

**SLOVENSKI STANDARD
SIST EN 300 940 V5.15.1:2005
01-februar-2005**

8][JhUb]WW] b]hYY_ca i b]_UWg]g]ghYa 'fUhU&ž! Ja Ygb]_nUa cV]b]fUX)c!
GdYh]_UW]UfYhY'd`Ugh]f] GA '\$('\$, žfUh]]WU) "A "ž]nXU]U% - * Ĺ

Digital cellular telecommunications system (Phase 2+) (GSM); Mobile radio interface;
Layer 3 specification (GSM 04.08 version 5.15.1 Release 1996)

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

Ta slovenski standard je istoveten z: [SIST EN 300 940 V5.15.1:2005
https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1fsist-en-300-940-v5-15-1-2005](https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1fsist-en-300-940-v5-15-1-2005)

ICS:

33.070.01 Mobilni servisi na splošno Mobile services in general

SIST EN 300 940 V5.15.1:2005 en

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN 300 940 V5.15.1:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1f/sist-en-300-940-v5-15-1-2005>

ETSI EN 300 940 V5.15.1 (2000-10)

European Standard (Telecommunications series)

**Digital cellular telecommunications system (Phase 2+);
Mobile radio interface;
Layer 3 specification
(GSM 04.08 version 5.15.1 Release 1996)**

iTeh STANDARD PREVIEW
(standards.iteh.ai)



GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

SIST EN 300 940 V5.15.1:2005

<https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1f/sist-en-300-940-v5-15-1-2005>



Reference

REN/TSGN-010408QR11

KeywordsDigital cellular telecommunications system,
Global System for Mobile communications (GSM)***ETSI***

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

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

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse 06 N° 7303/88**iTeh STANDARD PREVIEW
(standards.iteh.ai)**SIST EN 300 940 V5.15.1:2005<https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1f/sist-en-300-940-v5-15-1-2005>

Important noticeIndividual copies of the present document can be downloaded from:
<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at <http://www.etsi.org/tb/status/>

If you find errors in the present document, send your comment to:
editor@etsi.fr

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 2000.
All rights reserved.

Contents

Intellectual Property Rights	20
Foreword.....	20
Introduction	21
0 Scope	22
0.1 Scope of the Technical Specification	22
0.2 Application to the interface structures.....	22
0.3 Structure of layer 3 procedures.....	22
0.4 Test procedures	22
0.5 Use of logical channels.....	22
0.6 Overview of control procedures	23
0.6.1 List of procedures	23
0.7 Applicability of implementations	25
1 References	25
2 Definitions and abbreviations.....	29
2.1 Random values	29
2.2 Vocabulary	29
3 Radio Resource management procedures.....	30
3.1 Overview/General	30
3.1.1 General.....	30
3.1.2 Services provided to upper layers	30
3.1.2.1 Idle mode	30
3.1.2.2 Dedicated mode.....	30
3.1.2.3 Group receive mode	31
3.1.2.4 Group transmit mode.....	31
3.1.3 Services required from data link and physical layers.....	31
3.1.4 Change of dedicated channels.....	31
3.1.4.1 Change of dedicated channels using SAPI = 0.....	31
3.1.4.2 Change of dedicated channels using other SAPIs than 0	32
3.1.4.3 Sequenced message transfer operation.....	32
3.1.4.3.1 Variables and sequence numbers.....	32
3.1.4.3.2 Procedures for the initiation, transfer execution and termination of the sequenced message transfer operation.....	32
3.1.5 Procedure for Service Request and Contention Resolution	33
3.2 Idle mode procedures	33
3.2.1 Mobile Station side	33
3.2.2 Network side.....	34
3.2.2.1 System information broadcasting.....	34
3.2.2.2 Paging	35
3.3 RR connection establishment	35
3.3.1 RR connection establishment initiated by the mobile station	35
3.3.1.1 Entering the dedicated mode : immediate assignment procedure	35
3.3.1.1.1 Permission to access the network	35
3.3.1.1.2 Initiation of the immediate assignment procedure.....	35
3.3.1.1.3 Answer from the network.....	36
3.3.1.1.4 Assignment completion	38
3.3.1.1.5 Abnormal cases	38
3.3.1.2 Entering the group transmit mode: uplink access procedure.....	39
3.3.1.2.1 Mobile station side	39
3.3.1.2.2 Network side.....	40
3.3.1.2.3 Abnormal cases	40
3.3.2 Paging procedure	40
3.3.2.1 Paging initiation by the network	40
3.3.2.2 Paging response.....	41

3.3.2.3	Abnormal cases	41
3.3.3	Notification procedure	42
3.3.3.1	Notification of a call.....	42
3.3.3.2	Joining a VGCS or VBS call.....	42
3.3.3.3	Reduced NCH monitoring mechanism.....	43
3.4	Procedures in dedicated mode and in group transmit mode	44
3.4.1	SACCH procedures.....	44
3.4.1.1	General.....	44
3.4.1.2	Measurement report	45
3.4.1.3	Extended measurement report \$(MAFA)\$.....	45
3.4.2	Transfer of messages and link layer service provision	45
3.4.3	Channel assignment procedure	45
3.4.3.1	Channel assignment initiation.....	46
3.4.3.2	Assignment completion.....	47
3.4.3.3	Abnormal cases	47
3.4.4	Handover procedure.....	48
3.4.4.1	Handover initiation.....	49
3.4.4.2	Physical channel establishment.....	50
3.4.4.2.1	Finely synchronized cell case	50
3.4.4.2.2	Non synchronized cell case	50
3.4.4.2.3	Pseudo-synchronized cell case	51
3.4.4.2.4	Pre-synchronized cell case.....	51
3.4.4.3	Handover completion	51
3.4.4.4	Abnormal cases	52
3.4.5	Frequency redefinition procedure	53
3.4.5.1	Abnormal cases	53
3.4.6	Channel mode modify procedure	53
3.4.6.1	Normal channel mode modify procedure	53
3.4.6.1.1	Initiation of the channel mode modify procedure.....	53
3.4.6.1.2	Completion of channel mode modify procedure	54
3.4.6.1.3	Abnormal cases	54
3.4.6.2	Channel mode modify procedure for a voice group call talker	54
3.4.6.2.1	Initiation of the channel mode modify procedure.....	54
3.4.6.2.2	Completion of mode change procedure	54
3.4.6.2.3	Abnormal cases	54
3.4.7	Ciphering mode setting procedure	55
3.4.7.1	Ciphering mode setting initiation	55
3.4.7.2	Ciphering mode setting completion	55
3.4.8	Additional channel assignment procedure	56
3.4.8.1	Additional assignment procedure initiation	56
3.4.8.2	Additional assignment procedure completion	56
3.4.8.3	Abnormal cases	56
3.4.9	Partial channel release procedure	56
3.4.9.1	Partial release procedure initiation	56
3.4.9.2	Abnormal cases	57
3.4.10	Classmark change procedure	57
3.4.11	Classmark interrogation procedure	57
3.4.11.1	Classmark interrogation initiation	57
3.4.11.2	Classmark interrogation completion	57
3.4.12	Indication of notifications and paging informations	57
3.4.13	RR connection release procedure	58
3.4.13.1	Normal release procedure	58
3.4.13.1.1	Channel release procedure initiation in dedicated mode and in group transmit mode	58
3.4.13.1.2	Abnormal cases	59
3.4.13.2	Radio link failure in dedicated mode	59
3.4.13.2.1	Mobile side	59
3.4.13.2.2	Network side.....	59
3.4.13.3	RR connection abortion in dedicated mode	59
3.4.13.4	Uplink release procedure in group transmit mode	60
3.4.13.5	Radio link failure in group transmit mode	60
3.4.13.5.1	Mobile side	60
3.4.13.5.2	Network side.....	60

3.4.14	Receiving a RR STATUS message by a RR entity.....	60
3.4.15	Group receive mode procedures	61
3.4.15.1	Mobile station side	61
3.4.15.1.1	Reception of the VGCS or VBS channel.....	61
3.4.15.1.2	Monitoring of downlink messages and related procedures.....	61
3.4.15.1.3	Uplink reply procedure.....	62
3.4.15.1.4	Leaving the group receive mode	62
3.4.15.2	Network side	63
3.4.15.2.1	Provision of messages on the VGCS or VBS channel downlink.....	63
3.4.15.2.2	Release of the VGCS or VBS Channels	64
3.4.15.3	Failure cases	64
3.4.16	Configuration change procedure.....	64
3.4.16.1	Configuration change initiation.....	64
3.4.16.2	Configuration change completion	65
3.4.16.3	Abnormal cases	65
3.4.17	Mapping of user data substreams onto timeslots in a multislot configuration	65
3.4.18	Handling of classmark information at band change.....	65
4	Elementary procedures for Mobility Management.....	66
4.1	General	66
4.1.1	Type of MM procedures	66
4.1.2	MM sublayer states	67
4.1.2.1	MM sublayer states in the mobile station.....	67
4.1.2.1.1	Main states.....	67
4.1.2.1.2	Substates of the MM IDLE state	70
4.1.2.2	The update Status	71
4.1.2.3	MM sublayer states on the network side	72
4.2	Behaviour in MM IDLE State	73
4.2.1	Primary Service State selection	73
4.2.1.1	Selection of the Service State after Power On	73
4.2.1.2	Other Cases	74
4.2.2	Detailed Description of the MS behaviour in MM IDLE State	74
4.2.2.1	Service State, NORMAL SERVICE.....	74
4.2.2.2	Service State, ATTEMPTING TO UPDATE.....	75
4.2.2.3	Service State, LIMITED SERVICE	75
4.2.2.4	Service State, NO IMSI.....	76
4.2.2.5	Service State, SEARCH FOR PLMN, NORMAL SERVICE.....	76
4.2.2.6	Service State, SEARCH FOR PLMN	76
4.2.2.7	Service State, RECEIVING GROUP CALL (NORMAL SERVICE)	77
4.2.2.8	Service State, RECEIVING GROUP CALL (LIMITED SERVICE)	77
4.2.3	Service state when back to state MM IDLE from another state.....	78
4.3	MM common procedures	78
4.3.1	TMSI reallocation procedure	78
4.3.1.1	TMSI reallocation initiation by the network	79
4.3.1.2	TMSI reallocation completion by the mobile station	79
4.3.1.3	TMSI reallocation completion in the network.....	79
4.3.1.4	Abnormal cases	79
4.3.2	Authentication procedure	80
4.3.2.1	Authentication request by the network.....	80
4.3.2.2	Authentication response by the mobile station.....	80
4.3.2.3	Authentication processing in the network	80
4.3.2.4	Ciphering key sequence number	80
4.3.2.5	Unsuccessful authentication	81
4.3.2.6	Abnormal cases	81
4.3.3	Identification procedure	82
4.3.3.1	Identity request by the network	82
4.3.3.2	Identification response by the mobile station	82
4.3.3.3	Abnormal cases	82
4.3.4	IMSI detach procedure	83
4.3.4.1	IMSI detach initiation by the mobile station	83
4.3.4.2	IMSI detach procedure in the network	83
4.3.4.3	IMSI detach completion by the mobile station.....	83

4.3.4.4	Abnormal cases	83
4.3.5	Abort procedure	83
4.3.5.1	Abort procedure initiation by the network	84
4.3.5.2	Abort procedure in the mobile station	84
4.3.6	MM information procedure	84
4.3.6.1	MM information procedure initiation by the network	84
4.3.6.2	MM information procedure in the mobile station	84
4.4	MM specific procedures	84
4.4.1	Location updating procedure	85
4.4.2	Periodic updating	85
4.4.3	IMSI attach procedure	86
4.4.4	Generic Location Updating procedure	86
4.4.4.1	Location updating initiation by the mobile station	86
4.4.4.1a	Network Request for Additional mobile station Capability Information	87
4.4.4.2	Identification request from the network	87
4.4.4.3	Authentication by the network	87
4.4.4.4	Ciphering mode setting by the network	87
4.4.4.5	Attempt Counter	87
4.4.4.6	Location updating accepted by the network	87
4.4.4.7	Location updating not accepted by the network	88
4.4.4.8	Release of RR connection after location updating	89
4.4.4.9	Abnormal cases on the mobile station side	89
4.4.4.10	Abnormal cases on the network side	90
4.5	Connection management sublayer service provision	91
4.5.1	MM connection establishment	91
4.5.1.1	MM connection establishment initiated by the mobile station	91
4.5.1.2	Abnormal cases	93
4.5.1.3	MM connection establishment initiated by the network	94
4.5.1.3.1	Mobile Terminating CM Activity	94
4.5.1.3.2	Mobile Originating CM Activity \$(CCBS)\$	95
4.5.1.4	Abnormal cases	96
4.5.1.5	MM connection establishment SIST EN 300 940 V5.15.1:2005	96
4.5.1.6	Call re-establishment	96
4.5.1.6.1	Call re-establishment initiation by the mobile station 1-2005	97
4.5.1.6.2	Abnormal cases	98
4.5.1.7	Forced release during MO MM connection establishment	99
4.5.2	MM connection information transfer phase	99
4.5.2.1	Sending CM messages	99
4.5.2.2	Receiving CM messages	100
4.5.2.3	Abnormal cases	100
4.5.3	MM connection release	100
4.5.3.1	Release of associated RR connection	100
4.5.3.2	Uplink release in a voice group call	100
4.6	Receiving a MM STATUS message by a MM entity	100
5	Elementary procedures for circuit-switched Call Control	101
5.1	Overview	101
5.1.1	General	101
5.1.2	Call Control States	106
5.1.2.1	Call states at the mobile station side of the interface	106
5.1.2.1.1	Null (State U0)	106
5.1.2.1.2	MM Connection pending (U0.1)	106
5.1.2.1.2a	CC prompt present (U0.2) \$(CCBS)\$	106
5.1.2.1.2b	Wait for network information (U0.3) \$(CCBS)\$	106
5.1.2.1.2c	CC-Establishmentpresent (U0.4) \$(CCBS)\$	106
5.1.2.1.2d	CC-Establishment confirmed (U0.5) \$(CCBS)\$	106
5.1.2.1.2e	Recall present (U0.6) \$(CCBS)\$	106
5.1.2.1.3	Call initiated (U1)	106
5.1.2.1.4	Mobile originating call proceeding (U3)	106
5.1.2.1.5	Call delivered (U4)	107
5.1.2.1.6	Call present (U6)	107
5.1.2.1.7	Call received (U7)	107

5.1.2.1.8	Connect Request (U8)	107
5.1.2.1.9	Mobile terminating call confirmed (U9).....	107
5.1.2.1.10	Active (U10).....	107
5.1.2.1.11	Disconnect request (U11)	107
5.1.2.1.12	Disconnect indication (U12).....	107
5.1.2.1.13	Release request (U19).....	107
5.1.2.1.14	Mobile originating modify (U26).....	107
5.1.2.1.15	Mobile terminating modify (U27)	107
5.1.2.2	Network call states	107
5.1.2.2.1	Null (State N0)	108
5.1.2.2.2	MM connection pending (N0.1)	108
5.1.2.2.2a	CC connection pending (N0.2) \$(CCBS)\$	108
5.1.2.2.2b	Network answer pending (N0.3) \$(CCBS)\$.....	108
5.1.2.2.2c	CC-Establishment present (N0.4) \$(CCBS)\$.....	108
5.1.2.2.2d	CC-Establishment confirmed (N0.5) \$(CCBS)\$.....	108
5.1.2.2.2e	Recall present (N0.6) \$(CCBS)\$	108
5.1.2.2.3	Call initiated (N1).....	108
5.1.2.2.4	Mobile originating call proceeding (N3)	108
5.1.2.2.5	Call delivered (N4)	108
5.1.2.2.6	Call present (N6)	108
5.1.2.2.7	Call received (N7)	108
5.1.2.2.8	Connect request (N8).....	109
5.1.2.2.9	Mobile terminating call confirmed (N9).....	109
5.1.2.2.10	Active (N10).....	109
5.1.2.2.11	{Not used}	109
5.1.2.2.12	Disconnect indication (N12).....	109
5.1.2.2.13	Release request (N19).....	109
5.1.2.2.14	Mobile originating modify (N26).....	109
5.1.2.2.15	Mobile terminating modify (N27)	109
5.1.2.2.16	Connect Indication (N28).....	109
5.2	Call establishment procedures	109
5.2.1	Mobile originating call establishment.....	110
5.2.1.1	Call initiation/standards.itech.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46- Receipt of a setup message.....	110
5.2.1.2	Receipt of a CALL PROCEEDING message	111
5.2.1.3	Receipt of a CALL PROCEEDING message	112
5.2.1.4	Notification of progressing mobile originated call.....	112
5.2.1.4.1	Notification of interworking in connection with mobile originated call establishment.....	112
5.2.1.4.2	Call progress in the PLMN/ISDN environment	113
5.2.1.5	Alerting	113
5.2.1.6	Call connected.....	113
5.2.1.7	Call rejection	114
5.2.1.8	Transit network selection	114
5.2.1.9	Traffic channel assignment at mobile originating call establishment	114
5.2.1.10	Call queuing at mobile originating call establishment	114
5.2.2	Mobile terminating call establishment.....	115
5.2.2.1	Call indication	115
5.2.2.2	Compatibility checking	115
5.2.2.3	Call confirmation	115
5.2.2.3.1	Response to SETUP	115
5.2.2.3.2	Receipt of CALL CONFIRMED and ALERTING by the network	116
5.2.2.3.3	Call failure procedures	116
5.2.2.3.4	Called mobile station clearing during mobile terminating call establishment	117
5.2.2.4	Notification of interworking in connection with mobile terminating call establishment	117
5.2.2.5	Call accept.....	117
5.2.2.6	Active indication	117
5.2.2.7	Traffic channel assignment at mobile terminating call establishment.....	118
5.2.2.8	Call queuing at mobile terminating call establishment	118
5.2.2.9	User connection attachment during a mobile terminating call	118
5.2.3	Network initiated MO call \$(CCBS)\$	118
5.2.3.1	Initiation.....	118
5.2.3.2	CC-Establishment present.....	118
5.2.3.2.1	Recall Alignment Procedure.....	120

5.2.3.3	CC-Establishment confirmation	120
5.2.3.4	Recall present	121
5.2.3.5	Traffic channel assignment during network initiated mobile originating call establishment	121
5.3	Signalling procedures during the "active" state	121
5.3.1	User notification procedure	121
5.3.2	Call rearrangements	122
5.3.3	Not used	122
5.3.4	Support of Dual Services	122
5.3.4.1	Service Description	122
5.3.4.2	Call establishment	122
5.3.4.2.1	Mobile Originating Establishment	122
5.3.4.2.2	Mobile Terminating Establishment	123
5.3.4.3	Changing the Call Mode	124
5.3.4.3.1	Initiation of in-call modification	124
5.3.4.3.2	Successful completion of in-call modification	124
5.3.4.3.3	Change of the channel configuration	124
5.3.4.3.4	Failure of in-call modification	125
5.3.4.4	Abnormal procedures	125
5.3.5	User initiated service level up- and downgrading	126
5.3.5.1	Initiation of service level up- and downgrading	126
5.3.5.2	Successful completion of service level up- and downgrading	126
5.3.5.3	Rejection of service level up- and downgrading	126
5.3.5.4	Time-out recovery	127
5.4	Call clearing	127
5.4.1	Terminology	127
5.4.2	Exception conditions	127
5.4.3	Clearing initiated by the mobile station	128
5.4.3.1	Initiation of call clearing	128
5.4.3.2	Receipt of a DISCONNECT message from the mobile station	128
5.4.3.3	Receipt of a RELEASE message from the network	128
5.4.3.4	Receipt of a RELEASE COMPLETE message from the mobile station	128
5.4.3.5	Abnormal cases	128
5.4.4	Clearing initiated by the network	128
5.4.4.1	Clearing when tones/announcements provided	129
5.4.4.1.1	Receipt of a DISCONNECT message with progress indicator #8 from the network	129
5.4.4.1.2	Expiry of timer T306	129
5.4.4.2	Clearing when tones/announcements not provided	129
5.4.4.2.1	Receipt of a DISCONNECT message without progress indicator or with progress indicator different from #8 from the network	129
5.4.4.2.2	Receipt of a RELEASE message from the mobile station	129
5.4.4.2.3	Abnormal cases	129
5.4.4.3	Completion of clearing	130
5.4.4.3.1	Abnormal cases	130
5.4.5	Clear collision	130
5.5	Miscellaneous procedures	130
5.5.1	In-band tones and announcements	130
5.5.2	Call collisions	130
5.5.3	Status procedures	131
5.5.3.1	Status enquiry procedure	131
5.5.3.2	Reception of a STATUS message by a CC entity	131
5.5.3.2.1	STATUS message with incompatible state	131
5.5.3.2.2	STATUS message with compatible state	131
5.5.4	Call re-establishment, mobile station side	132
5.5.4.1	Indication from the mobility management sublayer	132
5.5.4.2	Reaction of call control	132
5.5.4.3	Completion of re-establishment	132
5.5.4.4	Unsuccessful outcome	132
5.5.5	Call re-establishment, network side	132
5.5.5.1	State alignment	132
5.5.6	Progress	132
5.5.7	DTMF protocol control procedure	133
5.5.7.1	Start DTMF request by the mobile station	133

5.5.7.2	Start DTMF response by the network	133
5.5.7.3	Stop DTMF request by the mobile station	133
5.5.7.4	Stop DTMF response by the network.....	133
5.5.7.5	Sequencing of subsequent start DTMF requests by the mobile station.....	133
6	Support of packet services.....	134
7	Examples of structured procedures	134
7.1	General	134
7.1.1	Paging request.....	135
7.1.2	Immediate assignment	135
7.1.3	Service request and contention resolution	135
7.1.4	Authentication.....	136
7.1.5	Ciphering mode setting.....	136
7.1.6	Transaction phase	136
7.1.6.1	Channel mode modify	137
7.1.7	Channel release	137
7.2	Abnormal cases	137
7.3	Selected examples	137
7.3.1	Location updating	138
7.3.2	Mobile originating call establishment.....	139
7.3.3	Mobile terminating call establishment.....	144
7.3.4	Call clearing.....	147
7.3.5	DTMF protocol control.....	148
7.3.6	Handover	149
7.3.7	In-call modification.....	151
7.3.8	Call re-establishment	152
7.3.9	Network initiated mobile originating call \$(CCBS).....	153
8	Handling of unknown, unforeseen, and erroneous protocol data	158
8.1	General	158
8.2	Message too short.....	158
8.3	Unknown or unforeseen transaction identifier SIST EN 300 940 V5.15.1:2005	158
8.4	Unknown or unforeseen message type catalog/standards/sist/1d1ceaaa..5850..4b98..ba46.....	159
8.5	Non-semantical mandatory information element errors SIST EN 300 940 V5.15.1:2005	160
8.5.1	Radio resource management	160
8.5.2	Mobility management	160
8.5.3	Call control	160
8.6	Unknown and unforeseen IEs in the non-imperative message part	161
8.6.1	IEIs unknown in the message	161
8.6.2	Out of sequence IEs	161
8.6.3	Repeated IEs	161
8.7	Non-imperative message part errors	161
8.7.1	Syntactically incorrect optional IEs	161
8.7.2	Conditional IE errors	162
8.8	Messages with semantically incorrect contents	162
9	Message functional definitions and contents.....	162
9.1	Messages for Radio Resources management.....	164
9.1.1	Additional assignment	166
9.1.1.1	Mobile Allocation	166
9.1.1.2	Starting Time.....	166
9.1.2	Assignment command.....	167
9.1.2.1	Mode of the First Channel (Channel Set 1) and Mode of Channel Set "X" (2=<X=<8).....	168
9.1.2.2	Description of the Second Channel	168
9.1.2.3	Mode of the Second Channel	168
9.1.2.4	Mobile Allocation and Frequency List, after the starting time.....	168
9.1.2.5	Starting Time.....	169
9.1.2.6	Reference cell frequency list	169
9.1.2.7	Cell Channel Description	169
9.1.2.8	Cipher Mode Setting	169
9.1.2.9	VGCS target mode Indication.....	169
9.1.2.10	Description of the multislots allocation	170

9.1.3	Assignment complete.....	170
9.1.4	Assignment failure.....	171
9.1.5	Channel mode modify.....	171
9.1.5.1	Channel Description.....	171
9.1.5.2	VGCS target mode Indication	171
9.1.6	Channel mode modify acknowledge.....	172
9.1.7	Channel release.....	173
9.1.7.1	Channel description and mobile allocation	173
9.1.7.2	Group Cipher Key Number	173
9.1.8	Channel request	173
9.1.9	Ciphering mode command.....	175
9.1.10	Ciphering mode complete	176
9.1.10.1	Mobile Equipment Identity	176
9.1.11	Classmark change	176
9.1.11.1	Additional Mobile Station Classmark Information	176
9.1.11.2	Mobile Station Classmark	177
9.1.12	Classmark enquiry	177
9.1.12a	[Spare]	177
9.1.12b	Configuration change command	177
9.1.12b.1	Description of the multislot allocation	178
9.1.12b.2	Mode of Channel Set "X" (1=<X<=8).....	178
9.1.12c	Configuration change acknowledge.....	178
9.1.12d	Configuration change reject.....	179
9.1.13	Frequency redefinition.....	180
9.1.13.1	Cell Channel Description	180
9.1.14	Handover access	180
9.1.15	Handover command	181
9.1.15.1	Synchronization Indication	182
9.1.15.2	Mode of the First Channel (Channel Set 1) and Mode of Channel Set "X" (2=<X<=8).....	182
9.1.15.3	Description of the Second Channel.....	182
9.1.15.4	Mode of the Second Channel	182
9.1.15.5	Frequency Channel Sequence SIST EN 300 940 V5.15.1:2005 Frequency short list and Mobile Allocation, after time. https://standards.iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46-ea98bc669b1f/sist-en-300-940-v5-15-1-2005	183
9.1.15.6	Starting Time.....	183
9.1.15.7	Reference cell frequency list	184
9.1.15.8	Real Time Difference	184
9.1.15.9	Timing Advance.....	184
9.1.15.10	Cipher Mode Setting	184
9.1.15.11	VGCS target mode indication	184
9.1.15.12	Description of the multislot allocation	184
9.1.16	Handover complete	185
9.1.16.1	Mobile Observed Time Difference	185
9.1.17	Handover failure	185
9.1.18	Immediate assignment	186
9.1.18.1	Mobile Allocation	186
9.1.18.2	Starting Time.....	186
9.1.18.3	IA Rest Octets (Frequency parameters, before time)	186
9.1.19	Immediate assignment extended	187
9.1.19.1	Unnecessary IEs	187
9.1.19.2	Mobile Allocation	188
9.1.19.3	Starting Time.....	188
9.1.19.4	Maximum message length.....	188
9.1.19.5	IAX Rest Octets	188
9.1.20	Immediate assignment reject.....	188
9.1.20.1	Use of the indexes	189
9.1.20.2	Filling of the message	189
9.1.20.3	IAR Rest Octets	189
9.1.21	Measurement report.....	189
9.1.21a	Notification/FACCH.....	189
9.1.21a.1	Spare	191
9.1.21a.2	Spare	191
9.1.21a.3	Spare	191

9.1.21a.4	Spare	191
9.1.21b	Notification/NCH	191
9.1.21b.1	Spare	192
9.1.21b.2	Spare	192
9.1.21d	Spare	192
9.1.22	Paging request type 1	192
9.1.22.1	Unnecessary IE	192
9.1.22.2	Channels needed for Mobiles 1 and 2	192
9.1.22.3	Mobile Identities	192
9.1.22.4	P1 Rest Octets	192
9.1.23	Paging request type 2	193
9.1.23.1	Channels needed for Mobiles 1 and 2	193
9.1.23.2	Mobile Identity 3	193
9.1.23.3	P2 Rest Octets	193
9.1.24	Paging request type 3	194
9.1.24.1	Channels needed for Mobiles 1 and 2	194
9.1.24.2	P3 Rest Octets	194
9.1.25	Paging response	195
9.1.25.1	Mobile Station Classmark	195
9.1.26	Partial release	195
9.1.26.1	Channel Description	195
9.1.27	Partial release complete	196
9.1.28	Physical information	196
9.1.29	RR Status	197
9.1.30	Synchronization channel information	197
9.1.31	System information Type 1	198
9.1.32	System information type 2	198
9.1.33	System information type 2bis	199
9.1.34	System information type 2ter	199
9.1.35	System information type 3	200
9.1.36	System information type 4	201
9.1.36.1	CBCH Channel description SIST EN 300 940 V5.15.1:2005	201
9.1.36.2	CBCH Mobile Allocation iteh.ai/catalog/standards/sist/1d1ceaaa-5850-4b98-ba46- SI 4 Rest Octets ea98bc669b1f/sist-en-300-940-v5-15-1-2005	201
9.1.36.3	SI 4 Rest Octets	201
9.1.37	System information type 5	202
9.1.38	System information type 5bis	202
9.1.39	System information type 5ter	203
9.1.40	System information type 6	204
9.1.40.1	Cell Identity	204
9.1.40.2	Location Area Identification	204
9.1.40.3	Cell Options	204
9.1.40.4	NCC permitted	204
9.1.41	System information type 7	205
9.1.42	System information type 8	205
9.1.43	System information Type 9	206
9.1.44	Talker indication	206
9.1.45	Uplink access	207
9.1.46	Uplink busy	208
9.1.47	Uplink free	208
9.1.48	Uplink release	209
9.1.49	VGCS uplink grant	210
9.1.50	System information type 10 \$(ASCI)\$	210
9.1.51	EXTENDED MEASUREMENT ORDER \$(MAFA)\$	211
9.1.52	Extended measurement report \$(MAFA)\$	211
9.2	Messages for mobility management	212
9.2.1	Authentication reject	213
9.2.2	Authentication request	213
9.2.3	Authentication response	214
9.2.4	CM Re-establishment request	214
9.2.4.1	Location area identification	214
9.2.4.2	Mobile Station Classmark	215
9.2.5	CM service accept	215

9.2.5a	CM service prompt \$(CCBS)\$.....	215
9.2.6	CM service reject.....	216
9.2.7	CM service abort.....	216
9.2.8	Abort.....	217
9.2.9	CM service request	217
9.2.9.1	Mobile Station Classmark	217
9.2.9.2	Priority	218
9.2.10	Identity request	218
9.2.11	Identity response	218
9.2.12	IMSI detach indication.....	219
9.2.12.1	Mobile Station Classmark	219
9.2.13	Location updating accept.....	219
9.2.13.1	Follow on proceed.....	219
9.2.14	Location updating reject	220
9.2.15	Location updating request.....	220
9.2.15.1	Location area identification.....	220
9.2.15.2	Mobile Station Classmark	221
9.2.15a	MM information	221
9.2.15a.1	Full name for network	221
9.2.15a.2	Short name for network.....	221
9.2.15a.3	Network time zone	221
9.2.15a.4	Universal time and time zone..	221
9.2.16	MM Status	222
9.2.17	TMSI reallocation command	222
9.2.18	TMSI reallocation complete	223
9.2.19	MM Null	223
9.3	Messages for circuit-switched call control.....	224
9.3.1	Alerting	225
9.3.1.1	Alerting (network to mobile station direction).....	225
9.3.1.1.1	Facility.....	225
9.3.1.1.2	Progress indicator	225
9.3.1.1.3	User-user	225
9.3.1.2	Alerting (mobile station to network direction).....	225
9.3.1.2.1	Facility.....	226
9.3.1.2.2	User-user	226
9.3.1.2.3	SS version.....	226
9.3.2	Call confirmed	226
9.3.2.1	Repeat indicator	227
9.3.2.2	Bearer capability 1 and bearer capability 2	227
9.3.2.3	Cause	227
9.3.2.4	CC Capabilities	227
9.3.3	Call proceeding	228
9.3.3.1	Repeat indicator	228
9.3.3.2	Bearer capability 1 and bearer capability 2	228
9.3.3.3	Facility	228
9.3.3.4	Progress Indicator	228
9.3.3.5	Priority granted	229
9.3.4	Congestion control.....	229
9.3.4.1	Cause	229
9.3.5	Connect	230
9.3.5.1	Connect (network to mobile station direction).....	230
9.3.5.1.1	Facility.....	230
9.3.5.1.2	Progress indicator	230
9.3.5.1.3	User-user	230
9.3.5.2	Connect (mobile station to network direction).....	231
9.3.5.2.1	Facility.....	231
9.3.5.2.2	User-user	231
9.3.5.2.3	SS version.....	231
9.3.6	Connect acknowledge	232
9.3.7	Disconnect	232
9.3.7.1	Disconnect (network to mobile station direction)	232
9.3.7.1.1	Facility.....	233

9.3.7.1.2	Progress indicator	233
9.3.7.1.3	User-user	233
9.3.7.1.4	Allowed actions \$(CCBS)\$	233
9.3.7.2	Disconnect (mobile station to network direction)	233
9.3.7.2.1	Facility.....	234
9.3.7.2.2	User-user	234
9.3.7.2.3	SS version.....	234
9.3.8	Emergency setup.....	234
9.3.8.1	Bearer capability	234
9.3.9	Facility	234
9.3.9.1	Facility (network to mobile station direction)	234
9.3.9.2	Facility (mobile station to network direction)	235
9.3.9.2.1	SS version.....	235
9.3.10	Hold	236
9.3.11	Hold Acknowledge	236
9.3.12	Hold Reject	237
9.3.13	Modify	237
9.3.13.1	Low layer compatibility	237
9.3.13.2	High layer compatibility	238
9.3.13.3	Reverse call setup direction.....	238
9.3.14	Modify complete.....	238
9.3.14.1	Low layer compatibility	238
9.3.14.2	High layer compatibility	238
9.3.14.3	Reverse call setup direction.....	238
9.3.15	Modify reject	239
9.3.15.1	Low layer compatibility	239
9.3.15.2	High layer compatibility	239
9.3.16	Notify	239
9.3.17	Progress	240
9.3.17.1	User-user	240
9.3.17a	CC-Establishment \$(CCBS)\$	240
9.3.17a.1	Setup container.....	241
9.3.17b	CC-Establishment confirmed \$(CCBS)\$	241
9.3.17b.1	Repeat indicator	241
9.3.17b.2	Bearer capability 1 and bearer capability 2	241
9.3.17b.3	Cause	241
9.3.18	Release	242
9.3.18.1	Release (network to mobile station direction).....	242
9.3.18.1.1	Cause	242
9.3.18.1.2	Second cause	242
9.3.18.1.3	Facility.....	242
9.3.18.1.4	User-user	242
9.3.18.2	Release (mobile station to network direction).....	243
9.3.18.2.1	Cause	243
9.3.18.2.2	Second cause	243
9.3.18.2.3	Facility.....	243
9.3.18.2.4	User-user	243
9.3.18.2.5	SS version.....	243
9.3.18a	Recall \$(CCBS)\$	244
9.3.18a.1	Recall Type	244
9.3.18a.2	Facility	244
9.3.19	Release complete	245
9.3.19.1	Release complete (network to mobile station direction)	245
9.3.19.1.1	Cause	245
9.3.19.1.2	Facility.....	245
9.3.19.1.3	User-user	245
9.3.19.2	Release complete (mobile station to network direction)	246
9.3.19.2.1	Cause	246
9.3.19.2.2	Facility.....	246
9.3.19.2.3	User-user	246
9.3.19.2.4	SS version.....	246
9.3.20	Retrieve	247