SLOVENSKI STANDARD
SIST ETS 300 599 E5:2003

01-december-2003

Digitalni celiļ ni telekomunikacijski sistem (faza 2) ï Specifikacija dela za mobilne aplikacije (MAP) (GSM 09.02)

Digital cellular telecommunications system (Phase 2) (GSM); Mobile Application Part (MAP) specification (GSM 09.02)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ETS 300 599 Edition 5

SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a85198d072/sist-ets-300-599-e5-2003

ICS:

33.070.50	Globalni sistem za mobilno telekomunikacijo (GSM)	Global System for Mobile Communication (GSM)

SIST ETS 300 599 E5:2003 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST ETS 300 599 E5:2003

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a85198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 599

May 1997

Fifth Edition

Source: ETSI TC-SMG

Reference: RE/SMG-030902PR5

ICS: 33.020

Key words: Digital cellular telecommunications system, Global System for Mobile communications (GSM)

GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Digital cellular telecommunications system (Phase 2); Mobile Application Part (MAP) specification (GSM 09.02)

iTeh STANDARD PREVIEW
(standards.iteh.ai)
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1997. All rights reserved.

SIST ETS 300 599 E5:2003

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a85198d072/sist-ets-300-599-e5-2003

Whilst every care has been taken in the preparation and publication of this document, errors in content, typographical or otherwise, may occur. If you have comments concerning its accuracy, please write to "ETSI Editing and Committee Support Dept." at the address shown on the title page.

SIST ETS 300 599 E5:2003

Contents

Foreword 19

1 Scope....21
1.1 Normative references....21
1.2 Abbreviations 27

2 Configuration of the mobile network 27
2.1 The entities of the mobile system....27
2.1.1 The Home Location Register (HLR)....27
2.1.2 The Visitor Location Register (VLR) 27
2.1.3 The Mobile-services Switching Centre (MSC) 28
2.1.4 The Base Station System (BSS) 28
2.1.5 The Gateway MSC (GMSC)....28
2.1.6 The SMS Gateway MSC....28
2.1.7 The SMS Interworking MSC 28
2.1.8 The Equipment Identity Register (EIR) 28
2.2 Configuration of a Public Land Mobile Network (PLMN) 28
2.3 Interconnection between PLMNs....29
2.4 The interfaces within the mobile service....29
2.4.1 Interface between the HLR and the VLR (D-interface) 29
2.4.2 [Spare]....29
2.4.3 Interface between the VLR and its associated MSC(s) (B-interface)....29
2.4.4 Interface between VLRs (G-interface)....29
2.4.5 Interface between the HLR and the MSC (C-interface) 29
2.4.6 Interface between MSCs (E-interface) 30
2.4.7 Interface between the MSC and Base Station Systems (A-interface)....30
2.4.8 Interface between MSC and EIR (F-interface) 30
2.5 Splitting of the data storage 30

3 Overload and compatibility overview....32
3.1 Overload control....32
3.1.1 Overload control for MSC (outside MAP)....32
3.1.2 Overload control for MAP entities 32
3.1.3 Congestion control for Signalling System No. 7 35
3.2 Compatibility 35
3.2.1 General 35
3.2.2 Strategy for selecting the Application Context (AC) version 35
3.2.2.1 Proposed method 35
3.2.2.2 Managing the version look-up table....36
3.2.2.3 Optimizing the method....37

4 Requirements concerning the use of SCCP and TC 38
4.1 Use of SCCP 38
4.1.1 SCCP Class....38
4.1.2 Sub-System Number (SSN)....38
4.1.3 SCCP addressing 38
4.1.3.1 Introduction 38
4.1.3.2 The Mobile-services Switching Centre (MSC)....40
4.1.3.2.1 MSC interaction during handover....40
4.1.3.2.2 MSC for short message routing 40
4.1.3.3 The Home Location Register (HLR) 40
4.1.3.3.1 During call set-up....40
4.1.3.3.2 Before location updating completion 40
4.1.3.3.3 After location updating completion....41

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c9486f-8b64-440a-a1c3-a3a85198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

4.1.3.3.4 VLR restoration 41
4.1.3.4 The Visitor Location Register (VLR) 41
4.1.3.4.1 Inter-VLR information retrieval 41
4.1.3.4.2 HLR request 42
4.1.3.5 The Interworking MSC (IWMSC) for Short Message Service 42
4.1.3.6 The Equipment Identity Register (EIR) 42
4.1.3.7 Summary table 43
4.2 Use of TC 44

5 General on MAP services 46
5.1 Terminology and definitions 46
5.2 Modelling principles 46
5.3 Common MAP services 47
5.3.1 MAP-OPEN service 48
5.3.2 MAP-CLOSE service 50
5.3.3 MAP-DELIMITER service 50
5.3.4 MAP-U-ABORT service 51
5.3.5 MAP-P-ABORT service 52
5.3.6 MAP-NOTICE service 54
5.4 Sequencing of services 54
5.5 General rules for mapping of services onto TC 56
5.5.1 Mapping of common services 56
5.5.2 Mapping of user specific services 58
5.6 Definition of parameters 58
5.6.1 Common parameters 60
5.6.1.1 Invoke Id 60
5.6.1.2 Linked Id 60
5.6.1.3 Provider error 60
5.6.1.4 User error 60
5.6.2 Numbering and identification parameter 64
5.6.2.1 IMSI 64
5.6.2.2 TMSI 64
5.6.2.3 IMEI 64
5.6.2.4 Previous location area Id 64
5.6.2.5 Stored location area Id 64
5.6.2.6 Current location area Id 64
5.6.2.7 Target location area Id 64
5.6.2.8 Target cell Id 64
5.6.2.9 [Spare] 64
5.6.2.10 Originating entity number 64
5.6.2.11 MSC number 64
5.6.2.12 Target MSC number 64
5.6.2.13 HLR number 64
5.6.2.14 VLR number 65
5.6.2.15 HLR Id 65
5.6.2.16 LMSI 65
5.6.2.17 MS ISDN 65
5.6.2.18 OMC Id 65
5.6.2.19 Roaming number 65
5.6.2.20 [Spare] 65
5.6.2.21 Handover number 65
5.6.2.22 Forwarded-to number 65
5.6.2.23 Forwarded-to subaddress 65
5.6.2.24 Called number 65
5.6.2.25 Calling number 65
5.6.2.26 Originally dialled number 66
5.6.2.27 Service centre address 66
5.6.2.28 Zone Code 66
5.6.2.29 MSIsdn-Alert 66

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a851984072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

5.6.3 Subscriber management parameters....66
5.6.3.1 Category....66
5.6.3.2 Equipment status....66
5.6.3.3 Bearer service....66
5.6.3.4 Teleservice....66
5.6.3.5 Basic Service Group....66
5.6.3.6 GSM bearer capability....66
5.6.3.7 Subscriber Status....66
5.6.3.8 CUG Outgoing Access indicator....67
5.6.3.9 Operator Determined Barring General Data....67
5.6.3.10 ODB HPLMN Specific Data....67
5.6.3.11 Regional Subscription Data....67
5.6.3.12 Regional Subscription Response....67
5.6.3.13 Roaming Restriction Due To Unsupported Feature....67
5.6.4 Supplementary services parameters....68
5.6.4.1 SS-Code....68
5.6.4.2 SS-Status....68
5.6.4.3 SS-Data....68
5.6.4.4 Override Category....68
5.6.4.5 CLI Restriction Option....69
5.6.4.6 Forwarding Options....69
5.6.4.7 No reply condition timer....69
5.6.4.8 CUG info....69
5.6.4.9 CUG subscription....69
5.6.4.10 CUG interlock....69
5.6.4.11 CUG index....69
5.6.4.12 CUG feature....70
5.6.4.13 Inter CUG options....70
5.6.4.14 Intra CUG restrictions....70
5.6.4.15 Forwarding information....70
5.6.4.16 Forwarding feature....71
5.6.4.17 Forwarding data....71
5.6.4.18 Call barring information....71
5.6.4.19 Call barring feature....71
5.6.4.20 New password....71
5.6.4.21 Current password....71
5.6.4.22 Guidance information....72
5.6.4.23 [Spare]....72
5.6.4.24 SS-Info....72
5.6.4.25 - 5.6.4.35 [Spare]....72
5.6.4.36 USSD Data Coding Scheme....72
5.6.4.37 USSD String....72
5.6.5 Call parameters....73
5.6.5.1 Call reference....73
5.6.6 Radio parameters....73
5.6.6.1 - 5.6.6.6 [Spare]....73
5.6.6.7 HO-Number Not Required....73
5.6.7 Authentication parameters....73
5.6.7.1 Authentication set list....73
5.6.7.2 Rand....73
5.6.7.3 Sres....73
5.6.7.4 Kc....73
5.6.7.5 [Spare]....73
5.6.7.6 Cksn....73
5.6.7.7 Ciphering mode....73
5.6.8 Short message parameters....74
5.6.8.1 SM-RP-DA....74
5.6.8.2 SM-RP-OA....74
5.6.8.3 MWD status....74
5.6.8.4 SM-RP-UI....74

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c04860-8b64-4f0a-afc3-e3a851d8d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

5.6.8.5 SM-RP-PRI 74
5.6.8.6 SM Delivery Outcome 74
5.6.8.7 More Messages To Send 74
5.6.8.8 Alert Reason 75
5.6.9 Access and signalling system related parameters 75
5.6.9.1 BSS-apdu 75
5.6.9.2 CM service type 75
5.6.9.3 Access connection status 75
5.6.9.4 External Signal Information 75
5.6.9.5 Access signalling information 75
5.6.9.6 Location update type 75
5.6.9.7 Protocol ID 76
5.6.9.8 Network signal information 76
5.6.10 System operations parameters 77
5.6.10.1 Network resources 77
5.6.10.2 Trace reference 77
5.6.10.3 Trace type 77
5.7 Representation of a list of a basic parameter in service-primitives 77

6 Mobility services 78
6.1 Location management services 78
6.1.1 MAP_UPDATE_LOCATION_AREA service 78
6.1.1.1 Definition 78
6.1.1.2 Service primitives 78
6.1.1.3 parameter definitions and use 78
6.1.2 MAP_UPDATE_LOCATION service 80
6.1.2.1 Definition 80
6.1.2.2 Service primitives 80
6.1.2.3 Parameter definitions and use 80
6.1.3 MAP_CANCEL_LOCATION service 82
6.1.3.1 Definition 82
6.1.3.2 Service primitives 82
6.1.3.3 Parameter definitions and use 82
6.1.4 MAP_SEND_IDENTIFICATION service 83
6.1.4.1 Definition 83
6.1.4.2 Service primitives 83
6.1.4.3 Parameter definitions and use 83
6.1.5 MAP_DETACH_IMSI service 84
6.1.5.1 Definition 84
6.1.5.2 Service primitives 84
6.1.5.3 Parameter definitions and use 84
6.1.6 MAP_PURGE_MS service 85
6.1.6.1 Definition 85
6.1.6.2 Service primitives 85
6.1.6.3 Parameter definitions and use 85
6.2 Paging and search 86
6.2.1 MAP_PAGE service 86
6.2.1.1 Definition 86
6.2.1.2 Service primitives 86
6.2.1.3 Parameter definitions and use 86
6.2.2 MAP_SEARCH_FOR_MS service 88
6.2.2.1 Definition 88
6.2.2.2 Service primitives 88
6.2.2.3 Parameter definitions and use 88
6.3 Access management services 89
6.3.1 MAP_PROCESS_ACCESS_REQUEST service 89
6.3.1.1 Definition 89
6.3.1.2 Service primitives 89
6.3.1.3 Parameter definitions and use 89
6.4 Handover services 91

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-3a85108d072a/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

6.4.1 MAP_PREPARE_HANDOVER service 91
6.4.1.1 Definition 91
6.4.1.2 Service primitives 91
6.4.1.3 Parameter use 91
6.4.2 MAP_SEND_END_SIGNAL service 93
6.4.2.1 Definition 93
6.4.2.2 Service primitives 93
6.4.2.3 Parameter use 93
6.4.3 MAP_PROCESS_ACCESS_SIGNALLING service 94
6.4.3.1 Definition 94
6.4.3.2 Service primitives 94
6.4.3.3 Parameter use 94
6.4.4 MAP_FORWARD_ACCESS_SIGNALLING service 95
6.4.4.1 Definition 95
6.4.4.2 Service primitives 95
6.4.4.3 Parameter use 95
6.4.5 MAP_PREPARE_SUBSEQUENT_HANDOVER service 96
6.4.5.1 Definition 96
6.4.5.2 Service primitives 96
6.4.5.3 Parameter use 96
6.4.6 MAP_ALLOCATE_HANDOVER_NUMBER service 97
6.4.6.1 Definition 97
6.4.6.2 Service primitives 97
6.4.6.3 Parameter use 97
6.4.7 MAP_SEND_HANDOVER_REPORT service 98
6.4.7.1 Definition 98
6.4.7.2 Service primitives 98
6.4.7.3 Parameter use 98
6.5 Authentication management services 99
6.5.1 MAP_AUTHENTICATE service 99
6.5.1.1 Definition 99
6.5.1.2 Service primitives 99
6.5.1.3 Parameter use 99
6.5.2 MAP_SEND_AUTHENTICATION_INFO service 100
6.5.2.1 Definition 100
6.5.2.2 Service primitives 100
6.5.2.3 Parameter use 100
6.6 Security management services 101
6.6.1 MAP_SET_CIPHERING_MODE service 101
6.6.1.1 Definitions 101
6.6.1.2 Service primitives 101
6.6.1.3 Parameter use 101
6.7 International mobile equipment identities management services 102
6.7.1 MAP_CHECK_IMEI service 102
6.7.1.1 Definition 102
6.7.1.2 Service primitives 102
6.7.1.3 Parameter use 102
6.7.2 MAP_OBTAIN_IMEI service 104
6.7.2.1 Definition 104
6.7.2.2 Service primitives 104
6.7.2.3 Parameter use 104
6.8 Subscriber management services 105
6.8.1 MAP-INSERT-SUBSCRIBER-DATA service 105
6.8.1.1 Definition 105
6.8.1.2 Service primitives 105
6.8.1.3 Parameter use 106
6.8.1.4 Basic service information related to supplementary services 111
6.8.2 MAP-DELETE-SUBSCRIBER-DATA service 112
6.8.2.1 Definition 112

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-e3e85108d972/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

6.8.2.2 Service primitives 112
6.8.2.3 Parameter use 112
6.9 Identity management services 114
6.9.1 MAP-PROVIDE-IMSI service 114
6.9.1.1 Definition 114
6.9.1.2 Service primitives 114
6.9.1.3 Parameter use 114
6.9.2 MAP-FORWARD-NEW-TMSI service 115
6.9.2.1 Definition 115
6.9.2.2 Service primitives 115
6.9.2.3 Parameter use 115
6.10 Fault recovery services 116
6.10.1 MAP_RESET service 116
6.10.1.1 Definition 116
6.10.1.2 Service primitives 116
6.10.1.3 Parameter definition and use 116
6.10.2 MAP_FORWARD_CHECK_SS_INDICATION service 117
6.10.2.1 Definition 117
6.10.2.2 Service primitives 117
6.10.2.3 Parameter definition and use 117
6.10.3 MAP_RESTORE_DATA service 118
6.10.3.1 Definition 118
6.10.3.2 Service primitives 118
6.10.3.3 Parameter definitions and use 118

7 Operation and maintenance services 120
7.1 Subscriber tracing services 120
7.1.1 MAP-ACTIVATE-TRACE-MODE service 120
7.1.1.1 Definition 120
7.1.1.2 Service primitives 120
7.1.1.3 Parameter use 120
7.1.2 MAP-DEACTIVATE-TRACE-MODE service 122
7.1.2.1 Definition 122
7.1.2.2 Service primitives 122
7.1.2.3 Parameter use 122
7.1.3 MAP-TRACE-SUBSCRIBER-ACTIVITY service 123
7.1.3.1 Definition 123
7.1.3.2 Service primitives 123
7.1.3.3 Parameter use 123
7.2 Other operation and maintenance services 124
7.2.1 MAP-SEND-IMSI service 124
7.2.1.1 Definition 124
7.2.1.2 Service primitives 124
7.2.1.3 Parameter use 124

8 Call handling services 125
8.1 MAP_SEND_INFO_FOR_INCOMING_CALL service 125
8.1.1 Definition 125
8.1.2 Service primitives 125
8.1.3 Parameter use 125
8.2 MAP_SEND_INFO_FOR_OUTGOING_CALL service 128
8.2.1 Definition 128
8.2.2 Service primitives 128
8.2.3 Parameter use 128
8.3 MAP_SEND_ROUTING_INFORMATION service 130
8.3.1 Definition 130
8.3.2 Service primitives 130
8.3.3 Parameter use 130
8.4 MAP_PROVIDE_ROAMING_NUMBER service 133
8.4.1 Definition 133

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a851198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

8.4.2 Service primitives 133
8.4.3 Parameter use 133
8.5 MAP_COMPLETE_CALL service 135
8.5.1 Definition 135
8.5.2 Service primitives 135
8.5.3 Parameter use 135
8.6 MAP_PROCESS_CALL_WAITING service 137
8.6.1 Definition 137
8.6.2 Service primitives 137
8.6.3 Parameter use 137

9 Supplementary services related services 139
9.1 MAP_REGISTER_SS service 139
9.1.1 Definition 139
9.1.2 Service primitives 139
9.1.3 Parameter use 139
9.2 MAP_ERASE_SS service 141
9.2.1 Definition 141
9.2.2 Service primitives 141
9.2.3 Parameter use 141
9.3 MAP_ACTIVATE_SS service 143
9.3.1 Definition 143
9.3.2 Service primitives 143
9.3.3 Parameter use 143
9.4 MAP_DEACTIVATE_SS service 145
9.4.1 Definitions 145
9.4.2 Service primitives 145
9.4.3 Parameter use 145
9.5 MAP_INTERROGATE_SS service 147
9.5.1 Definitions 147
9.5.2 Service primitives 147
9.5.3 Parameter use 147
9.6 MAP_INVOKE_SS service 149
9.6.1 Definitions 149
9.6.2 Service primitives 149
9.6.3 Parameter use 149
9.7 MAP_REGISTER_PASSWORD service 150
9.7.1 Definitions 150
9.7.2 Service primitives 150
9.7.3 Parameter use 150
9.8 MAP_GET_PASSWORD service 151
9.8.1 Definitions 151
9.8.2 Service primitives 151
9.8.3 Parameter use 151
9.9 MAP_PROCESS_UNSTRUCTURED_SS_REQUEST service 152
9.9.1 Definitions 152
9.9.2 Service primitives 152
9.9.3 Parameter use 152
9.10 MAP_UNSTRUCTURED_SS_REQUEST service 154
9.10.1 Definitions 154
9.10.2 Service primitives 154
9.10.3 Parameter use 154
9.11 MAP_UNSTRUCTURED_SS_NOTIFY service 156
9.11.1 Definitions 156
9.11.2 Service primitives 156
9.11.3 Parameter use 156

10 Short message service management services 158
10.1 MAP-SEND-ROUTING-INFO-FOR-SM service 158
10.1.1 Definition 158

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-2a85198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

10.1.2 Service primitives....158
10.1.3 Parameter use....158
10.2 MAP-FORWARD-SHORT-MESSAGE service....160
10.2.1 Definition....160
10.2.2 Service primitives....160
10.2.3 Parameter use....160
10.3 MAP-REPORT-SM-DELIVERY-STATUS service....162
10.3.1 Definition....162
10.3.2 Service primitives....162
10.3.3 Parameter use....162
10.4 MAP-READY-FOR-SM service....164
10.4.1 Definition....164
10.4.2 Service primitives....164
10.4.3 Parameter use....164
10.5 MAP-ALERT-SERVICE-CENTRE service....166
10.5.1 Definition....166
10.5.2 Service primitives....166
10.5.3 Parameter use....166
10.6 MAP-INFORM-SERVICE-CENTRE service....167
10.6.1 Definition....167
10.6.2 Service primitives....167
10.6.3 Parameter use....167
10.7 MAP-SEND-INFO-FOR-MT-SMS service....168
10.7.1 Definition....168
10.7.2 Service primitives....168
10.7.3 Parameter use....168
10.8 MAP-SEND-INFO-FOR-MO-SMS service....169
10.8.1 Definition....169
10.8.2 Service primitives....169
10.8.3 Parameter use....169

11 General....170
11.1 Overview....170
11.2 Underlying services....170
11.3 Model....170
11.4 Conventions....170

12 Elements of procedure....171
12.1 Dialogue establishment....171
12.1.1 Receipt of a MAP-OPEN request primitive....171
12.1.2 Receipt of a TC-BEGIN indication....172
12.1.3 Receipt of a MAP-OPEN response....175
12.1.4 Receipt of the first TC-CONTINUE ind....175
12.1.5 Receipt of a TC-END ind....175
12.1.6 Receipt of a TC-U-ABORT ind....176
12.1.7 Receipt of a TC-P-ABORT ind....176
12.2 Dialogue continuation....176
12.2.1 Sending entity....176
12.2.2 Receiving entity....176
12.3 Dialogue termination....177
12.3.1 Receipt of a MAP-CLOSE request....177
12.3.2 Receipt of a TC-END indication....177
12.4 User Abort....177
12.4.1 MAP-U-ABORT request....177
12.4.2 TC-U-ABORT ind....177
12.5 Provider Abort....178
12.5.1 MAP PM error situation....178
12.5.2 TC-P-ABORT ind....178
12.5.3 TC-U-ABORT ind....178
12.6 Procedures for MAP specific services....178

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0a-afc3-a3a85198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

12.6.1 Service invocation 179
12.6.2 Service invocation receipt 179
12.6.3 Service response 180
12.6.4 Receipt of a response 181
12.6.4.1 Receipt of a TC-RESULT-NL indication 181
12.6.4.2 Receipt of a TC-RESULT-L indication 181
12.6.4.3 Receipt of a TC-U-ERROR indication 182
12.6.4.4 Receipt of a TC-INVOKE indication 182
12.6.4.5 Receipt of a TC-U-REJECT indication 183
12.6.4.6 Receipt of a TC-L-REJECT indication 183
12.6.4.7 Receipt of a TC-L-CANCEL indication 183
12.6.5 Other events 184
12.6.5.1 Receipt of a TC-U-REJECT 184
12.6.5.2 Receipt of a TC-R-REJECT indication 184
12.6.5.3 Receipt of a TC-L-REJECT indication 184
12.6.6 Parameter checks 185
12.6.7 Returning state machines to idle 185
12.6.8 Load control 185

13 Mapping on to TC services 186
13.1 Dialogue control 186
13.1.1 Directly mapped parameters 186
13.1.2 Use of other parameters of dialogue handling primitives 186
13.1.2.1 Dialogue Id 186
13.1.2.2 Application-context-name 186
13.1.2.3 User information 186
13.1.2.4 Component present 186
13.1.2.5 Termination 186
13.1.2.6 P-Abort-Cause 186
13.1.2.7 Quality of service 187
13.2 Service specific procedures 187
13.2.1 Directly mapped parameters 187
13.2.2 Use of other parameters of component handling primitives 187
13.2.2.1 Dialogue Id 187
13.2.2.2 Class 187
13.2.2.3 Linked Id 188
13.2.2.4 Operation 188
13.2.2.5 Error 190
13.2.2.6 Parameters 190
13.2.2.7 Time out 190
13.2.2.8 Last component 190
13.2.2.9 Problem code 191
13.2.2.9.1 Mapping to MAP User Error 191
13.2.2.9.2 Mapping to MAP Provider Error parameter 191
13.2.2.9.3 Mapping to diagnostic parameter 192
13.3 SDL descriptions 193

14 Abstract syntax of the MAP protocol 220
14.1 General 220
14.1.1 Encoding rules 220
14.1.2 Use of TC 221
14.1.3 Use of information elements defined outside MAP 221
14.1.4 Compatibility considerations 222
14.1.5 Structure of the Abstract Syntax of MAP 223
14.2 Operation packages 225
14.2.1 General aspects 225
14.2.2 Packages specifications 226
14.2.2.1 Location updating 226
14.2.2.2 Location cancellation 226

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c94860-8b64-4f0e-af53-c3e851198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

14.2.2.3 Roaming number enquiry 226
14.2.2.4 Information retrieval....227
14.2.2.5 Inter-VLR information retrieval....227
14.2.2.6 IMSI retrieval....227
14.2.2.7 - 14.2.2.9 [spare] 227
14.2.2.10 Interrogation 227
14.2.2.11 [spare] 227
14.2.2.12 Handover Control 228
14.2.2.13 Subscriber Data management stand alone 228
14.2.2.14 Equipment management 228
14.2.2.15 Subscriber data management....229
14.2.2.16 Location register restart 229
14.2.2.17 Tracing stand-alone....229
14.2.2.18 Functional SS handling....229
14.2.2.19 Tracing....230
14.2.2.20 Binding....230
14.2.2.21 Unstructured SS handling....230
14.2.2.22 Short message relay services 231
14.2.2.23 Short message gateway services....231
14.2.2.24 - 14.2.2.25 [spare]....231
14.2.2.26 Message waiting data management....231
14.2.2.27 Alerting....232
14.2.2.28 Data restoration 232
14.2.2.29 Purging....232
14.3 Application contexts 233
14.3.1 General aspects 233
14.3.2 Access-context definitions 234
14.3.2.1 [spare] 234
14.3.2.2 Location Updating....234
14.3.2.3 Location Cancellation....234
14.3.2.4 Roaming number enquiry 235
14.3.2.5 [spare] 235
14.3.2.6 Location Information Retrieval 235
14.3.2.7 - 14.3.2.10 [spare]....235
14.3.2.11 Location registers restart....235
14.3.2.12 Handover control....236
14.3.2.13 IMSI Retrieval....236
14.3.2.14 Equipment Management 236
14.3.2.15 Information retrieval....236
14.3.2.16 Inter-VLR information retrieval....237
14.3.2.17 Stand Alone Subscriber Data Management 237
14.3.2.18 Tracing....237
14.3.2.19 Network functional SS handling....238
14.3.2.20 Network unstructured SS handling 238
14.3.2.21 Short Message Gateway....238
14.3.2.22 Mobile originating Short Message Relay 239
14.3.2.23 [spare] 239
14.3.2.24 Short message alert....239
14.3.2.25 Short message waiting data management....239
14.3.2.26 Mobile terminating Short Message Relay 240
14.3.2.27 MS purging....240
14.3.3 ASN.1 Module for application-context-names 240
14.4 MAP Dialogue Information....244
14.5 MAP operation and error codes....246
14.6 MAP operation and error types....252
14.6.1 Mobile Service Operations....252
14.6.2 Operation and Maintenance Operations....258
14.6.3 Call Handling Operations 260
14.6.4 Supplementary service operations....262
14.6.5 Short message service operations 267

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68e94860-8b64-4f0a-afc3-a3a85198d072/sist-ets-300-599-e5-2003

SIST ETS 300 599 E5:2003

14.6.6 Errors 270
14.7 MAP constants and data types 274
14.7.1 Mobile Service data types 274
14.7.2 Operation and maintenance data types 280
14.7.3 Call handling data types 282
14.7.4 Supplementary service data types 284
14.7.5 Supplementary service codes 289
14.7.6 Short message data types 292
14.7.7 Error data types 294
14.7.8 Common data types 296
14.7.9 Teleservice Codes 301
14.7.10 Bearer Service Codes 303

15 General on MAP user procedures 305
15.1 Introduction 305
15.2 Common aspects of user procedure descriptions 305
15.2.1 General conventions 305
15.2.2 Naming conventions 305
15.2.3 Convention on primitives parameters 307
15.2.3.1 Open service 307
15.2.3.2 Close service 307
15.2.4 Version handling at dialogue establishment 307
15.2.4.1 Behaviour at the initiating side 307
15.2.4.2 Behaviour at the responding side 307
15.2.5 Abort Handling 308
15.2.6 SDL conventions 308
15.3 Interaction between MAP Provider and MAP Users 308

16 Mobility procedures 309
16.1 Location management Procedures 309
16.1.1 Location updating 314
16.1.1.1 General 314
16.1.1.2 Detailed procedure in the MSC 318
16.1.1.3 Detailed procedure in the VLR 322
16.1.1.4 Detailed procedure in the HLR 335
16.1.1.5 Send Identification 338
16.1.1.5.1 General 338
16.1.1.5.2 Detailed procedure in the VLR 338
16.1.1.5.3 Detailed procedure in the PVLR 338
16.1.1.6 The Process Update Location VLR 340
16.1.1.7 The Process Subscriber Present HLR 342
16.1.2 Location Cancellation 344
16.1.2.1 General 344
16.1.2.2 Detailed procedure in the HLR 344
16.1.2.3 Detailed procedure in the VLR 345
16.1.3 Detach IMSI 348
16.1.3.1 General 348
16.1.3.2 Detailed procedure in the MSC 348
16.1.3.3 Detailed procedure in the VLR 349
16.1.4 Purge MS 352
16.1.4.1 General 352
16.1.4.2 Detailed procedure in the VLR 352
16.1.4.3 Detailed procedure in the HLR 353
16.2 Handover procedure 356
16.2.1 General 356
16.2.2 Handover procedure in MSC-A 360
16.2.2.1 Basic handover 360
16.2.2.2 Handling of access signalling 360
16.2.2.3 Other procedures in stable handover situation 360
16.2.2.4 Subsequent handover 361

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST ETS 300 599 E5:2003
https://standards.iteh.ai/catalog/standards/sist/68c99860-8b64-40ec-bc3-c3a85198d072/sist-ets-300-599-e5-2003