoke (last) Component

Invoke ID: 2  
Correlation ID: 256

Operation Code

Opcode Bytes: 68 03  
Operation Family: Information Revision  
Operation Name: Update

Parameter Tag: 30  
====Parameter Sequence====

Parameter Id: BF 67  
Contents: A1 0A 85 08 4C 6F 63 53 53 50 49 44 9F 5B 01  
78

SSPUserResource:  
SSPUserResourceID:  
LocalSSPID: LocSSPID

The following example, in BOTH format, represents an AINT700 log report for an Update\_success response.

```

COML013AM      AINT700 OCT20 20:51:03 8500 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 99/10/20 20:51:03
    Direction:           from SSP (outgoing)

        ***** TCAP message in HEX format *****
                E4 0F C7 04 00 00 E0 00 E8 07 EA 05 CF 01 02
                30 00

        ***** TCAP message in TEXT format *****
    TCAP Package Type:   Response
    Origin ID:           NIL
    Respond ID:         00 00 E0 00

    Component Sequence
    =====

    COMPONENT:          1

    Component code:     EA
    Component Type:     Result (last) Component
    CORR ID:            2
    *** No parameters in the message ***
  
```

### 44.2.3 Create\_Call

The following example, in HEX format, represents an AINT700 log report for Create\_Call.

```

COMR13AY      AINT700 JAN05 11:33:01 9400 INFO AINTrace Report

    TCAP Message recorded by AINTrace:
    Time: 00/01/05 11:33:01
    Direction:           from SCP or Adjunct (incoming)

        ***** TCAP message in HEX format *****
                E2 25 C7 04 00 00 00 BB E8 1D E9 1B CF 01 01
                D1 02 65 07 30 12 8F 07 03 10 16 63 12 17 73
                92 07 03 13 16 63 12 17 05
  
```

The following example, in TEXT format, represents an AINT700 log report for Create\_Call.

```
COMR13AY      AINT700 JAN05 11:33:01 9400 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 00/01/05 11:33:01
Direction:           from SCP or Adjunct (incoming)

          ***** TCAP message in TEXT format *****
TCAP Package Type:   Query with Permission
Origin ID:           00 00 00 BB
Respond ID:          NIL

Component Sequence
=====

COMPONENT:           1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           1
Correlation ID:     256

Operation Code
Opcode Bytes:       65 07
Operation Family:   Connection Control
Operation Name:     Create_Call

Parameter Tag:      30
====Parameter Sequence====

Parameter Id:       8F
Contents:           03 10 16 63 12 17 73
CalledPartyID:     6136217137
Nature of Number:   National (significant) number
Numbering Plan:     ISDN Numbering Plan
Odd/Even Indicator: Even digits
Parameter Id:       92
Contents:           03 13 16 63 12 17 05
CallingPartyID:    6136217150
Nature of Number:   Unique national (significant) number
Numbering Plan:     ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator:   Network provided
Odd/Even Indicator: Even digits
```

The following example, in BOTH format, represents an AIN700 log report for Create\_Call.

```

COMR13AY      AIN700 JAN05 11:33:01 9400 INFO AINTrace Report

TCAP Message recorded by AINTrace:
Time: 00/01/05 11:33:01
Direction:           from SCP or Adjunct (incoming)

      ***** TCAP message in HEX format *****
                        E2 25 C7 04 00 00 00 BB E8 1D E9 1B CF 01 01
                        D1 02 65 07 30 12 8F 07 03 10 16 63 12 17 73
                        92 07 03 13 16 63 12 17 05

      ***** TCAP message in TEXT format *****
TCAP Package Type:    Query with Permission
Origin ID:            00 00 00 BB
Respond ID:          NIL

Component Sequence
=====

COMPONENT:           1

Component code:      E9
Component Type:      Invoke (last) Component

Invoke ID:           1
Correlation ID:     256

Operation Code
Opcode Bytes:       65 07
Operation Family:   Connection Control
Operation Name:     Create_Call

Parameter Tag:      30
====Parameter Sequence====

Parameter Id:       8F
Contents:           03 10 16 63 12 17 73
CalledPartyID:     6136217137
Nature of Number:   National (significant) number
Numbering Plan:     ISDN Numbering Plan
Odd/Even Indicator: Even digits
Parameter Id:       92
Contents:           03 13 16 63 12 17 05
CallingPartyID:    6136217150
Nature of Number:   Unique national (significant) number
Numbering Plan:     ISDN Numbering Plan
Presentation Indicator: Presentation allowed
Screen Indicator:   Network provided
Odd/Even Indicator: Even digits

```

### 44.3 Field descriptions

The following table explains the fields in the log report.

Field	Value(s)	Description
TID	two hexadecimal numbers	This field is the TID of the message.
Agent	value depends on the agent	This field is the agent of the message.
Direction	from SCP or Adjunct (incoming), from SSP (outgoing)	This field is the direction of the message.
Hex message	Hexadecimal	This field is the contents of the message in hexadecimal and text form.
Text message	Text	This field is the contents of the message in text form.
Hex and text message	Hexadecimal and text	This field is the contents of the message in hexadecimal and text form.
TCAP package type	Unidirectional, Query with Permission, Query Without Permission, Response, Conversation With Permission, Conversation Without Permission, Abort	This field is the package type of the message.  <b>Note:</b> AIN does not allow the following package types: Query Without Permission, Conversation Without Permission.
Origin ID	numerical	This field is the originator of the message.
Respond ID	numerical	This field is the responder of the message.
Component Type	Invoke (Last), Return Result (Last), Return Error, Reject, Invoke (Not Last), Return Result (Not Last)	This field is the component type of the message.  <b>Note:</b> AIN does not allow the Return Result (Not Last) component.
Component ID	numerical	This field is the component identification of the message.
Invoke ID	numerical	This field is the invoke identification of the message.
Correlation ID	numerical	This field is the correlation identification of the message.
<Operation Code>	a valid operation code	This field is the operation code of the message.
<parameters>	valid parameter(s), their field names and their values	This field is the value of the parameter(s).

**Action**

No immediate action

**44.4 Associated OM registers**

Does not apply

**44.5 Release history****44.5.1 NA017**

This log is modified to support the new messages and parameters introduced by feature AIN Timeout and Disconnect, (59037100). Also, AINT700 Log records the CTR messages, and displays the message in the following formats: TEXT, HEX, and BOTH (TEXT and HEX), (59037140).







**45.6 Associated OM registers**

Not applicable

**45.7 Additional information**

Not applicable





### **46.5 Associated OM registers**

OM group EXT with key BASCPS\_HUGE\_EXT\_BLK is associated with log AUD651.

### **46.6 Additional information**

Not applicable

# 47 DFIL109

## 47.1 Explanation

The Datafill (DFIL) subsystem generates log report DFIL109 when a service switching point (SSP) receives an enhanced 800 service (E800) call on a trunk. Table SSPTKINF does not have the originating local access and transport area (LATA) entered for the trunk. The system cannot route the call. The call receives a C7\_APPLICATION treatment.

## 47.2 Format

The log report format for DFIL109 follows:

```
*DFIL109 mmmdd hh:mm:ss ssdd FAIL SSP TRANSLATION ERROR
      CKT cktid
      TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED
```

## 47.3 Example

An example of log report DFIL109 follows:

```
*DFIL109 JAN05 22:41:59 3540 FAIL SSP TRANSLATION ERROR
      CKT          PVNIT 1
      TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED
```

## 47.4 Field descriptions

The following table describes each field in the log report.

Field	Value	Description
FAIL SSP TRANSLATION ERROR	Constant	Indicates an SSP translation error
CKT	Character string	Identifies the trunk that received the incoming E800 call.
TABLE SSPTKINF NOT DATAFILLED; LATA IS REQUIRED	Constant	Indicates that table SSPTKINF does not contain the correct datafill.

## 47.5 Action

Add the trunk CLLI and LATA number to table SSPTKINF.

## **47.6 Associated OM registers**

There are no associated OM registers.

## **47.7 Additional information**

There is no additional information.

---

# 48 DFIL320

---

## 48.1 Explanation

The advanced intelligent network (AIN) subsystem generates log Datafill (DFIL)320 when both of the following conditions occur:

- after the SCP sends an AIN AnalyzeRoute, ForwardCall, or SendToResource (intelligent peripheral) response, or default routing
- when the system cannot get an RCNAME while performing ISDN response translations

## 48.2 Format

The format for log report DFIL320 follows.

```
<load name> ** <date><time><seqno> INFO Missing Datafill
Missing tuple in table RTECHAR.
ISDN translations unable to completeduring AIN response proce:
AIN response used following routing characteristics:
CDN = <CDN returned in the AIN response>
TNS = <TNS returned in the AIN response>
OSA = <OSA returned in the AIN response>
BC = <BC used during the AIN response>
```

## 48.3 Example

An example of log report DFIL320 follows.

```
office DFIL320 mmdd hh:mm:ss ssdd INFO Missing Datafill
Missing tuple in table RTECHAR
ISDN translations unable to complete during AIN response
processing.
AIN response used following routing characteristics:

CDN = NA
TNS = UNK
OSA = UNK
BC = SPEECH
```

## 48.4 Field descriptions

The following table explains each of the fields in the log report:

Field	Value	Description
CDN	NIL, L, NA, IN, --	This field is the calling directory number information returned in the AIN response.
TNS	UNK, NA, --	This field is the transaction network service information returned in the AIN response.
OSA	UNK, PUBP, PUBA, --	This field is the operator system access information returned in the AIN response.
BC	NIL, SPEECH, 64KDATA, 64KX25, 56KDATA, DATAUNIT, 64KRES, 3_1KHZ, 7_KHZ, VOICE_DATA, 64K_RATE-AD_DAT A, 32KSPEECH, WIDEBAND, 64K_NCA, --	This field is the bearer capability information used during the AIN response.

## 48.5 Action

Use the routing characteristics to create a tuple in table RTECHAR. Link the tuple to an RCNAME.

*Note:* Datafill a routing characteristic name in table RCNAME, then reference the name from table RTECHAR.

## 48.6 Related OM registers

Does not apply

---

## 49 Game100

---

### 49.1 Explanation

The Advance Intelligent Network (AIN) subsystem contains generic AIN Messaging Environment (GAME). The GAME subsystem generates GAME100 log. The GAME100 log is generated when GAME software encounters a mismatch in handling of specific message type (e.g. R01, R02, DINA etc.). At generation of this log, which indicates that the service switching point (SSP) was unable to send an error message to service control point (SCP). The open transaction is closed as well due to error in handling.

The GAME100 log is for for AIN Essentials and subsequent releases.

### 49.2 Format

The log report format for GAME100 is as follows:

```
office * GAME100 mmmdd hh:mm:ss seqno INFO GAME_ERR_REPORT
ERR = < >
MSGSET = < >
TRANS BLOCK = < >
```

### 49.3 Example

An example of log report GAME100 follows:

```
S3_500_17BL CM GAME100 APR04 05:10:16 0504 INFO GAME_ERR_REPORT
ERR = MSGSET MISMATCH
MSGSET = R01
TRANS BLOCK = 434F 204B 203D 4F43 534E 4C4F 2045 3233
4446 4446 6F4C 706F 6465 7020 7461 2064
3137 3846 3135 2020 2020 2020 4520 455F
5252 525F 5045 524F 2054 0000 4120 454C
5452 0420 215F 2494 2141 0003 2141 7788
```

### 49.4 Field descriptions

The following table describes each field in the log report:

Field	Value	Description
ERR	Text	This describes the error type encountered.
MSGSET	R01, R02, DINA, IN, etc.	This field is the message set in use (for example, AIN Service Enablers).
TRANS BLOCK	Hex Data	This is the data which corresponds to the error that occurred.

### **49.5 Action**

This is an info log. No action is required.

If any drastic call processing problems are seen with this log, then this log provides very valuable information to support engineers.

### **49.6 Associated OM registers**

There are no associated OM registers.

### **49.7 Additional information**

There is no additional information.

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## Part III Requirements

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Part III: “Requirements” consists of the following chapter(s):

Chapter 50: “Product support” on page 827



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## 50 Product support

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### 50.1 General

This chapter describes the product support offered by Nortel Networks for the AIN SE product.

Nortel Networks's AIN Service Enablers product support is provided under standard customer service center (CSC) and global product support (GPS) policies and procedures, when the product approaches GA status.

When the operating company has a problem they cannot resolve, they contact the Nortel Networks regional CSC. The regional prime opens a customer service report (CSR).

The regional prime works the issue with the appropriate specialty group within the CSC, as required. When the problem cannot be resolved at this point, it is referred to the appropriate Nortel Networks GPS group for corrective action or assistance.

Corrective actions consist of workarounds, fixes in future software releases, incremental software updates (patches), documentation changes, or requests for features towards new or changed functionality.

When a problem is resolved, the solution is provided to the customer who authorizes closure of the CSR.

### 50.2 Customer acceptance

Customer acceptance is generally the result of a successful verification office (VO) on the customer's premises. Nortel Networks and the customer evaluate product performance by executing a series of test cases and an in-service trial. Exceptions to the expected results are documented and prioritized through customer service requests (CSRs) and PRSs. Serious faults are corrected prior to completion of the VO trial. Minor faults can be deferred to a future release. Regulatory approvals generally apply to hardware products, but are not required for software products.



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## List of terms

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This document contains a list of terms used exclusively for advanced intelligent networks (AIN).

Other DMS-100 switch related terms can be found in the reference manual, NTP 297-1001-825, *Glossary of Terms and Abbreviations*.

Numerical entries

### **0+MDS**

*See* Call Messenger feature.

### **00Y**

A code used to provide information about the calling party when calling address and automatic number identification (ANI) information is not available. 00Y codes are also used when a trunk group comes in from another office that serves more than one numbering plan area (NPA). The 00Y code is mapped to the serving NPA of the calling party. 00Y calls are usually feature group C (FGC) calls.

### **1+MDS**

*See* Call Messenger feature.

### **1FR**

one-party flat rate line

### **10FR**

ten-party flat rate line

### **911 Service**

Basic 911 Emergency Service

### **A entries**

### **AAB**

abstract syntax notation 1 (ASN.1)

**ACM**

address complete message

**additional functional call (AFC)**

A service assigned to a directory number (DN) on a functional terminal, permitting multiple calls to the DN.

**address complete message (ACM)**

A Common Channel Signaling No. 7 (CCS7) protocol message sent backward that indicates all the address signals required for routing the call to the called party have been received and that the call can be routed.

**ADO**

ADD option

**advanced intelligent network (AIN)**

A network designed as a service control architecture that is engaged during basic call processing. Once engaged, predefined logic using a common set of service independent functions directs subsequent call-processing actions. After the service control functions are completed, basic call processing resumes.

AIN is an evolution of the Common Channel Signaling No. 7 (CCS7) intelligent network (IN). By providing generic external influencing of call processing, AIN enables an operating company to create its own services for its subscribers.

**advanced intelligent network response (AINRES)**

An option for the translation verification (TRAVER) command line that simulates the processing of certain types of responses coming back from the service control point (SCP).

**AFR**

automatic flexible routing.

**AGENTIDX**

agent index

**AIN**

advanced intelligent network

**AINDENY**

denial of AIN services

**AINF**

advanced intelligent network (AIN) final treatment

**AIN Maintenance parameter (AMP)**

Parameter AMP marks and traces test calls and activates logging on selected calls through the network.

**AINRES**

advanced intelligent network response

**ambiguous speed call (AMBISC)**

A feature that allows speed call users to dial speed call access codes and abbreviation codes without using the asterisk (\*) prefix.

**AMP**

AIN Maintenance parameter

**ASN**

*See* abstract syntax notation.

**ASN.1 encoding rules**

Rules that specify the representation during transfer of the values of any ASN.1 type. The ASN.1 encoding rules enable the information being transferred to be identified by the recipient as a specific value of a specific ASN.1 type.

**ASOC**

advanced intelligent network (AIN) software optionality control

**AT&T**

American Telephone & Telegraph Company

**automatic code gap (ACG) message**

A type of message parameter that is sent to a service switching point (SSP) to control the rate at which new initiating events are generated. An ACG is used to control congestion.

**B entries****basic business group (BBG)**

A feature that provides the basic capabilities for handling a group of lines associated with a single customer. BBG includes provision for special dialing arrangements, special restriction arrangements, and special announcement capability for the switch to recognize the association of the customer's lines as a group.

**basic call service view (BSV)**

The objective of Basic Call Service View (BSV) is to isolate the AIN application service element (ASE) and its children from the changes in Basic

Session Service (BASS), User Service Agent (USA), and Network Service Agent (NSA) and to encapsulate all agent-specific processing.

**basic session service (BASS)**

A session transactor that has a basic call root service active.

**BASS**

basic session service

**BBG**

basic business group

**BCD**

binary-coded decimal

**Bell operating company (BOC)**

Operating company resulting from AT&T divestiture.

**binary-coded decimal (BCD)**

A numerical system in which each digit of a decimal number is expressed separately as a 4-bit binary number.

**BKG**

background class

**BLF**

Busy Lamp Field

**BOC**

Bell operating company

**BRISC**

Bell-Northern Research (BNR) reduced instruction set computing

**BSV**

*See* Basic Call Service View.

**Business Set Short Hunt**

A feature that allows incoming calls to hunt through a set of directory numbers (DN) for an idle DN on which to terminate. The set of DNs can be either standard DN appearances or multiple-appearance DNs, and the set can include all or a subset of the DNs on a Meridian business set (MBS).

**C entries**

**Call Forwarding Group Don't Answer (CFGD/CFGDA)**

A feature that allows calls to idle hunt group members to be forwarded if the call is not answered within a certain amount of time.

**Call Forwarding Programming (CFWP)**

The process that directs incoming calls to a predetermined telephone number.

**Call Forwarding Remote Access (CFRA)**

A feature that allows a user with Call Forwarding Universal (CFU), Call Forwarding Intragroup (CFI), or Call Forwarding Fixed (CFF) to activate CFU, CFI, or CFF from a remote line through direct inward system access (DISA).

**Call Forwarding Validation (CFWVAL)**

A feature that provides a means of verifying whether a line has successfully forwarded when a user activates Call Forwarding. There are two variants of CFWVAL: (1) termination validation, which checks that a call completes to the forward number; (2) routing validation, which sends a confirmation tone when the system determines that the call routes successfully and call forwarding is activated.

**call hold (CHD)**

A feature that is available to Meridian Digital Centrex (MDC) end-users with 500/2500 sets. The feature allows an end-user to hold one call for any length of time. This feature is activated by dialing a feature code (for example, \*9) after a switchhook flash.

**Call Party Handling (CPH)**

The Call Party Handling(CPH) capabilities provide support for basic mid-call event processing for 2-party and 3-party calls.

**Calling Line Number Display (CLIDSP)**

An option that allows the end-user to control the format of the calling line address on business set displays.

**Calling Name and Number Display (CNND)**

A feature that is activated by the user and indicates that the user's name and directory number can be displayed at the terminating set.

**Calling Name Delivery (CNAMD)**

A feature that displays the name of the calling party on the called party's set if the called set has a suitable display window.

**Calling Name Delivery Blocking (CNAB)**

A Custom Local Area Signaling Service (CLASS) feature that allows subscribers to control, for each outgoing call, whether their name is displayed on the set of the called party.

**calling party ID**

calling number

A feature that allows an end-user to access a messaging service after an unsuccessful local or 1+ toll call. The feature routes the end-user's call from the end office (EO) to either a Traffic Operator Position System (TOPS) switch or an interexchange carrier's (IEC) service gateway where the messaging service system is connected. The end-user can then leave a message for a recipient through the messaging service. This feature is also known as 1+MDS and it compliments the 0+MDS feature.

**call processing (CP)**

The function of DMS-100 call-processing software is to establish connections among telephony agents. A number of functional steps are required to process a call, such as detecting the incoming call, receiving digits, analyzing (translating) digits to determine call destination, selecting terminating agent, establishing connection, signaling to and detecting an answer from the terminating agent, and detecting disconnect.

**Call Screening/Monitoring Intercept (CSMI)**

A feature that provides subscribers of a network-based answering service (NBAS) with a means of monitoring and intercepting calls that are being handled by the NBAS.

**call segment (CS)**

A functionally separate call portion in a service switching point (SSP) that is accessible to a service control point (SCP) or adjunct through a connection view (CV). For a two-party call, a CS consists of either the originating or terminating call portion in the AIN switch. For a multiparty call, a CS consists of multiple originating and terminating call portions merged together in the SSP for one end-user.

**call segment association (CSA)**

A relationship between two call segments (CS) of different calls in a service switching point (SSP) for the same end-user. The SSP establishes the relationship if the two CSs share a common controlling leg or if the leg status of the controlling leg is "pending" in one CS and is anything but "pending" in the other CS (that is, the end-user or virtual party supported by the leg is only actively participating in one CS at a time).

**call segment identifier (CSID)**

A number that identifies a call segment (CS).

**call transfer (CXR)**

A feature that allows a subscriber to instruct the switching equipment or operator to transfer any incoming calls to another station.

**call type (CT)**

An option used to specify which type of call (for example, voice or data) may trigger and send a query message.

**call waiting origination (CWO)**

A Meridian Digital Centrex (MDC) feature that allows an originating line to impose a call waiting tone on a busy called line.

**capability set 1 (CS-1)**

The first set of advanced intelligent network (AIN) capabilities to be standardized by CCITT/ITU-T. CS-1 is documented in the *CCITT/ITU-T Intelligent Network (IN) Recommendations (Q.1200-series)*.

**carrier access code (CAC)**

A set of three digits designating the inter-LATA or international carrier (INC) that handles a call. Also known as carrier identification digits.

**CBE**

Call Forwarding Busy (CFB) Exclude Intragroup

**CBECBU**

Call Forwarding Busy (CFB) Exclude External Originators/Unrestricted Forwarding

**CBI**

Call Forwarding Busy (CFB) Block Intragroup

**CBICBU**

Call Forwarding Busy (CFB) Intragroup Deny Unrestricted

**CBQ**

Call-Back Queuing

**CBU**

Integrated Business Network (IBN) Call Forwarding Busy Unrestricted

**C-bus**

channel bus

**CDAR**

Customer-Dialed Account Recording

**CDCL**

Code Calling

**CDE**

Call Forwarding Don't Answer (CFD) Exclude Intergroup

**CDECDU**

Call Forwarding Don't Answer (CFD) Exclude External Originators/Unrestricted Forwarding

**CDI**

Call Forwarding Don't Answer (CFD) Exclude Intragroup

**CDPCODE**

Customized Dialing Plan Code

**CDPFAC**

Customized Dialing Plan Feature Access Code

**CD-ROM**

compact-disk, read-only memory (CD-ROM)

**CDT**

Custom Integrated Business Network (IBN) Disconnect Treatment (CDT)

**CDU**

Integrated Business Network (IBN) Call Forwarding Don't Answer Unrestricted

**CFBL**

Call Forwarding Busy Line

**CFGDA**

Call Forwarding Group Don't Answer

**CFK**

Call Forwarding on a Per-Key Basis

**CFMDN**

Secondary Multiple Appearance Directory Number Call Forwarding

**CFRA**

Call Forwarding Remote Access

**CFS**

Integrated Business Network (IBN) Call Forwarding Simultaneous/Screening

**CFWP**

Call Forwarding Programming

**CFWVAL**

Call Forwarding Validation

<b>CFXU</b>	Universal Access to Call Forwarding
<b>CH</b>	consultation hold
<b>channel bus (C-bus)</b>	A proprietary duplicated time division multiplexed (TDM) bus. The C-bus interconnects network interface units (NIU) with link interface units (LIU).
<b>CHD</b>	call hold
<b>CHG</b>	charge option, basic rate access functional set (BRAFS)
<b>CI</b>	Collect Information
<b>CIC</b>	Carrier Identification Code
<b>CIDB</b>	Calling Identity Delivery Blocking
<b>CIDS</b>	Calling Identity Delivery and Suppression
<b>CIFR</b>	Call_Info_From_Resource message
<b>CITR</b>	Call_Info_To_Resource message
<b>CLASS—Message Waiting Indicator Ring Notification (CRN)</b>	A feature that provides periodic ringing for Station Message Waiting (MWT) subscribers with CLASS Message Waiting Indicator (CMWI) notification. CRN is a combination of stuttered dial tone, immediate ringing, and periodic ringing.
<b>CLIDSP</b>	Calling Line Number Display
<b>CMCF</b>	Controlled Multiple Call Forwarding

**CNA**

Calling Number Announcement

**CNAB**

Calling Name Delivery Blocking

**CNAMD**

Calling Name Delivery

**CNDBO**

Calling Number Delivery Blocking Override

**CNF30**

Super Conference

**Code Restriction (CRL)**

A feature that denies or allows selected station lines and network-access trunks the ability to complete outgoing-exchange network calls based on the dialing pattern. The restricted calls are routed to an attendant, an announcement, or a tone on an individual end-user basis.

**compact-disk, read-only memory (CD-ROM)**

A compact disk adapted for home entertainment that is capable of storing video and audio data in digital format for playback through a computer. Data bits are stored as microscopic pits on the disk and are read by a laser beam.

**connection view (CV)**

A connection view (CV) provides a service platform with a generic representation (that is, view) of switch call-processing resources. CV processing, within the switch, can be viewed as translating external instructions into operations that are understood by internal switch call processing as well as translating internal call-processing events and the state of internal call-processing resources into information that is understood by external devices such as a service control point (SCP) or adjunct. The switch call-processing resources are described by a set of CV objects, which include the following: call segment association (CSA), call segment (CS), legs, connection point (CP), basic call model (BCM) composed of points in call (PIC) and detection points (DP), CV-related timer, and CV-related monitors.

**controlling leg**

The leg closest to the access side of the call. For an originating call portion, the controlling leg is the calling party. For a terminating call portion the controlling leg is the called party. Access signaling on this leg can directly control the progress of the call. In a call segment, only one leg is directed toward the originating or a terminating access and it is the controlling leg. *See also* passive leg, and leg.

---

**conversation package**

A transaction capabilities application part (TCAP) package expecting a reply. The service control point (SCP), or adjunct, sends a conversation package to the service switching point (SSP) that instructs the SSP to perform an activity and send a reply to the SCP. The SSP can also send a conversation package to the SCP. *See also* TCAP package.

**cookbook**

A document that provides datafilling examples for the advanced intelligent network (AIN) service switching point (SSP). The examples are organized by trigger and response type.

**CPG**

Call Progress

**CR**

Cancel Resource

**CS**

call segment.

**CS-1**

capability set 1

**CSA**

call segment association

**CSID**

call segment identifier

**CSMI**

Call Screening/Monitoring Intercept

**CT**

call type

**CTM**

conference trunk module

**CTR**

connect to resource

**CTW**

Call Transfer Warning

**Customer-Dialed Account Recording (CDAR)**

A feature that allows variable-length account codes to be entered on a per-call basis, along with predefined prefix digits to be prefixed to the calling number. This feature is not compatible with the off-hook immediate trigger.

**customer dial plan (CDP)**

A trigger that can be subscribed by a customer group assigned to a customized dialing plan. This triggering criteria is met when an access code, extension number, or vertical service code within a customized dialing plan is dialed. It is applicable to the information analyzed trigger detection point (TDP).

**Custom Integrated Business Network (IBN) Disconnect Treatment (CDT)**

A feature that allows the operating company to assign a disconnect treatment to a Meridian Digital Centrex (MDC) line on an individual directory number (DN) basis.

**CUTTD**

Cut-Through Dialing

**CV**

connection view

**CWC**

Call Waiting Chaining

**CWD**

Dial Call Waiting

**CWI**

Call Waiting Intragroup

**CWX**

Call Waiting Exempt

**D entries**

**DCBI**

directed call pickup with barge-in

**DCBU**

directed call pickup with non-barge-in

**D-channel**

A channel that carries call control messages between a terminal on an integrated services digital network (ISDN) interface and the exchange termination. Call control messages are used to set up, maintain, or clear a

circuit-switched call on a B-channel. The D-channel also carries low-speed packet data between a terminal on an ISDN interface and a terminal in the packet data network. For a primary rate interface (PRI), the D-channel is a 64-kbit/s bidirectional channel. *See also* Bb channel, basic rate interface (BRI), and primary rate interface (PRI).

**DCP**

deferred call processing

**DCPK**

Directed Call Park

**DCPU**

directed call pickup

**DCR**

Dynamic Call Routing

**Denied Incoming (DIN)**

Because the DIN feature is a customer group-based feature, any calls coming in from outside the customer group are denied. Any calls that are not considered intragroup as defined in Integrated Business Network (IBN) translations are denied even if the originator and terminator are in the same customer group.

**Denied Termination (DTM)**

A feature that prevents a line receiving calls. The line can only originate calls.

**detection point (DP)**

A point in basic call processing, as modeled by the basic call model (BCM), that identifies when a service control point (SCP) or adjunct can receive a report of a given event and influence subsequent call-processing. DPs are located at transitions between points in call (PIC) in the BCM. Two types of DPs exist: trigger detection points (TDP) and event detection points (EDP). *See also* trigger detection point (TDP), event detection point (EDP), point in call (PIC), and exit event.

**DG**

digits dialed

**Dialable Directory Number (DDN)**

A feature that enhances the Calling Number Delivery (CND) feature. DDN displays the calling number in a format that allows the user to return a call easily.

**digits dialed (DG)**

An option used to specify which digits must be dialed for a call to trigger and send a query message.

**DIN**

Denied Incoming

**directed call pickup with barge-in (DCBI)**

A feature that allows the Meridian Digital Centrex (MDC) subscriber to barge in and connect to an incoming call intended for another line in the same customer group and served by the same DMS-100 switch.

**directed call pickup with non-barge-in (DCBU)**

A feature that allows a subscriber to answer an incoming call that is ringing another line in the same customer group and served by the same DMS-100 switch.

**distributed intelligent network architecture (DINA)**

DINA is the advanced intelligent network (AIN) architecture for the DMS-250 switch.

**Distributed Line Hunt (DLH)**

A hunting arrangement that consists of lines divided into groups. The hunt is sequential over all groups until a line in an available group is selected.

**DLH**

Distributed Line Hunt

**DMS**

Digital Multiplex System

**DMS-SCP**

service control point

**DMS-SSP**

service switching point

**DOR**

Denied Origination

**DP**

detection point  
dial pulse

**DQS**

Display Queue Status

<b>DQT</b>	Display Queue Status
<b>DRING</b>	Distinctive Ringing
<b>DRU</b>	development release unit
<b>DS-3</b>	A 44.6-Mbit/s digital signal comprised of 28 multiplexed DS-1 signals.
<b>DSCWID</b>	Spontaneous Call Waiting Identification with Disposition
<b>DTMF</b>	dual tone multi frequency
<b>Dynamic Call Routing (DCR)</b>	A technique that changes call-routing patterns depending on the network load. DCR provides significant cost efficiencies, increased flexibility, and increased network survivability in comparison to traditional, hierarchical call routing.
<b>E entries</b>	
<b>EAMF</b>	equal-access multifrequency
<b>EAP</b>	equal access plan
<b>EBO</b>	executive busy override
<b>EBOM</b>	Executive Busy Override on Multiple Appearance Directory Number
<b>EDP</b>	event detection point
<b>EDP-N</b>	event detection point (EDP), and notification
<b>EDP-R</b>	event detection point (EDP), and request

**EDRAM**

enhanced digital recorded announcement machine

**EHL D**

electronic key telephone service (EKTS) hold for use by Service Order System (SERVORD)

**EMW**

Executive Message Waiting

**encapsulation**

object-oriented programming

**end-office display (EOD)**

An option that provides the capability to display the calling party number and the dialed 800 number by the calling party on Call Management Service (CMS) and Custom Local Area Signaling Service (CLASS) terminals.

**end-user**

An addressable network user (business or residential) who employs either analog, public switched data service (PSDS), or integrated services digital network (ISDN) access-signaling arrangements.

**enhanced outward wide area telephone service (EOW)**

A wide area telephone service (WATS) available in the residential services environment that provides outward WATS for equal-access end offices (EAEO).

**enhanced two-way WATS (ETW)**

enhanced two-way wide area telephone service

**enhanced two-way wide area telephone service (ETW)**

A wide area telephone service (WATS) available in the residential services environment that combines enhanced outward wide area telephone service (EOW) and inward wide area telephone service (INWATS) line class code capabilities.

**EOD**

end-office dialing. *also* end-office display

**equal-access multifrequency (EAMF)**

A type of trunk signaling in the equal-access feature group B environment that translates and turns a call into the correct carrier.

**escape code (ESC)**

An option used to specify that only calls in which an escape code has not been dialed may trigger and send a query message.

**escape coin (ESCCN)**

An option used to specify which call types should escape this trigger. This option only affects coin line originated calls and may only be datafilled for the Specific\_Digit\_String (SDS) trigger.

**escape DN (ESCDN)**

An option used to specify that calls to a directory number (DN) that resides on the switch should not trigger. This option may only be datafilled for the Local Number Portability (LNP) trigger.

**escape equal access (ESCEA)**

An option used to specify that equal access calls should not trigger. This option may only be datafilled for the Specific\_Digit\_String (SDS) trigger.

**escape operator (ESCOP)**

An option used to specify that calls going to an operator should not trigger. This option may only be datafilled for the Specific\_Digit\_String (SDS) trigger.

**ESCCN**

escape coin

**ESCDN**

escape DN

**ESCEA**

escape equal access

**ESCOP**

escape operator

**ESCO**

emergency service central office number

**ETW**

enhanced two-way wide area telephone service

**event detection point (EDP)**

A point in basic call processing, as modeled by the basic call model (BCM), that can be armed by the receipt of a Request\_Report\_BCM\_Event message from the service control point (SCP) or adjunct. The EDPs are located at transitions between points in call (PIC). EDPs can be armed as requests (EDP-R) or notifications (EDP-N). When the requested event occurs, the switch reports it to the SCP or 'adjunct. *See also* detection point (DP), trigger detection point (TDP), point in call (PIC), requested event, request, and notification.

**EWAL**

enhanced wide area telephone service (WATS) access line

**executive busy override (EBO)**

A feature that enables an end-user on a Meridian Digital Centrex (MDC) line to gain access to a busy line in the MDC group.

**Executive Busy Override on Multiple Appearance Directory Number (EBOM)**

A feature that allows a caller to barge in on a call involving Multiple Appearance Directory Number (MADN) Selective Call Acceptance (SCA) or MADN multiple call arrangement (MCA), but only if the calling party and called party are in the same customer group.

**Executive Conference (MMCONF150)**

A feature that provides enhancements to the Meet-me Conference feature. It provides the following optional capabilities for a Meet-me Conference; allows a Meet-me Conference size of up to 150 participants (the previous limits were 6 or 30 participants); provides feature access codes to lock and unlock access to the conference (previously, the only method of conference control was by hookswitch flash); and allows the controller of the conference to add new conferees without assistance from the attendant.

**Executive Message Waiting (EMW)**

Executive Message Waiting (EMW) consists of three features: Message Service—Message-List Editing; Message Service—Leave Message; and Call Request Enhancement.

Together, these three features enable end-users to leave and retrieve messages at a Meridian business set (MBS) with display.

**expanded Bellcore AMA format (EBAF)**

expanded Bellcore automatic message accounting format

**extended VANC**

extended voice-activated network control

**extended voice-activated network control (VANC)**

A service that encompasses the capabilities provided by initial VANC, while adding the ability to use voice commands to edit lists for services, such as Selective Call Forwarding (SCF), or to request the status of subscribed features (for example, active or inactive). Extended VANC is under consideration for the future. *See also* initial voice-activated network control (VANC), voice-activated network control (VANC), and voice-activated dialing (VAD).

**F entries**

**FAC**

feature access code

**facsimile (FAX)**

A system of transmitting and reproducing graphic matter, such as printing or still pictures, by means of signals sent over telephone lines. Also, the copy produced by such a system.

**FAX**

facsimile

**FAX Messaging Platform (FMP)**

The FMP stores facsimiles (FAX) which have been forwarded from the FAX-Thru Service (FTS) when FTS detects a busy or no-answer condition. The FMP will ensure that the FAX is transmitted from storage to the original destination when the destination FAX machine is available. *See also* FAX-Thru Service (FTS).

**FAX-Thru Service (FTS)**

The FTS feature is a Special Delivery Service (SDS) enhancement which upon detection of a busy or no-answer condition allows routing of a facsimile (FAX) call to a FAX Messaging Platform (FMP). *See also* FAX Messaging Platform (FMP), and Special Delivery Service (SDS).

**feature**

A unit of one telecommunications-based capability that can be provided to an end-user.

**feature access code (FAC)**

A code used by subscribers for controlling and accessing custom calling services.

**feature activator (FA)**

The key on an integrated services digital network (ISDN) stimulus terminal with circuit-switched service that activates supplementary features such as Ring Again (RAG).

**feature group A (FGA)**

A plan for the generation of a billing record for a terminating feature group call.

**feature group B (FGB)**

A plan that allows an equal-access end office (EAEO) or a non-EAEO to provide subscribers with access to FGB carriers. To use this plan, the subscriber must dial 950-WXXX.

**feature group C (FGC)**

A plan for equal access (EA) that implements the equal access plan (EAP) with the following exceptions: it uses FGC signaling (predivestiture signaling) and it uses additional trunk group types.

**feature group D (FGD)**

A plan for equal access (EA) that implements the equal access plan (EAP).

**FGA**

feature group A

**FIE**

facility information element

**FIG**

Flash Ignore

**Fire Reporting System (FRS)**

A feature that is required for lines that interface with dial dictation equipment, which sends off-hook signals back to the switch.

**Fire Reporting System, Origination (FRO)**

Software that indicates, at a remote location, the busy or idle status of a line. The FRO operates a signal distribution point for each call originating from or terminating to a line that has the FRO enabled.

**Flash Ignore (FIG)**

A feature that causes the switching unit to ignore the flash signal from that line.

**FLEXI**

Flexible Intercept

**Flexible Intercept (FLEXI)**

A feature that allows for the automatic rerouting of calls that cannot be completed because of equipment limitations, imposed restrictions, or dialing irregularities. Calls are routed to the attendant, a tone, or an announcement.

**FMP**

FAX Messaging Platform

**FSM**

finite state machine

**FTS**

FAX-Thru Service

**FXR**

Fast Call Transfer

**G entries****GAME**

generic AIN message encoder/decoder

**generic AIN message encoder/decoder (GAME)**

A part of the advanced intelligent network (AIN) service switching point (SSP) platform. GAME provides messaging capabilities for AIN applications, which include encoding the data passed by an application and sending the encoded message to an external database (service control point [SCP] or adjunct); and receiving a message from the external database (SCP or adjunct), decoding it, and returning the result to the application.

**global title address (GTA)**

An address, such as dialed digits, that does not explicitly contain information that would allow routing in the signaling network (that is, the translation function of the service control point (SCP) is required). Formerly known as global title value (GTV).

**global title value (GTV)**

*See* global title address (GTA). GTA replaces GTV in current documentation. This is consistent with efforts to standardize common channel signaling (CCS) terminology.

**GMS**

Generic Multiplexing Service

**GOS**

grade of service

**GPS**

Global Product Support

**GTA**

global title address

**GTV**

global title value

**H entries**

**harmonic ringing**

A system of selectively signaling several parties on a party line by using a different frequency and a specially tuned ringer for each party. The frequencies are harmonics of  $16\frac{2}{3}$  Hz and 25 Hz as follows:  $16\frac{2}{3}$  Hz, 25 Hz,  $33\frac{1}{3}$  Hz, 50 Hz, and  $66\frac{2}{3}$  Hz. *See also* frequency selective ringing (FSR).

**HCB**

history control block

**HDB**

history data block

**HF**

hands-free unit

**HFMUTE**

combined hands-free/mute

**HLD**

permanent hold

**I entries**

**IAM**

initial address message.

**ICMSG**

Intentional Call Messenger

**IDDD**

international direct distance dialing

**IEC**

interexchange carrier

**IECFB**

Internal/External Call Forwarding Busy Denied

**IECFBCBU**

Internal/External Call Forwarding Busy Unrestricted

**IECFD**

Internal/External Call Forwarding Don't Answer Denied

**IECFDCDU**

Internal/External Call Forwarding Don't Answer Unrestricted

**INAP**

intelligent network application protocol

**incremental software delivery (ISD) process**

A process that enables a service to be delivered to a product without the need for a complete batch change supplement (BCS).

**initial address message (IAM)**

The first message in a call (connection oriented or connectionless) that contains information required to route the call to its destination.

**initial voice-activated network control (VANC)**

A service that allows simple activation and deactivation of vertical services by speaking one of a limited set of service names. Initial VANC is an AIN 0.2 service driver. *See also* extended voice-activated network control (VANC), voice-activated network control (VANC), and voice-activated dialing (VAD).

**intelligent network application protocol (INAP)**

A protocol developed by the European Telecommunications Standards Institute (ETSI) for the European intelligent network (IN). It defines the protocol required for the support of capability set 1 (CS-1).

**Intentional Call Messenger (ICMSG)**

A feature that automatically allows callers to leave messages for the parties of their choice. Callers do not have to attempt to reach the message recipient beforehand.

**IP**

intelligent peripheral

**IPUI**

intelligent peripheral user interaction

**IRR**

Inhibit Ring Reminder

**ISDNI**

integrated services digital network (ISDN) interface

**ISDNUP**

ISDN user part

**IT**

inter-toll dialing. *also* inter-toll trunk (IT)

**K entries**

**Keypad Short Hunt Group (KSH)**

A feature that allows calls to hunt from one directory number (DN) to another on the same keypad.

**Key Short Hunt (KSHUNT)**

KSHUNT provides information to operating companies on the use of the Business Set Short Hunt feature. *See also* Business Set Short Hunt.

**KSH**

Keypad Short Hunt Group

**KSHUNT**

Key Short Hunt

**KSMOH**

Key Set Music on Hold

**L entries**

**LCO**

Local Coin Overtime

**LDA**

Long Distance Alert.

**LDAE**

Long Distance Alert Enhancement

**LDS**

Long Distance Signal

**leg**

A communication path from a connection point toward an end-user.

**LEN**

line equipment number

**LIF**

logical interface

**line appearance on a digital trunk public safety answer point (LDTPSAP)**

One of three types of public safety answering points (PSAP), LDTPSAP makes use of line appearance on a digital trunk (LDT) software. It is connected through a trunk interface that receives automatic number identification (ANI), but LDTPSAP appears to the central control (CC) as a hunt group line. *See*

*also* line appearance on a digital trunk (LDT), line-ended PSAP (LINEPSAP), public safety answering point (PSAP).

**line class code (LCC)**

An alphanumeric code that identifies the class of service assigned to a line.

**local primary interexchange carrier (LPIC)**

A feature that allows Subscriber Services subscribers to choose a primary carrier for intra-LATA service. *See also* primary interexchange carrier (PIC).

**Long Distance Alert (LDA)**

A feature that provides end-users with an indication of an incoming call by providing distinctive ringing or distinctive call waiting tones on the called line. The operating company may specify a time-out period within which the called party must respond to the LDA distinctive call waiting tones. If the called party does not respond within that period, the call is routed to the No Terminal Responding (NTRS) treatment. If no time-out is specified, the behavior is the same as the regular call waiting feature. The LDA feature notifies end-users of incoming toll calls in both the on-hook and off-hook conditions. *See also* Long Distance Signal (LDS).

**Long Distance Alert Enhancement (LDAE)**

LDAE enhances the Long Distance Signal (LDS) feature by introducing the following functions: ability to provide LDS as a ring, tone, or a ring and tone line option; ability to specify the duration of the time-out for call waited calls; and the ability to specify whether distinctive alerting is provided when no CallingLineID (CLID) is delivered.

**Long Distance Signal (LDS)**

A feature that provides end-users with distinctive ringing or distinctive call waiting tones on the called line to indicate an incoming toll call. *See also* Long Distance Alert (LDA).

**M entries****M536**

A 36-button add-on module for a Meridian business set.

**Make Busy Key (MBK)**

A feature that creates a Make Busy Key (MBK) line option. When the MBK option is assigned, a scan point circuit, which is controlled by an external key, is associated with the line. The external key is used to activate the MBK line option. The MBK function allows the set, to which MBK is assigned, to appear as if it is busy with respect to call forwarding (CF).

**MAN**

Manual Line (MAN)

**Manual Line (MAN)**

A manual service line option that is similar to the Automatic Line (AUL) feature except that the originator is always connected to the operator. *See also* Automatic Line (AUL).

**MAP command interpreter (MAPCI)**

A CI at the MAP level for accessing maintenance and other functional levels. *See also* command interpreter (CI).

**MBG**

Multilocation Business Group

**MBK**

Make Busy Key (MBK)

**MBSCAMP**

Meridian business set (MBS) Station Camp On

**MCDN**

Message Center Directory Number

**MDE**

message departure element

**MDM**

multiple data message

**MDNNAME**

Multiple Appearance Directory Number (MADN) Member Name Display

**MDR**

message detail recording

**Meet-me Conference (MMC)**

A feature that allows end-users to meet in a conference call by dialing a Meet-me Conference directory number (DN) at an agreed-upon date and time. *See also* Executive Conference (MMCONF150), and Super Conference (CNF30).

**MEMDISP**

directory number (DN) network attribute Multiple Appearance Directory Number (MADN) Member Display option

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**Meridian ACD (MACD) with CompuCALL options**

An application that allows the concurrent delivery of voice calls and data from the user's host computer to an answering automatic call distribution system (ACD) agent.

**message parameters**

Parameters that are within a message. Each message type has its own set of mandatory and optional parameters.

**message switch (MS)**

A high-capacity communications facility that functions as the messaging hub of the dual-plane combined core (DPCC) of a DMS SuperNode processor. The MS controls messaging between the DMS-bus components by concentrating and distributing messages and by allowing other DMS-STP components to communicate directly with each other.

**message waiting query (MWQRY) key**

The message waiting query key on an electronic business set (EBS).

**MF**

multifrequency

**MLAMP**

Multiple Appearance Directory Number Lamp

**MLH**

Multiline Hunt

**MLHG**

Multiline Hunt Group

**MLVP**

Multiline Variety Package

**MMC**

Meet-me Conference

**MMCONF150**

Executive Conference

**MPB**

Multiparty Bridge

**MPH**

Multiple Position Hunt

**MREL**

Multiple Appearance Directory Number Release

**MRF**

Multiple Appearance Directory Number (MADN) Ring Forward

**MSBI**

Make Set Busy Intragroup

**MSC**

message sequence chart

**MULTICFA**

Multiple Call Forwarding for Call Forwarding Universal (CFU)/Call Forwarding Intragroup (CFI)

**MULTICFB**

Multiple Call Forwarding Busy

**MULTICFD**

Multiple Call Forwarding Don't Answer

**multifrequency (MF)**

A signaling method that makes use of pairs of standard tones to transmit signaling codes, digit pulsing, and coin-control signals. This method is used by interregister signaling on analog trunks. *See also* interregister signaling.

**Multiple Appearance Directory Number Lamp (MLAMP)**

An option that is recommended for Multiple Appearance Directory Number (MADN) groups that need to know when a call is bridged or on hold which makes the call available to other MADN group members. When a call is not bridged, and the MADN group member invokes autohold, the lamp winks to indicate that the call is on hold and any MADN group member can pick up the call.

**Multiple Appearance Directory Number, multiple call arrangement (MADN-MCA)**

A Multiple Appearance Directory Number (MADN) configured so that more than one telephone set can be active simultaneously. *See also* multiple call arrangement (MCA).

**Multiple Appearance Directory Number Release (MREL)**

In a typical Multiple Appearance Directory Number (MADN) Selective Call Acceptance (SCA) call scenario, multiple MADN members are involved in a bridged call with an external party. When the external party disconnects, the MADN members remain in a bridged call. MREL changes this functionality so that when the external party disconnects, the bridge is taken down and the MADN members are automatically disconnected.

**Multiline Hunt (MLH)**

A feature that routes each call to a line in a hunt group by trying each line in a numerical sequence until the call is answered. All calls start at a single directory number (DN), which is known as the pilot. No other lines in the hunt group have DNs.

**Multiway Call**

A set of features that allow a subscriber to set up conference calls. The Multiway Call features supported are Three-way Call (3WC), Super Conference (SUPERCONF), and Executive Conference. *See also* Three-way Calling (3WC), Super Conference (CNF30), and Executive Conference (MMCONF150).

**MUMR**

multi-unit message rate

**MUTE**

Mute feature

**MWIDC**

message waiting indication

**MWQRY**

*See* message waiting query.

**N entries****N11**

A generalization of the dialing codes for special services, such as 411 for information services, 611 for telephone repair services, and 911 for emergency services.

**NAC**

non-area code, network administrative center

**Name and Reason Display (REASDISP)**

A feature that allows a name and reason to be displayed for incoming and outgoing calls on a Meridian business set (MBS) with display. Parties originating a call are able to see the name of the called party. Parties receiving a call are able to see the name of the calling party.

**NANP**

North American Numbering Plan

**NARS**

network access registers

**NBAS**

network-based answering service

**NCRB**

non-call-related base

**NEL**

next event list

**network elements**

Processor-controlled entities of the telecommunications network that primarily provide switching and transport network functions and contain network operations functions. Examples are non-AIN switching systems, digital cross-connect systems, AIN switching systems, and signal transfer points (STP).

**network ring again (NRAG)**

A feature that allows Meridian Digital Centrex (MDC) end-users who encounter a busy anywhere in their customer group to call that station again automatically.

**network service agent (NSA)**

An NSA is an object that is encapsulated by an active service element's (ASE) service agent. An NSA, in turn, encapsulates a network service protocol (NSP) and, within sessions, a remote bearer channel (RBC). An NSA thus provides a focal point for managing network-side signaling and connection functions.

**network service protocol (NSP)**

An NSP is a service protocol object that is encapsulated by a network service agent (NSA).

**network systems**

Processor-controlled entities of the telecommunications network that provide ancillary network functions and contain network operations functions. Examples are service control points (SCP), adjuncts, and intelligent peripherals (IP).

**next event list (NEL)**

A list of requested events associated with an open transaction that is maintained at the switch. The service control point (SCP) or adjunct requests these events using the Request\_Report\_BCM\_Event message. *See also* requested event, and event detection point (EDP).

**NFA**

Network Facility Access

**NFRA**

Speech-activated Intelligent Dialing (SAID) remote access

**Night Service Directory Number (NSDN)**

An option that allows calls to be rerouted either to a predetermined directory number (DN) or to a busy signal when the consoles are unattended.

**NI-2**

national ISDN-2

**No Receiver Off-hook Tone (NOH)**

A feature that prevents a line from receiving a receiver off-hook tone when the line has a permanent signal or partial dial tone.

**Nortel**

*See* Nortel Networks.

**Nortel Networks**

Nortel Networks is a global leader in telephony, data, wireless and wireline solutions for the Internet. (Nortel Networks was previously called Nortel, and Northern Telecom [NT].)

**North American Numbering Plan (NANP)**

A numbering plan for the Public Switched Telephone Networks (PSTN) of the United States, Canada, northern Mexico, and the Caribbean. The plan divides each region into geographical areas. Each geographical area has its own distinctive three-digit area code, and no two telephone subscribers in the same area code will have the same seven-digit telephone number. *See also* numbering plan area (NPA), and public switched telephone network (PSTN).

**Northern Telecom**

*See* Nortel Networks.

**notification**

An event whose detection causes the switch to report the event to the service control point (SCP) or adjunct without halting the call processing. *See also* switch notification message, and request.

**NPASPLIT**

numbering plan area (NPA) split

**NPI**

numbering plan indicator

**NRAG**

network ring again

**NRS**

Network Resource Selector

**NSA**

network service agent

**NSDN**

Night Service Directory Number)

**NT**

*See* Nortel Networks.

**NTNA**

Northern Telecom North America

**NTRS**

No Terminal Responding

**numbering plan indicator (NPI)**

The directory number (DN) for primary rate interface (PRI) trunks that is used to populate the USERID parameter in the format of PUBLIC and TEN-DIGITS.

**NXID**

number exchange identification

**O entries**

**OA**

operations applications

**OAM**

operation, administration, and maintenance

**OBC**

originating basic call

**OBCM**

originating basic call model

**object**

A self-contained module of data and its associated processing.

**object-oriented programming (OOP)**

A programming technology that is more flexible than standard programming. It is a form of modular programming that allows pieces of software to be reused and interchanged between programs.

C++ is becoming the mainstay OOP language, because it combines traditional C programming with object-oriented features.

**object-oriented (OO) technology**

A paradigm that views the world as objects rather than as procedures. Object-oriented analysis (OOA), object-oriented design (OOD), and object-oriented programming (OOP) employ the concepts of encapsulation, classification, and inheritance. *See also* object-oriented programming (OOP).

**OC-1**

optical carrier 1

**OCM**

originating call model. *See* originating basic call model (OBCM).

**off-board processor**

A generic term for a service control point (SCP) or adjunct.

**off-board processor service view (OSV)**

The AIN Essentials off-board processor service view (OSV) contains the behavior for communicating with the generic environment for messaging on the switch. The AIN Essentials OSV establishes a signaling channel, determines the parameters needed to be sent in query messages, creates parameter objects of a signaling message and a protocol-independent set of messages (PRISM), sends messages to signaling channels, receives response messages, validates the response messages received, destroys signaling channels, and passes signaling messages to the AIN Essentials application service element (ASE) for processing. The AIN Essentials OSV encapsulates much of the behavior required to send and receive signaling messages, which allows the AIN Essentials ASE to concentrate on processing responses.

**OFFHKDEL**

off-hook delay (OHD)

**OFS**

overflow register, software

**OHD**

off-hook delay. Also known as OFFHKDEL.

**OHI**

off-hook immediate. Also known as OFFHKIMM.

**OHQ**

off-hook queuing

**OLS**

originating line select

**OLI**

originating line information

**OOS**

out of service

**Open Systems Interconnection (OSI)**

A seven-layered communications protocol of the International Organization for Standardization (ISO) that is intended as a public reference model of a framework that would permit network communications among many dissimilar types of devices. The physical, data link, network, and transport layers of the OSI protocol govern the interactions among the networks that transmit information. The session, presentation, and application layers govern the preparation of information for transmission and the processing of received information for storage or use. In theory, any OSI-compatible devices could use an OSI-compatible network to exchange information.

**operations applications (OA)**

A class of functions that provide provisioning, administration, maintenance, and management capabilities for network elements, network systems, software and services (for example, assessment of service quality over the group of systems and software that support the service). These functions usually reside in operations systems, but they can be assigned to network elements or to network systems based on the decisions of the local exchange carrier (LEC).

**optical carrier 1 (OC-1)**

In the synchronous optical network (SONET), OC-1 specifies the optical form of the basic 51.84-Mbit/s SONET communications channel. *See also* synchronous optical network (SONET), and synchronous transport signal 1 (STS-1).

**originating line information (OLI)**

Information about the calling party's directory number (DN).

**OS**

operations system. *See also* operations applications (OA).

**OSA**

operator system access

<b>OSDN</b>	originating station directory number
<b>OSI</b>	Open Systems Interconnection
<b>OSS</b>	Operator Services System
<b>OSTY</b>	originating station type
<b>OSV</b>	off-board processor service view
<b>out of service (OOS)</b>	An equipment state in which equipment is removed from service either automatically (by the system) or manually (by personnel).
<b>P entries</b>	
<b>passive leg</b>	The leg furthest from the access side of the call. For an originating call portion, the passive leg is the called party. For a terminating call portion, the passive leg is the calling party. There is no access signaling on a passive leg that directly controls the progress of a call. For each passive leg there is an originating basic call model (OBCM) or a terminating basic call model (TBCM) that supports the connection view (CV). <i>See also</i> controlling leg, and leg.
<b>passive service element (PSE)</b>	A passive service element contains the persistent and provisioned data required to support a service. A PSE resides in the resource layer and it is provisioned against a specific resource file.
<b>PBL</b>	Meridian business set (MBS) individual business line
<b>PBM</b>	private branch exchange message rate
<b>PCL</b>	product CM load
<b>PFC</b>	public feature code

**PLP**

Plug Up

**PLS**

prime line select

**Plug Up (PLP)**

A feature that prevents calls from terminating to a specific line.

**PODP**

Public Office Dialing Plan

**point in call (PIC)**

A generic representation of a sequence of switch-based call-processing actions considered essential to establish, maintain, or clear a two-party call. PICs are separated by trigger detection points (TDP) in the basic call model (BCM).

**PRI looparound**

primary rate interface (PRI) looparound

**primary interexchange carrier (PIC)**

A line option that is assigned to a line when a subscriber has selected an inter-LATA carrier to handle toll calls. *See also* local primary interexchange carrier (LPIC).

**private branch exchange message rate (PBM)**

A message register associated with the operational measurements (OM) system that provides peg counts from 0 to 32,767 and then resets automatically to 0.

**private virtual network (PVN)**

A service that allows a customer to have the appearance of a private network with private network features and capabilities. It uses the public switched telephone network (PSTN) to avoid the higher costs of underused private transport facilities and to avoid the higher costs of long distance calls.

**PRL**

Privacy Release

**programmable forward call**

A feature that allows a subscriber to forward calls to a directory number (DN) other than the normal DN. The feature can be enabled or disabled, and the DN of the forwarding location can be set from any remote location. The subscriber dials a special number supplied by the operating company. The subscriber is prompted to enter a personal identification number (PIN) for verification as a legitimate user. Once verified, the subscriber enters the enable/disable request and forwarding DN. If the subscriber is successful, the subscriber is given a

confirmation message; if the subscriber is unsuccessful, the call is disconnected. *See also* call forwarding (CF/CFX).

**PRS**

Problem Resolution System

**PRV**

Multiple Appearance Directory Number (MADN) Privacy

**PSD**

passive service directory

**PSE**

passive service element

**Public Office Dialing Plan (PODP)**

An AIN Essentials trigger that is based on a number in a national numbering plan format.

**PVN**

private virtual network

**Q entries****QTD**

Query Time and Date

**query**

A type of communication message that is sent by the service switching point (SSP) to the service control point (SCP), or adjunct, requesting call-processing instructions. In AIN, the message is contained in a transaction capabilities application part (TCAP) query package. *See also* TCAP package.

**R entries****RAG**

Ring Again

**Random Make Busy (RMB)**

A feature that provides for a miscellaneous scan-point circuit controlled by an external key. The line is made permanently busy when the key is activated and is normal when the key is not activated. The same scan point can be assigned to one, several, or all lines within a hunt group, depending on which lines are made busy. This feature can be assigned in one of the following three types of

hunt groups: Directory Number Hunt (DNH), Multiline Hunt (MLH), or Distributed Line Hunt (DLH).

**RBC**

remote bearer channel

**RDB**

remote database

**REASDISP**

Name and Reason Display

**refinable translation result (FTR)**

A selector used in table IBNXLA that is required if the digit or digits dialed are the access code for the following options and features: bearer capability, dial call waiting, group intercom, loudspeaker paging answerable activation, loudspeaker, Meridian offnet access, network facility explicit access, no modem pool, prefix network resource selector (NRS) default, prefix network resource selector (NRS) outbound, speed calling access code, and voice message exchange.

**remote bearer channel (RBC)**

A remote bearer channel that is allocated by an active service element (ASE) to buffer connection information associated with the user at the far end of an agent interworking protocol (AIP) signaling channel. The RBC is a subclass of a bearer channel and it resides in the server layer.

**Remote Message Register, Signal Distribution Point (RMS)**

A feature assigned when a hardware register is to be incremented at a remote location from the DMS switch.

**request**

An event whose detection causes the switch to halt call processing, report the event to the service control point (SCP) or adjunct, and wait for a response. *See also* notification, and switch request message.

**requested event**

A switch event that has been requested by the service control point (SCP) or adjunct with a Request\_Report\_BCM\_Event message. *See also* event detection point (EDP), and next event list (NEL).

**Residence Enhanced Services (RES)**

Software that provides for the implementation of sophisticated phone services for residential subscribers and small businesses previously serviced on plain ordinary telephone service (POTS) single-line flat rate or single-line message rate lines. Formerly known as Residential Services (RES).

**response package**

A transaction capabilities application part (TCAP) package containing one or more messages sent in response to another TCAP package. The service control point (SCP), or adjunct, can use a response package to instruct the service switching point (SSP) to perform an activity. The SSP can also send response packages. *See also* TCAP package.

**Ring Again (RAG)**

A feature that allows a calling party encountering a busy station to be connected automatically with that station when it becomes available. *See also* Network Ring Again (NRAG).

**RMS**

Remote Message Register, Signal Distribution Point

**RMT**

Remote Message Tool

**RO**

Remote Operation

**RPA**

Repeated Alerting

**RSC**

remote switching center

**RSUS**

Suspend/Request Suspension

**S entries****SAID**

Speech-activated Intelligent Dialing

**SAM**

service alteration manager

**SAP**

service alteration point

**SCMSG**

Standard Call Messenger)

**SCP**

Service Control Point

**SCPAUSE**

speed call pause insertion

**screening**

A telephony function that determines the eligibility to complete a call as dialed based on the class-of-service information associated with the line.

**SCS**

speed calling short list

**SCVAL**

speed call validation

**SDO**

smart data object

**Secondary Multiple Appearance Directory Number Call Forwarding (CFMDN)**

A feature that enables secondary members of a Multiple Appearance Directory Number (MADN) group to activate or deactivate call forwarding (CFW) from their sets. When this feature is activated by a member, the entire key list of the “primary” MADN member is forwarded to the specified directory number (DN).

**Selective Call Messaging (SCM)**

SCM is an enhancement of the Special Delivery Service (SDS). SCM allows the operating company to optionally offer a message delivery service with universal subscription. *See also* Special Delivery Service (SDS).

**service management system (SMS)**

The SMS is an off-line node that performs management functions. It introduces new services and customer profiles to the network. It updates the service control points (SCP) in the network through regular batch updates, thereby ensuring database consistency for customer and service information.

The SMS enables operating companies to provision and administer the SCP, adjunct, and service switching point (SSP).

**service switching point (SSP)**

A switch that is capable of interacting with the Common Channel Signaling No. 7 (CCS7) network databases. The SSP contains hardware to support CCS7 signaling, software to create network database query messages, and software to interpret network database response messages.

**SFC**

specific feature code

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**shared inter-office trunk trigger**

A trigger that allows the identification of advanced intelligent network (AIN) calls based on particular elements of the signaling protocol, whether it is a feature group D (FGD) TR317 ISDN user part (ISUP) or TR394 ISUP.

**SKDISP**

Softkey Transfer

**SLQ**

Single Line Queuing

**smart data object (SDO)**

The smart data objects (SDO) are owned by the root application service element (ASE). Child ASEs can ask for a handle to the SDOs. Once the child ASE has a handle to the object, it can increment and check the counter. This mechanism is analogous to an elaborate history control block/history data block (HCB/HDB).

**SMS-originated call control (SOCC)**

The SOCC provides message congestion control that is similar to automatic call gapping (ACG). However, call control is initiated by the service management system (SMS).

**SN**

send notification

**SNM**

send notification manager

**SNP**

service notification point

**SOC**

software optionality control

**SOD**

stringing of digits

**SONET**

synchronous optical network

**SOR**

Station Origination Restrictions

**SORC**

Station Origination Restrictions Controller

**Special Delivery Service (SDS)**

A feature that provides the caller with the option to invoke message delivery when the called party is busy or does not answer within an office-defined interval. The service is offered only to the subscribed originator and is requested directly from the end office (EO) where the call is originating. The actual voice message delivery is then offered from a Voice Message System (VMS) attached to the operating company's network.

**speed call pause insertion (SCPAUSE)**

An enhancement of the speed calling service that allows subscribers to insert pauses into the signaling digit string as they program a 24-digit maximum speed call number.

**Speed Call User (SCU)**

A feature that allows a subscriber to program a set of call-specified numbers using only one or two digits.

**speed call validation (SCVAL)**

An option assigned to a customer group that allows the call digits programmed in the speed call number to be validated.

**Spontaneous Call Waiting Identification with Disposition (DSCWID)**

A feature that allows the subscriber to receive calling party information during call waiting and provides the subscriber with a set of disposition options to treat incoming calls.

**SPRING**

Subscriber Programmable Ringing for Call Forwarding Remote Access (CFRA) on Residence Enhanced Services (RES)

**SRS**

Suppressed Ringing Service. *See also* Suppressed Ringing Access (SRA).

**SSAC**

Station-specific Authorization Codes

**SSP**

Service Switching Point

**Standard Call Messenger (SCMSG)**

A feature that automatically allows the caller to leave a message for the last party the caller has tried to reach.

**station message waiting (MWT)**

A feature that provides notification to users that a message has been queued against their directory number (DN). The feature permits users to dial an access code to call back the station user or attendant who activated the station

message waiting feature against their DN. MWT also allows the station user to activate station message waiting on another station.

**Station Origination Restrictions (SOR)**

A feature that determines if a call should be restricted. SOR restrictions fall into one of the following four categories: calls permitted based on network class of service (NCOS); only intragroup calls or calls on an exception list are allowed; only calls on the exception list are allowed; and no calls are allowed.

**Station-specific Authorization Codes (SSAC)**

A feature that provides the capability of limiting authorization code use to a specific station. This restriction increases security since the authorization code is linked to the individual's station and cannot be used from just any location.

**stored program control (SPC)**

The control of an automatic switching arrangement in which call processing is determined by a program stored in an alterable memory.

SPC is also the control of a function by sequentially interpreting information stored in a memory whose structure is independent of the function to be performed.

**STR**

Send To Resource

**subscription**

trigger subscription

**subsystem number (SSN)**

The identification of a subsystem located at a Common Channel Signaling No. 7 (CCS7) point code that can supply data.

**Super Conference (CNF30)**

An option that extends the maximum number of conferees on an attendant setup or Meet-me Conference call from 6 to 10 or more (maximum of 30). *See also* Meet-me Conference (MMC), and Executive Conference (MMCONF150).

**Suppressed Ringing Access (SRA)**

A feature that provides the capability to access a telephone company's customer loop without audibly ringing the telephone set(s) on the customer's premises. The SRA feature functionality is provided as part of a networked Suppressed Ringing Service (SRS) whereby a suppressed ringing call can be originated from any point in the network to any customer's line network-wide.

**Suppressed Ringing for Telemetry (UTS)**

A feature, also known as the Utility Telemetry Service (UTS), that allows a utility access to an end-user's line for telemetry data purposes. Connections will only be made when the subscriber's line is idle. There is no disruption to the subscriber's usual activities. No power ringing is applied to the customer's line when a connection is made.

**SUS**

Suspend

**SUS/RSUS**

Suspend/Request Suspension

**Suspend/Request Suspension (SUS/RSUS)**

A feature that is assigned to a directory number (DN) appearance when the customer requests suspension of service. If SUS/RSUS is assigned, it is possible to specify the treatments received by calls that originate from and terminate to the customer line.

**SVCGRP**

Service Group

**SWERR**

software error

**switch notification message**

A switch call-related message that indicates that no service control point (SCP) or adjunct response message should be sent. *See also* switch request message, and notification.

**switch request message**

A switch call-related message that indicates that a service control point (SCP) or adjunct response message is required. *See also* request, and switch notification message.

**synchronous optical network (SONET)**

A standard for optical transport that defines optical carrier levels and their electrically equivalent synchronous transport signals. The SONET standard allows for a multivendor environment, for the positioning of the network for transport of new services, for synchronous networking, and for enhanced operation, administration, and maintenance (OAM).

The SONET standard is built around a 51.84-Mbit/s basic communications channel that is multiplexed upward. SONET network standards incorporate existing 1.544-Mbit/s DS-1 service and 44.6-Mbit/s DS-3 service as subsets of the 51.84-Mbit/s SONET basic channel. *See also* synchronous transport signal 1 (STS-1), and optical carrier 1 (OC-1).

**T entries****T&C**

time and charges

**T1 timer****TAD**

telephone answering device

**TAFAS**

Trunk Answer From Any Station

**TAT**

termination attempt

**TBC**

terminating basic call

**TBCM**

terminating basic call model

**TCAPMON**

transaction capabilities application part monitor

**TCAPNM**

Calling Name Delivery for Meridian Digital Centrex (MDC)

**TCAP package**

AIN service switching point (SSP) messages are passed between the SSP and the service control point (SCP) in transaction capabilities application part (TCAP) components (messages) in TCAP packages. The following TCAP package types are used by the AIN SSP: (1) query (Query with Permission To Release) initiates a transaction; (2) response package terminates a transaction; (3) conversation (Conversation with Permission to Release) maintains a transaction; (4) unidirectional package sends “message not associated with a transaction”; (5) abort package terminates a transaction abnormally.

**TCP/IP**

transmission control protocol/internet protocol

**TDISC**

IP disconnect timer

**TDV**

Toll Diversion

**teen service**

A feature that allows multiple directory numbers (DN) to be assigned to each single-party flat-rate line without the expense of additional line equipment. Different ringing patterns are used for each DN.

**telco**

telephone company

**TERMATT**

Termination Attempt trigger

**TPE**

trigger processing environment

**terminal identifier (TID)**

In DMS software, the TID uniquely identifies any entity on which a call can be originated or terminated. The TID is an identifier for message sources or destinations.

**terminating basic call model (TBCM)**

The type of basic call model (BCM) that represents call-processing logic related to the terminating call portion of a basic call. *See also* basic call model (BCM), call model, and originating basic call model (OBCM).

**Terminating Billing Option—Hunt Groups (TRMBOPT)**

An option that allows an automatic message accounting (AMA) record to be generated for each call that terminates on a member of a hunt group that has TRMBOPT assigned.

**TID**

terminal identifier

**TN**

termination notification

**TNS**

Transit Network Selection

**TPE**

trigger processing environment

**TRA**

Term Resource Available trigger

**translation type (TT)**

Directs a message to the appropriate global title translation (GTT) function, and in some cases provides the context for which the global title (GT) digits are to be interpreted.

**translation verification (TRAVER)**

A diagnostic tool that allows the operating company to access and simulate a telephone call in software and to display the tables and tuples used to establish the lines, trunks, or positions to which a call is routed.

**transmission control protocol/internet protocol (TCP/IP)**

A standard operating and interface protocol for local area networks (LAN) that can use devices from multiple vendors. It was first developed by the United States Defense Department for federal government LANs.

**TRAVER**

See translation verification (TRAVER).

**trigger**

A trigger defines the conditions that must be met for the service switching point (SSP) to send a query to the service control point (SCP), or adjunct. One or more types of triggers can occur at each trigger detection point (TDP).

**trigger criteria**

Trigger criteria defines the conditions used to determine whether a particular call will trigger. A trigger can contain criteria of one or more trigger criteria types. In order for a call to trigger, all trigger criteria must be met. There are three AIN criteria types: (1) Call Type, which specifies what kind of call may trigger; (2) Digits Dialed, which defines specific digits that cause triggering; and (3) Escape Code, which bypasses triggering.

For example, at the Information Analyzed point in a call, there may be a Customized Dialing Plan trigger whose criteria include Call Type and Digits Dialed. The operating company defines the values of Call Type and Digits Dialed.

**triggering**

The process whereby a call indicates that it requires advanced intelligent network (AIN) service(s).

**trigger subscription**

Triggers can be subscribed by the following: individual (line or trunk group), group (customer group), office, and directory number (DN).

**trigger tables**

Trigger tables store information about the advanced intelligent network (AIN) application, triggers, trigger detection points, trigger criteria, transport protocol, and service control point (SCP), or adjunct, routing.

**TRMBOPT**

Terminating Billing Option—Hunt Groups

**Trunk Answer From Any Station (TAFAS)**

An option that allows answering of incoming attendant-seeking calls from any station if all attendant positions are unattended. TAFAS dials an answer code in response to a common audible ringing device such as a bell or a buzzer.

**TSP**

Terminal Service Profile

**TSTRC**

STR-connection timer

**tuple**

A horizontal row in a data table.

**TWW**

two-way wide area telephone service (WATS)

**U entries**

**U3WC**

Usage Sensitive Three-way Calling

**UASE**

utility active service element

**UCDLG**

uniform call distribution (UCD) login key for UCD lines

**UCDNSA**

uniform call distribution (UCD) night service activate

**UCDNSD**

uniform call distribution (UCD) night service deactivate

**UIF**

user interface framework

**unified processor (UP)**

A processor that replaces the master processor (MP), the signaling processor (SP), and the memory cards associated with these processors. This replacement upgrades the remote switching center (RSC) to an ISDN remote switching center (RSCI).

**Universal Access to Call Forwarding (CFXU)**

A feature that provides universal access to call forwarding for telephones with a line class code of RES, RES-1FR, or RES-1MR.

**Universal Voice Messaging (UVM)**

A voice messaging service that is offered universally to residential and small business end-users through simplified dialing. The service is intended to be universal for several types of originating and terminating residential and business customers within an operating company's network.

**UP**

unified processor

**UR**

update request for trigger activation and deactivation

**USA**

user service agent

**Usage Sensitive Three-way Calling (U3WC)**

A feature that provides the Three-way Calling (3WC) feature on a pay-per-use basis. The U3WC user is charged each time the 3WC feature is requested instead of being charged a flat rate that is independent of the number of 3WC activations.

**USD**

utility services directory

**user interface**

The series of commands and responses used by operating company personnel to communicate with the DMS-100 Family switches. Communication takes place through the MAP terminal and other input/output devices (IOD). Formerly known as man-machine interface (MMI) or human-machine interface (HMI).

**user service agent (USA)**

A user service agent is an object that is encapsulated by an active service element's (ASE) service agent. It provides a focal point for managing user-side signaling and connection functions.

<b>UTR</b>	universal tone receiver
<b>UTS</b>	Suppressed Ringing for Telemetry
<b>UVM</b>	Universal Voice Messaging
<b>UWATS</b>	universal wide area telephone service

**V entries**

<b>VAD</b>	voice-activated dialing
<b>VANC</b>	voice-activated network control
<b>VAPN</b>	virtual access to private networks
<b>VDN</b>	virtual directory number
<b>VDU</b>	video display unit
<b>VFGLA</b>	virtual facility group look ahead
<b>VMS</b>	Voice Message System
<b>VNS</b>	Virtual Network Services

**voice-activated dialing (VAD)**

A service that allows a user to dial a call using voice only. VAD is an AIN 0.2 service driver and it may include the following capabilities: (1) speaker-dependent recognition of a name, which may be associated with any string of digits, including a vertical service code or a directory number; (2) speaker-independent recognition of digits. *See also* voice-activated network control (VANC).

**voice-activated network control (VANC)**

A service that allows a user to control the vertical features of a call by speaking a service name, which the network detects using speaker-independent recognition. There are two categories of VANC: initial VANC and extended VANC. *See also* initial voice-activated network control (VANC), extended voice-activated network control (VANC), and voice-activated dialing (VAD).

**VSC**

vertical service code

**W entries****WAN**

wide area network

**wide area network (WAN)**

A large-scale, high-speed communications network used primarily for interconnecting local area networks (LAN) located in different cities or nations. *See also* local area network (LAN).



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DMS-100 Family

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Service Implementation Guide Volume 3 of 3

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