
ISDN Call Forwarding

Contents

[Telcordia GR-853-Documentation Information](#)

Preface	Preface-1
1. Introduction	1-1
1.1 Definition	1-1
1.2 Background	1-1
1.3 High-Level Feature Description	1-4
1.4 Summary of Changes from TR-TSY-000853 to GR-853-CORE	1-6
1.5 Requirements Terminology	1-6
1.6 Requirement Labeling Conventions	1-7
1.6.1 Numbering of Requirement and Related Objects	1-7
1.6.2 Requirement, Conditional Requirement, and Objective Object Identification	1-8
2. User Perspective	2-1
2.1 User At The Base DN	2-1
2.2 User At The Originating DN	2-2
2.3 User At The Remote DN	2-2
3. Feature Requirements	3-1
3.1 Feature Operations	3-1
3.1.1 Main Feature Operations	3-1
3.1.1.1 Circuit-Mode Activation	3-1
3.1.1.2 Circuit-Mode Deactivation	3-11
3.1.1.3 Forwarding a Call	3-15
3.1.1.4 Conditions on Forwarding	3-29
3.1.1.5 Subfeature Construction	3-52
3.1.2 Other Feature Operations	3-58
3.1.3 Release Treatment	3-58
3.1.4 Feature Operation Interworking	3-58
3.1.5 Error Treatment And Abnormal Events	3-62
3.2 Internal Call Processing Controls	3-64
3.2.1 Class of Service/Configuration	3-64
3.2.2 Code Interpretation	3-65
3.2.3 Screening	3-66
3.2.4 Routing	3-75
3.2.4.1 Routing of Call Control Messages	3-76
3.2.4.2 Routing of TCAP Messages	3-76
3.2.4.2.1 Routing TCAP Messages from the Base SPCS	3-76

3.2.4.2.2	Routing TCAP Messages from the Remote SPCS.....	3-77
3.2.5	Charge Treatment Determination.....	3-78
3.2.6	Overload.....	3-78
3.3	Signaling/Message Structure.....	3-78
3.3.1	Customer Signaling/User-Network Interface.....	3-79
3.3.2	SS7 Interface Signaling.....	3-87
3.3.3	Interworking With Other Signaling Systems.....	3-87
3.3.4	Operator Service Signaling.....	3-87
3.4	Administration.....	3-87
3.4.1	Service Changes/Subscription Parameters.....	3-88
3.4.1.1	Parameters Per SPCS.....	3-89
3.4.1.1.1	Timer CF-T1.....	3-89
3.4.1.1.2	Sequential Forwarding Limit.....	3-89
3.4.1.1.3	Continue Existing Treatment Returned To Originating User.....	3-90
3.4.1.1.4	Timer CF-T3.....	3-90
3.4.1.2	Parameters Per Directory Number and Call Type.....	3-90
3.4.1.2.1	Establish Courtesy Call.....	3-90
3.4.1.2.2	Customer Group Parameters.....	3-91
3.4.1.2.3	Reminder Notification Sent to Base DN.....	3-92
3.4.1.2.4	Timer CF-T2.....	3-92
3.4.1.2.5	Multiple Forwarding Limit.....	3-92
3.4.1.2.6	Confirmation Indication.....	3-92
3.4.1.2.7	Redirecting Party Number Presentation.....	3-93
3.4.1.3	Parameters Per DN/CT/TSP.....	3-93
3.4.1.3.1	Restricted Control.....	3-93
3.4.2	Traffic Measurements.....	3-94
3.4.3	Maintenance Measurements.....	3-95
3.4.4	Billing and Comptroller.....	3-96
3.5	Interactions.....	3-96
3.5.1	Additional Call Offering.....	3-96
3.5.2	CLASS SM Feature: Selective Call Rejection.....	3-96
3.5.3	Flexible Calling.....	3-97
3.5.4	ISDN Automatic Callback.....	3-97
3.5.5	ISDN Basic Business Group.....	3-97
3.5.6	ISDN Call Pickup.....	3-98
3.5.7	ISDN Calling Number Identification Services.....	3-98
3.5.8	ISDN Electronic Key Telephone Service.....	3-99
3.5.9	ISDN Multiline Hunt Group.....	3-100
3.5.10	User-To-User Signaling with Call Control.....	3-101
3.6	Limitations And Restrictions.....	3-102
3.7	Timing And Tolerances.....	3-102
Appendix A: SS7 ISDNUP Messages.....		A-1

Appendix B: SS7 ISDNUP Parameters	B-1
B.1 Access Transport Parameter	B-1
B.2 Backward Call Indicators	B-2
B.3 Called Party Number Parameter	B-2
B.4 Calling Party Number Parameter	B-2
B.5 Calling Party's Category	B-2
B.6 Carrier Selection Parameter	B-2
B.7 Cause Indicator Parameter	B-2
B.8 Charge Number Parameter	B-2
B.9 Event Information	B-3
B.10 Forward Call Indicators	B-3
B.11 Generic Address Parameter	B-3
B.12 Message Type Parameter	B-3
B.13 Nature of Connections Indicators Parameter	B-3
B.13.1 Notification Indicator Parameter*	B-3
B.14 Optional Backward Call Indicators Parameter	B-4
B.15 Original Called Number Parameter	B-4
B.16 Originating Line Information Parameter	B-7
B.17 Redirecting Number Parameter	B-7
B.18 Redirection Information Parameter*	B-7
B.19 Service Code Parameter	B-8
B.20 Transit Network Selection Parameter	B-8
B.21 User Service Information	B-8
Appendix C: SS7 SCCP Formats	C-1
Appendix D: SS7 TCAP Messages	D-1
Appendix E: SS7 TCAP Parameters	E-1
E.1 Bearer Capability Requested	E-1
E.2 Bearer Capability Supported	E-3
E.3 DN to Line Service Type Mapping	E-4
E.4 Error Codes	E-5
E.5 Terminating Restrictions	E-6
E.6 Signaling Networks Identifier	E-7
E.7 Digits	E-7
References	References-1
Glossary	Glossary-1

List of Tables

Table 1-1.	Subfeature Construction for I-CFV, I-CFDA and I-CFIB	1-6
Table 3-1.	Mapping of I-CF Subfeature to SS7 Coding of Original Redirecting/ Redirecting Reason.....	3-19
Table 3-2.	Mapping of I-CF Subfeature to SS7 Coding of Event Indicator	3-21
Table 3-3.	Events Following Sending IAM to Remote SPCS	3-37
Table 3-4.	Events Following Sending SETUP to Remote DN	3-40
Table 3-5.	Events Following Sending IAM to Remote SPCS	3-46
Table 3-6.	Subfeature Construction for I-CFV	3-53
Table 3-7.	Subfeature Construction for I-CFIB	3-54
Table 3-8.	Subfeature Construction for I-CFDA	3-54
Table 3-9.	Subfeature Construction for I-CFVCG Where DN is Outside the Customer Group.....	3-55
Table 3-10.	Subfeature Construction for I-CFVCG Where DN is Within the Customer Group.....	3-55
Table 3-11.	Subfeature Construction for I-CFPF.....	3-57
Table 3-12.	Subfeature Construction for I-CFIG.....	3-57
Table 3-13.	I-CF Activation Request During Call Establishment	3-79
Table 3-14.	I-CF Subfeature Information	3-80
Table 3-15.	Sending the SETUP ACKnowledge Message To the Base User	3-81
Table 3-16.	Request for Remote DN Information, or Status of Subfeature.....	3-81
Table 3-17.	Indication of Courtesy Call Establishment.....	3-82
Table 3-18.	Answer of Courtesy Call	3-83
Table 3-19.	First Message Clearing Subfeature Request During Call Establishment.....	3-83
Table 3-20.	Reminder Notification	3-84
Table 3-21.	Call Establishment at Remote DN	3-85
Table A-1.	Address Complete Message.....	A-1
Table A-2.	Answer Message	A-2
Table A-3.	Call Progress Message.....	A-2
Table A-4.	Initial Address Message.....	A-2
Table A-5.	Release Message	A-3
Table A-6.	Release Complete Message	A-3
Table B-1.	Access Transport Parameter	B-1
Table B-2.	Notification Indicator	B-3
Table B-3.	Original Called Number Parameter	B-4
Table B-4.	Redirection Information Parameter	B-7
Table D-1.	Formats of the SS7 TCAP Messages.....	D-1
Table D-2.	TCAP Information for Response to Query with Return Result (Last) Component.....	D-6
Table D-3.	TCAP Information for Response to Query with Return Error Component	D-10

Table D-4. TCAP Information for Response to QUery with Reject Component.... D-12
Table D-5. TCAP Unidirectional with Reject Component..... D-14