



SLOVENSKI STANDARD SIST ETS 300 940 E4:2005

01-februar-2005

8 [[[HJb]`W] b]`h`Y`_ca i b]_UW`g_]`g]ghYa `fZuU&ZL!`Ja Ygb]_`nUa cV]b]`fUX]c`!
GdYWZ]_UW]UfYhY`d`Ugh]f] GA `\$('\$, žfUh`]]WJ) '%`%ž]nXU]U% - * Ł

Digital cellular telecommunications system (Phase 2+) (GSM); Mobile radio interface;
Layer 3 specification (GSM 04.08 version 5.10.1 Release 1996)

iteh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ^{SIST ETS 300 940 E4:2005} **ETS 300 940 Edition 4**
<https://standards.iteh.ai/catalog/standards/sist/a5259a1b-18c6-4dc4-a9b5-983e211c9599/sist-ets-300-940-e4-2005>

ICS:

33.070.01 Mobilni servisi na splošno Mobile services in general

SIST ETS 300 940 E4:2005 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 940 E4:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/a3259a1b-f8c8-4dc4-a9b5-983e211c9599/sist-ets-300-940-e4-2005>



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 940

December 1998

Fourth Edition

Source: SMG

Reference: RE/SMG-030408QR6

ICS: 33.020

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



**Digital cellular telecommunications system (Phase 2+);
Mobile radio interface layer 3 specification
(GSM 04.08 version 5.10.1 Release 1996)**

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

Internet: secretariat@etsi.fr - <http://www.etsi.fr> - <http://www.etsi.org>

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 1998. All rights reserved.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 940 E4:2005](https://standards.iteh.ai/catalog/standards/sist/a3259a1b-f8c8-4dc4-a9b5-983e211c9599/sist-ets-300-940-e4-2005)

<https://standards.iteh.ai/catalog/standards/sist/a3259a1b-f8c8-4dc4-a9b5-983e211c9599/sist-ets-300-940-e4-2005>

Contents

Foreword	21
Introduction	21
0 Scope	23
0.1 Scope of the Technical Specification	23
0.2 Application to the interface structures	23
0.3 Structure of layer 3 procedures	23
0.4 Test procedures	23
0.5 Use of logical channels	23
0.6 Overview of control procedures	24
0.6.1 List of procedures	24
0.7 Applicability of implementations	25
1 Normative references	26
2 Definitions and abbreviations	30
2.1 Random values	30
2.2 Vocabulary	30
3 Radio Resource management procedures	32
3.1 Overview/General	32
3.1.1 General	32
3.1.2 Services provided to upper layers	32
3.1.2.1 Idle mode	32
3.1.2.2 Dedicated mode	32
3.1.2.3 Group receive mode	33
3.1.2.4 Group transmit mode	33
3.1.3 Services required from data link and physical layers	33
3.1.4 Change of dedicated channels	33
3.1.4.1 Change of dedicated channels using SAPI = 0	33
3.1.4.2 Change of dedicated channels using other SAPIs than 0 ...	34
3.1.4.3 Sequenced message transfer operation	34
3.1.4.3.1 Variables and sequence numbers	34
3.1.4.3.2 Procedures for the initiation, transfer execution and termination of the sequenced message transfer operation	35
3.1.5 Procedure for Service Request and Contention Resolution	35
3.2 Idle mode procedures	36
3.2.1 Mobile Station side	36
3.2.2 Network side	36
3.2.2.1 System information broadcasting	36
3.2.2.2 Paging	37
3.3 RR connection establishment	37
3.3.1 RR connection establishment initiated by the mobile station	37
3.3.1.1 Entering the dedicated mode : immediate assignment procedure	37
3.3.1.1.1 Permission to access the network	37
3.3.1.1.2 Initiation of the immediate assignment procedure	38
3.3.1.1.3 Answer from the network	39
3.3.1.1.4 Assignment completion	40
3.3.1.1.5 Abnormal cases	41
3.3.1.2 Entering the group transmit mode: uplink access procedure	41
3.3.1.2.1 Mobile station side	41

	3.3.1.2.2	Network side	42	
	3.3.1.2.3	Abnormal cases	43	
3.3.2	Paging procedure		43	
	3.3.2.1	Paging initiation by the network.....	43	
	3.3.2.2	Paging response	44	
	3.3.2.3	Abnormal cases	44	
3.3.3	Notification procedure.....		45	
	3.3.3.1	Notification of a call.....	45	
	3.3.3.2	Joining a VGCS or VBS call.....	45	
	3.3.3.3	Reduced NCH monitoring mechanism	46	
3.4	Procedures in dedicated mode and in group transmit mode		47	
3.4.1	SACCH procedures		47	
	3.4.1.1	General	47	
	3.4.1.2	Measurement report.....	48	
	3.4.1.3	Extended measurement report \$(MAFA)\$.....	48	
3.4.2	Transfer of messages and link layer service provision.....		48	
3.4.3	Channel assignment procedure.....		48	
	3.4.3.1	Channel assignment initiation	49	
	3.4.3.2	Assignment completion.....	51	
	3.4.3.3	Abnormal cases	51	
3.4.4	Handover procedure		52	
	3.4.4.1	Handover initiation	52	
	3.4.4.2	Physical channel establishment.....	54	
		3.4.4.2.1	Finely synchronized cell case.....	54
		3.4.4.2.2	Non synchronized cell case.....	54
		3.4.4.2.3	Pseudo-synchronized cell case.....	55
		3.4.4.2.4	Pre-synchronized cell case	55
	3.4.4.3	Handover completion.....	55	
	3.4.4.4	Abnormal cases	56	
3.4.5	Frequency redefinition procedure.....		57	
	3.4.5.1	Abnormal cases	57	
3.4.6	Channel mode modify procedure.....		57	
	3.4.6.1	Normal channel mode modify procedure.....	58	
		3.4.6.1.1	Initiation of the channel mode modify procedure	58
		3.4.6.1.2	Completion of channel mode modify procedure	58
		3.4.6.1.3	Abnormal cases	58
	3.4.6.2	Channel mode modify procedure for a voice group call talker	58	
		3.4.6.2.1	Initiation of the channel mode modify procedure	58
		3.4.6.2.2	Completion of mode change procedure	59
		3.4.6.2.3	Abnormal cases	59
3.4.7	Ciphering mode setting procedure.....		59	
	3.4.7.1	Ciphering mode setting initiation	59	
	3.4.7.2	Ciphering mode setting completion.....	59	
3.4.8	Additional channel assignment procedure.....		60	
	3.4.8.1	Additional assignment procedure initiation.....	60	
	3.4.8.2	Additional assignment procedure completion	60	
	3.4.8.3	Abnormal cases	60	
3.4.9	Partial channel release procedure		61	
	3.4.9.1	Partial release procedure initiation.....	61	
	3.4.9.2	Abnormal cases	61	
3.4.10	Classmark change procedure.....		61	
3.4.11	Classmark interrogation procedure		61	
	3.4.11.1	Classmark interrogation initiation.....	61	
	3.4.11.2	Classmark interrogation completion	62	
3.4.12	Indication of notifications and paging informations.....		62	
3.4.13	RR connection release procedure		63	
	3.4.13.1	Normal release procedure	63	

ETS 300 940 (GSM 04.08 version 5.10.1 Release 1996): December 1998

	3.4.13.1.1	Channel release procedure initiation in dedicated mode and in group transmit mode	63
	3.4.13.1.2	Abnormal cases	64
3.4.13.2		Radio link failure in dedicated mode	64
	3.4.13.2.1	Mobile side	64
	3.4.13.2.2	Network side	64
3.4.13.3		RR connection abortion in dedicated mode	64
3.4.13.4		Uplink release procedure in group transmit mode	65
3.4.13.5		Radio link failure in group transmit mode	65
	3.4.13.5.1	Mobile side	65
	3.4.13.5.2	Network side	65
3.4.14		Receiving a RR STATUS message by a RR entity	65
3.4.15		Group receive mode procedures	65
	3.4.15.1	Mobile station side	66
	3.4.15.1.1	Reception of the VGCS or VBS channel	66
	3.4.15.1.2	Monitoring of downlink messages and related procedures	66
	3.4.15.1.3	Uplink reply procedure	67
	3.4.15.1.4	Leaving the group receive mode	67
3.4.15.2		Network side	68
	3.4.15.2.1	Provision of messages on the VGCS or VBS channel downlink	68
	3.4.15.2.2	Release of the VGCS or VBS Channels	69
	3.4.15.3	Failure cases	69
3.4.16		Configuration change procedure	69
	3.4.16.1	Configuration change initiation	69
	3.4.16.2	Configuration change completion	70
	3.4.16.3	Abnormal cases	70
3.4.17		Mapping of user data substreams onto timeslots in a multislot configuration	70
3.4.18		Handling of classmark information at band change	70
4		Elementary procedures for Mobility Management	72
	4.1	General	72
	4.1.1	Type of MM procedures	72
	4.1.2	MM sublayer states	72
	4.1.2.1	MM sublayer states in the mobile station	73
		4.1.2.1.1 Main states	73
		4.1.2.1.2 Substates of the MM IDLE state	76
	4.1.2.2	The update Status	77
	4.1.2.3	MM sublayer states on the network side	78
4.2		Behaviour in MM IDLE State	79
	4.2.1	Primary Service State selection	79
		4.2.1.1 Selection of the Service State after Power On.	79
		4.2.1.2 Other Cases	80
	4.2.2	Detailed Description of the MS behaviour in MM IDLE State	80
		4.2.2.1 Service State, NORMAL SERVICE	80
		4.2.2.2 Service State, ATTEMPTING TO UPDATE	80
		4.2.2.3 Service State, LIMITED SERVICE	81
		4.2.2.4 Service State, NO IMSI	81
		4.2.2.5 Service State, SEARCH FOR PLMN, NORMAL SERVICE	82
		4.2.2.6 Service State, SEARCH FOR PLMN	82
		4.2.2.7 Service State, RECEIVING GROUP CALL (NORMAL SERVICE)	82
		4.2.2.8 Service State, RECEIVING GROUP CALL (LIMITED SERVICE)	82
	4.2.3	Service state when back to state MM IDLE from another state	83
4.3		MM common procedures	83
	4.3.1	TMSI reallocation procedure	83
		4.3.1.1 TMSI reallocation initiation by the network	84

	4.3.1.2	TMSI reallocation completion by the mobile station.....	84
	4.3.1.3	TMSI reallocation completion in the network.	84
	4.3.1.4	Abnormal cases	84
4.3.2		Authentication procedure	86
	4.3.2.1	Authentication request by the network	86
	4.3.2.2	Authentication response by the mobile station.....	86
	4.3.2.3	Authentication processing in the network	86
	4.3.2.4	Ciphering key sequence number	86
	4.3.2.5	Unsuccessful authentication	87
	4.3.2.6	Abnormal cases	87
4.3.3		Identification procedure	88
	4.3.3.1	Identity request by the network	88
	4.3.3.2	Identification response by the mobile station	88
	4.3.3.3	Abnormal cases	88
4.3.4		IMSI detach procedure	88
	4.3.4.1	IMSI detach initiation by the mobile station	88
	4.3.4.2	IMSI detach procedure in the network	89
	4.3.4.3	IMSI detach completion by the mobile station.....	89
	4.3.4.4	Abnormal cases	89
4.3.5		Abort procedure	89
	4.3.5.1	Abort procedure initiation by the network.....	89
	4.3.5.2	Abort procedure in the mobile station	90
4.3.6		MM information procedure.....	90
	4.3.6.1	MM information procedure initiation by the network.....	90
	4.3.6.2	MM information procedure in the mobile station	90
4.4		MM specific procedures	91
	4.4.1	Location updating procedure	91
	4.4.2	Periodic updating	92
	4.4.3	IMSI attach procedure	92
	4.4.4	Generic Location Updating procedure	93
	4.4.4.1	Location updating initiation by the mobile station.....	93
	4.4.4.1a	Network Request for Additional mobile station Capability Information	93
	4.4.4.2	Identification request from the network	93
	4.4.4.3	Authentication by the network	93
	4.4.4.4	Ciphering mode setting by the network.....	93
	4.4.4.5	Attempt Counter	93
	4.4.4.6	Location updating accepted by the network.....	94
	4.4.4.7	Location updating not accepted by the network.....	94
	4.4.4.8	Release of RR connection after location updating	95
	4.4.4.9	Abnormal cases on the mobile station side	95
	4.4.4.10	Abnormal cases on the network side	96
4.5		Connection management sublayer service provision.....	97
	4.5.1	MM connection establishment	97
	4.5.1.1	MM connection establishment initiated by the mobile station.....	97
	4.5.1.2	Abnormal cases	100
	4.5.1.3	MM connection establishment initiated by the network.....	101
	4.5.1.3.1	Mobile Terminating CM Activity.....	101
	4.5.1.3.2	Mobile Originating CM Activity \$(CCBS)\$.....	101
	4.5.1.4	Abnormal cases	102
	4.5.1.5	MM connection establishment for emergency calls	102
	4.5.1.6	Call re-establishment	103
	4.5.1.6.1	Call re-establishment, initiation by the mobile station	104
	4.5.1.6.2	Abnormal cases	105
	4.5.1.7	Forced release during MO MM connection establishment	106
4.5.2		MM connection information transfer phase	106
	4.5.2.1	Sending CM messages	106
	4.5.2.2	Receiving CM messages	107
	4.5.2.3	Abnormal cases	107
4.5.3		MM connection release.....	107

ETS 300 940 (GSM 04.08 version 5.10.1 Release 1996): December 1998

	4.5.3.1	Release of associated RR connection.....	107
	4.5.3.2	Uplink release in a voice group call	108
4.6		Receiving a MM STATUS message by a MM entity.....	108
5		Elementary procedures for circuit-switched Call Control	109
5.1		Overview	109
	5.1.1	General.....	109
	5.1.2	Call Control States	114
	5.1.2.1	Call states at the mobile station side of the interface	114
	5.1.2.1.1	Null (State U0)	114
	5.1.2.1.2	MM Connection pending (U0.1)	114
	5.1.2.1.2a	CC prompt present (U0.2) \$(CCBS)\$.....	114
	5.1.2.1.2b	Wait for network information (U0.3) \$(CCBS)\$.....	114
	5.1.2.1.2c	CC-Establishmentpresent (U0.4) \$(CCBS)\$.....	114
	5.1.2.1.2d	CC-Establishment confirmed (U0.5) \$(CCBS)\$.....	114
	5.1.2.1.2e	Recall present (U0.6) \$(CCBS)\$	114
	5.1.2.1.3	Call initiated (U1)	114
	5.1.2.1.4	Mobile originating call proceeding (U3).....	114
	5.1.2.1.5	Call delivered (U4)	115
	5.1.2.1.6	Call present (U6).....	115
	5.1.2.1.7	Call received (U7)	115
	5.1.2.1.8	Connect Request (U8)	115
	5.1.2.1.9	Mobile terminating call confirmed (U9).....	115
	5.1.2.1.10	Active (U10)	115
	5.1.2.1.11	Disconnect request (U11)	115
	5.1.2.1.12	Disconnect indication (U12)	115
	5.1.2.1.13	Release request (U19).....	115
	5.1.2.1.14	Mobile originating modify (U26)	115
	5.1.2.1.15	Mobile terminating modify (U27)	115
	5.1.2.2	Network call states	115
	5.1.2.2.1	Null (State N0)	116
	5.1.2.2.2	MM connection pending (N0.1)	116
	5.1.2.2.2a	CC connection pending (N0.2) \$(CCBS)\$.....	116
	5.1.2.2.2b	Network answer pending (N0.3) \$(CCBS)\$.....	116
	5.1.2.2.2c	CC-Establishment present (N0.4) \$(CCBS)\$.....	116
	5.1.2.2.2d	CC-Establishment confirmed (N0.5) \$(CCBS)\$.....	116
	5.1.2.2.2e	Recall present (N0.6) \$(CCBS)\$	116
	5.1.2.2.3	Call initiated (N1)	116
	5.1.2.2.4	Mobile originating call proceeding (N3).....	116
	5.1.2.2.5	Call delivered (N4)	116
	5.1.2.2.6	Call present (N6).....	116
	5.1.2.2.7	Call received (N7)	116
	5.1.2.2.8	Connect request (N8)	117
	5.1.2.2.9	Mobile terminating call confirmed (N9).....	117
	5.1.2.2.10	Active (N10)	117
	5.1.2.2.11	{Not used}	117
	5.1.2.2.12	Disconnect indication (N12)	117
	5.1.2.2.13	Release request (N19).....	117
	5.1.2.2.14	Mobile originating modify (N26)	117
	5.1.2.2.15	Mobile terminating modify (N27)	117
	5.1.2.2.16	Connect Indication (N28)	117
5.2		Call establishment procedures	117
	5.2.1	Mobile originating call establishment.....	118
	5.2.1.1	Call initiation	118
	5.2.1.2	Receipt of a setup message	119
	5.2.1.3	Receipt of a CALL PROCEEDING message.....	120

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/a3259a1b-180c-40c4-80b1-983e211c9599/sist/ets-300-940-e4-2005>

	5.2.1.4	Notification of progressing mobile originated call.....	120
	5.2.1.4.1	Notification of interworking in connection with mobile originated call establishment	120
	5.2.1.4.2	Call progress in the PLMN/ISDN environment	121
	5.2.1.5	Alerting	121
	5.2.1.6	Call connected	122
	5.2.1.7	Call rejection	122
	5.2.1.8	Transit network selection	122
	5.2.1.9	Traffic channel assignment at mobile originating call establishment	122
	5.2.1.10	Call queuing at mobile originating call establishment	123
5.2.2		Mobile terminating call establishment.....	123
	5.2.2.1	Call indication	123
	5.2.2.2	Compatibility checking	124
	5.2.2.3	Call confirmation	124
	5.2.2.3.1	Response to SETUP	124
	5.2.2.3.2	Receipt of CALL CONFIRMED and ALERTING by the network.....	124
	5.2.2.3.3	Call failure procedures	125
	5.2.2.3.4	Called mobile station clearing during mobile terminating call establishment	125
	5.2.2.4	Notification of interworking in connection with mobile terminating call establishment.....	125
	5.2.2.5	Call accept	125
	5.2.2.6	Active indication	125
	5.2.2.7	Traffic channel assignment at mobile terminating call establishment	126
	5.2.2.8	Call queuing at mobile terminating call establishment	126
	5.2.2.9	User connection attachment during a mobile terminating call.....	126
5.2.3		Network initiated MO call \$(CCBS)\$.....	126
	5.2.3.1	Initiation	126
	5.2.3.2	CC-Establishment present	127
	5.2.3.2.1	Recall Alignment Procedure.....	128
	5.2.3.3	CC-Establishment confirmation	129
	5.2.3.4	Recall present	129
	5.2.3.5	Traffic channel assignment during network initiated mobile originating call establishment	130
5.3		Signalling procedures during the "active" state	130
	5.3.1	User notification procedure.....	130
	5.3.2	Call rearrangements	130
	5.3.3	Not used	131
	5.3.4	Support of Dual Services	131
	5.3.4.1	Service Description	131
	5.3.4.2	Call establishment.....	131
	5.3.4.2.1	Mobile Originating Establishment.....	131
	5.3.4.2.2	Mobile Terminating Establishment.....	132
	5.3.4.3	Changing the Call Mode.....	132
	5.3.4.3.1	Initiation of in-call modification	133
	5.3.4.3.2	Successful completion of in-call modification	133
	5.3.4.3.3	Change of the channel configuration	133
	5.3.4.3.4	Failure of in-call modification.....	133
	5.3.4.4	Abnormal procedures.....	134
5.3.5		User initiated service level up- and downgrading	135
	5.3.5.1	Initiation of service level up- and downgrading	135
	5.3.5.2	Successful completion of service level up- and downgrading.....	135
	5.3.5.3	Rejection of service level up- and downgrading.....	135
	5.3.5.4	Time-out recovery	135
5.4		Call clearing.....	136

ETS 300 940 (GSM 04.08 version 5.10.1 Release 1996): December 1998

5.4.1	Terminology.....	136
5.4.2	Exception conditions	136
5.4.3	Clearing initiated by the mobile station.....	136
5.4.3.1	Initiation of call clearing	136
5.4.3.2	Receipt of a DISCONNECT message from the mobile station.....	137
5.4.3.3	Receipt of a RELEASE message from the network	137
5.4.3.4	Receipt of a RELEASE COMPLETE message from the mobile station.....	137
5.4.3.5	Abnormal cases.....	137
5.4.4	Clearing initiated by the network	137
5.4.4.1	Clearing when tones/announcements provided	137
5.4.4.1.1	Receipt of a DISCONNECT message with progress indicator #8 from the network	138
5.4.4.1.2	Expiry of timer T306.....	138
5.4.4.2	Clearing when tones/announcements not provided	138
5.4.4.2.1	Receipt of a DISCONNECT message without progress indicator or with progress indicator different from #8 from the network.....	138
5.4.4.2.2	Receipt of a RELEASE message from the mobile station.....	138
5.4.4.2.3	Abnormal cases	138
5.4.4.3	Completion of clearing.....	138
5.4.4.3.1	Abnormal cases	139
5.4.5	Clear collision	139
5.5	Miscellaneous procedures.....	139
5.5.1	In-band tones and announcements.....	139
5.5.2	Call collisions.....	139
5.5.3	Status procedures.....	139
5.5.3.1	Status enquiry procedure.....	139
5.5.3.2	Reception of a STATUS message by a CC entity	140
5.5.3.2.1	STATUS message with incompatible state	140
5.5.3.2.2	STATUS message with compatible state	140
5.5.4	Call re-establishment, mobile station side.....	140
5.5.4.1	Indication from the mobility management sublayer	140
5.5.4.2	Reaction of call control	140
5.5.4.3	Completion of re-establishment.....	141
5.5.4.4	Unsuccessful outcome	141
5.5.5	Call re-establishment, network side	141
5.5.5.1	State alignment.....	141
5.5.6	Progress	141
5.5.7	DTMF protocol control procedure	141
5.5.7.1	Start DTMF request by the mobile station	142
5.5.7.2	Start DTMF response by the network.....	142
5.5.7.3	Stop DTMF request by the mobile station	142
5.5.7.4	Stop DTMF response by the network	142
5.5.7.5	Sequencing of subsequent start DTMF requests by the mobile station.....	142
6	Support of packet services.....	143
7	Examples of structured procedures	144
7.1	General	144
7.1.1	Paging request	145
7.1.2	Immediate assignment.....	145
7.1.3	Service request and contention resolution	146
7.1.4	Authentication.....	146
7.1.5	Ciphering mode setting	147
7.1.6	Transaction phase.....	147

	7.1.6.1	Channel mode modify	147
	7.1.7	Channel release.....	148
7.2		Abnormal cases	148
7.3		Selected examples.....	148
	7.3.1	Location updating	149
	7.3.2	Mobile originating call establishment.....	150
	7.3.3	Mobile terminating call establishment.....	154
	7.3.4	Call clearing.....	157
	7.3.5	DTMF protocol control	158
	7.3.6	Handover	159
	7.3.7	In-call modification.....	161
	7.3.8	Call re-establishment.....	162
	7.3.9	Network initiated mobile originating call \$(CCBS)\$	163
8		Handling of unknown, unforeseen, and erroneous protocol data	167
	8.1	General.....	167
	8.2	Message too short.....	168
	8.3	Unknown or unforeseen transaction identifier.....	168
	8.4	Unknown or unforeseen message type.....	169
	8.5	Non-semantic mandatory information element errors	170
	8.5.1	Radio resource management	171
	8.5.2	Mobility management.....	171
	8.5.3	Call control.....	171
	8.6	Unknown and unforeseen IEs in the non-imperative message part	171
	8.6.1	IEs unknown in the message.....	171
	8.6.2	Out of sequence IEs	171
	8.6.3	Repeated IEs	172
	8.7	Non-imperative message part errors	172
	8.7.1	Syntactically incorrect optional IEs	172
	8.7.2	Conditional IE errors.....	172
	8.8	Messages with semantically incorrect contents	172
9		Message functional definitions and contents	173
	9.1	Messages for Radio Resources management.....	174
	9.1.1	Additional assignment.....	176
	9.1.1.1	Mobile Allocation	176
	9.1.1.2	Starting Time.....	176
	9.1.2	Assignment command.....	177
	9.1.2.1	Mode of the First Channel (Channel Set 1) and Mode of Channel Set "X" (2= X =<8)	178
	9.1.2.2	Description of the Second Channel	178
	9.1.2.3	Mode of the Second Channel.....	178
	9.1.2.4	Mobile Allocation and Frequency List, after the starting time	178
	9.1.2.5	Starting Time.....	179
	9.1.2.6	Reference cell frequency list.....	179
	9.1.2.7	Cell Channel Description.....	179
	9.1.2.8	Cipher Mode Setting	179
	9.1.2.9	VGCS target mode Indication	180
	9.1.2.10	Description of the multislot allocation.....	180
	9.1.3	Assignment complete	180
	9.1.4	Assignment failure	181
	9.1.5	Channel mode modify.....	181
	9.1.5.1	Channel Description.....	181
	9.1.5.2	VGCS target mode Indication	181
	9.1.6	Channel mode modify acknowledge.....	182
	9.1.7	Channel release.....	183
	9.1.7.1	Channel description and mobile allocation.....	183
	9.1.7.2	Group Cipher Key Number.....	183
	9.1.8	Channel request	184
	9.1.9	Ciphering mode command	186
	9.1.10	Ciphering mode complete.....	187
	9.1.10.1	Mobile Equipment Identity.....	187

ETS 300 940 (GSM 04.08 version 5.10.1 Release 1996): December 1998

9.1.11	Classmark change	187
9.1.11.1	Additional Mobile Station Classmark Information	187
9.1.11.2	Mobile Station Classmark	187
9.1.12	Classmark enquiry	187
9.1.12a	[Spare]	188
9.1.12b	Configuration change command	188
9.1.12b.1	Description of the multislot allocation	188
9.1.12b.2	Mode of Channel Set "X" (1=<X<=8)	189
9.1.12c	Configuration change acknowledge	189
9.1.12d	Configuration change reject	189
9.1.13	Frequency redefinition	190
9.1.13.1	Cell Channel Description	190
9.1.14	Handover access	190
9.1.15	Handover command	191
9.1.15.1	Synchronization Indication	192
9.1.15.2	Mode of the First Channel (Channel Set 1) and Mode of Channel Set "X" (2=<X<=8)	192
9.1.15.3	Description of the Second Channel	192
9.1.15.4	Mode of the Second Channel	193
9.1.15.5	Frequency Channel Sequence, Frequency List, Frequency short list and Mobile Allocation, after time.	193
9.1.15.6	Starting Time	193
9.1.15.7	Reference cell frequency list	194
9.1.15.8	Real Time Difference	194
9.1.15.9	Timing Advance	194
9.1.15.10	Cipher Mode Setting	194
9.1.15.11	VGCS target mode indication	194
9.1.15.12	Description of the multislot allocation	195
9.1.16	Handover complete	195
9.1.16.1	Mobile Observed Time Difference	195
9.1.17	Handover failure	195
9.1.18	Immediate assignment	197
9.1.18.1	Mobile Allocation	197
9.1.18.2	Starting Time	197
9.1.18.3	IA Rest Octets (Frequency parameters, before time)	197
9.1.19	Immediate assignment extended	198
9.1.19.1	Unnecessary IEs	198
9.1.19.2	Mobile Allocation	199
9.1.19.3	Starting Time	199
9.1.19.4	Maximum message length	199
9.1.19.5	IAX Rest Octets	199
9.1.20	Immediate assignment reject	199
9.1.20.1	Use of the indexes	200
9.1.20.2	Filling of the message	200
9.1.20.3	IAR Rest Octets	200
9.1.21	Measurement report	200
9.1.21a	Notification/FACCH	200
9.1.21a.1	Spare	202
9.1.21a.2	Spare	202
9.1.21a.3	Spare	202
9.1.21a.4	Spare	202
9.1.21b	Notification/NCH	202
9.1.21b.1	Spare	203
9.1.21b.2	Spare	203
9.1.21d	Spare	203
9.1.22	Paging request type 1	203
9.1.22.1	Unnecessary IE	203
9.1.22.2	Channels needed for Mobiles 1 and 2	203
9.1.22.3	Mobile Identities	204
9.1.22.4	P1 Rest Octets	204
9.1.23	Paging request type 2	204
9.1.23.1	Channels needed for Mobiles 1 and 2	204
9.1.23.2	Mobile Identity 3	204

	9.1.23.3	P2 Rest Octets.....	204
9.1.24		Paging request type 3.....	205
	9.1.24.1	Channels needed for Mobiles 1 and 2	205
	9.1.24.2	P3 Rest Octets.....	205
9.1.25		Paging response.....	206
	9.1.25.1	Mobile Station Classmark	206
9.1.26		Partial release.....	206
	9.1.26.1	Channel Description.....	206
9.1.27		Partial release complete	207
9.1.28		Physical information.....	207
9.1.29		RR Status	207
9.1.30		Synchronization channel information.....	208
9.1.31		System information Type 1.....	209
9.1.32		System information type 2	209
9.1.33		System information type 2bis.....	210
9.1.34		System information type 2ter.....	210
9.1.35		System information type 3	211
9.1.36		System information type 4	212
	9.1.36.1	CBCCH Channel description	212
	9.1.36.2	CBCCH Mobile Allocation.....	212
	9.1.36.3	SI 4 Rest Octets.....	212
9.1.37		System information type 5	212
9.1.38		System information type 5bis.....	213
9.1.39		System information type 5ter.....	213
9.1.40		System information type 6	214
	9.1.40.1	Cell Identity.....	214
	9.1.40.2	Location Area Identification.....	214
	9.1.40.3	Cell Options.....	214
	9.1.40.4	NCC permitted.....	215
9.1.41		System information type 7	215
9.1.42		System information type 8.....	215
9.1.43		System information Type 9.....	216
9.1.44		Talker indication.....	216
9.1.45		Uplink access.....	217
9.1.46		Uplink busy.....	218
9.1.47		Uplink free.....	218
9.1.48		Uplink release	219
9.1.49		VGCS uplink grant.....	220
9.1.50		System information type 10 \$(ASCII)\$	221
9.1.51		EXTENDED MEASUREMENT ORDER \$(MAFA)\$.....	221
9.1.52		Extended measurement report \$(MAFA)\$.....	222
9.2		Messages for mobility management	222
	9.2.1	Authentication reject.....	224
	9.2.2	Authentication request.....	224
	9.2.3	Authentication response	225
	9.2.4	CM Re-establishment request	225
	9.2.4.1	Location area identification	225
	9.2.4.2	Mobile Station Classmark	225
	9.2.5	CM service accept.....	226
	9.2.5a	CM service prompt \$(CCBS)\$.....	226
	9.2.6	CM service reject.....	226
	9.2.7	CM service abort.....	227
	9.2.8	Abort	227
	9.2.9	CM service request.....	228
	9.2.9.1	Mobile Station Classmark	228
	9.2.9.2	Priority	228
	9.2.10	Identity request	229
	9.2.11	Identity response.....	229
	9.2.12	IMSI detach indication	230
	9.2.12.1	Mobile Station Classmark	230
	9.2.13	Location updating accept.....	231
	9.2.13.1	Follow on proceed.....	231
	9.2.14	Location updating reject.....	231

ETS 300 940 (GSM 04.08 version 5.10.1 Release 1996): December 1998

9.2.15	Location updating request	232
9.2.15.1	Location area identification	232
9.2.15.2	Mobile Station Classmark	232
9.2.15a	MM information	233
9.2.15a.1	Full name for network	233
9.2.15a.2	Short name for network	233
9.2.15a.3	Network time zone	233
9.2.15a.4	Network time zone and time	233
9.2.16	MM Status	234
9.2.17	TMSI reallocation command	234
9.2.18	TMSI reallocation complete	234
9.2.19	MM Null	235
9.2.20	Notification response	235
9.3	Messages for circuit-switched call control	236
9.3.1	Alerting	237
9.3.1.1	Alerting (network to mobile station direction)	237
9.3.1.1.1	Facility	237
9.3.1.1.2	Progress indicator	237
9.3.1.1.3	User-user	237
9.3.1.2	Alerting (mobile station to network direction)	238
9.3.1.2.1	Facility	238
9.3.1.2.2	User-user	238
9.3.1.2.3	SS version	238
9.3.2	Call confirmed	239
9.3.2.1	Repeat indicator	240
9.3.2.2	Bearer capability 1 and bearer capability 2	240
9.3.2.3	Cause	240
9.3.2.4	CC Capabilities	240
9.3.3	Call proceeding	241
9.3.3.1	Repeat indicator	241
9.3.3.2	Bearer capability 1 and bearer capability 2	241
9.3.3.3	Facility	241
9.3.3.4	Progress Indicator	241
9.3.3.5	Priority granted	241
9.3.4	Congestion control	242
9.3.4.1	Cause	242
9.3.5	Connect	243
9.3.5.1	Connect (network to mobile station direction)	243
9.3.5.1.1	Facility	243
9.3.5.1.2	Progress indicator	243
9.3.5.1.3	User-user	243
9.3.5.2	Connect (mobile station to network direction)	244
9.3.5.2.1	Facility	244
9.3.5.2.2	User-user	244
9.3.5.2.3	SS version	244
9.3.6	Connect acknowledge	245
9.3.7	Disconnect	245
9.3.7.1	Disconnect (network to mobile station direction)	245
9.3.7.1.1	Facility	246
9.3.7.1.2	Progress indicator	246
9.3.7.1.3	User-user	246
9.3.7.2	Disconnect (mobile station to network direction)	246
9.3.7.2.1	Facility	247
9.3.7.2.2	User-user	247
9.3.7.2.3	SS version	247
9.3.8	Emergency setup	247
9.3.8.1	Bearer capability	247
9.3.9	Facility	248
9.3.9.1	Facility (network to mobile station direction)	248
9.3.9.2	Facility (mobile station to network direction)	248
9.3.9.2.1	SS version	249
9.3.10	Hold	249
9.3.11	Hold Acknowledge	249