

**3rd Generation Partnership Project;  
Technical Specification Group  
GSM/EDGE Radio Access Network;  
Digital cellular telecommunications system (Phase 2+);  
Mobile Station (MS) conformance specification;  
Part 1: Conformance specification  
(Release 11)**



The present document has been developed within the 3<sup>rd</sup> Generation Partnership Project (3GPP™) and may be further elaborated for the purposes of 3GPP.

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented.  
This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification.  
Specifications and reports for implementation of the 3GPP™ system should be obtained via the 3GPP Organizational Partners' Publications Offices.

---

---

**Keywords**

GSM, mobile, MS, terminal, testing

*3GPP*

---

**Postal address**

---

**3GPP support office address**

650 Route des Lucioles - Sophia Antipolis

Valbonne - FRANCE

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

---

**Internet**

<http://www.3gpp.org>

---

**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.

© 2013, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TTA, TTC).  
All rights reserved.

---

## Contents

Foreword .....	65
1 Scope .....	66
2 References.....	66
3 Definitions, conventions and applicability.....	75
3.1 Mobile station definition and configurations .....	75
3.2 Applicability .....	76
3.2.1 Applicability of this specification .....	76
3.2.1.1 MS equipped with a connector.....	76
3.2.1.2 GPRS.....	76
3.2.2 Applicability of the individual tests.....	76
3.2.3 Applicability to terminal equipment .....	76
3.3 Definitions .....	76
3.4 Conventions for mathematical notations .....	77
3.4.1 Mathematical signs .....	77
3.4.2 Powers to the base 10 .....	77
3.5 Conventions on electrical terms .....	77
3.5.1 Radio Frequency (RF) input signal level .....	77
3.5.2 Reference sensitivity level .....	78
3.5.3 Power level of fading signal.....	78
3.6 Terms on test conditions .....	78
3.6.1 Radio test conditions .....	78
4 Test Equipment .....	79
4.1 Terms used to describe test equipment in the present document .....	79
4.2 Functional requirements of test equipment .....	80
5 Testing methodology in general (layers 1, 2, and 3) .....	80
5.1 Testing of optional functions and procedures.....	80
5.2 Test interfaces and facilities .....	80
5.3 Different protocol layers .....	80
5.4 Information to be provided by the apparatus supplier .....	81
5.5 Definitions of transmit and receive times.....	81
6 Reference test methods .....	81
6.1 General .....	81
6.2 Choice of frequencies in the frequency hopping mode.....	81
6.3 "Ideal" radio conditions.....	82
6.4 Standard test signals.....	82
6.5 Power (control) levels .....	83
7 Implicit testing .....	83
8 Measurement uncertainty.....	83
9 Format of tests.....	83
10 Generic call set up procedures.....	85
10.1 Generic call set-up procedure for mobile terminating speech calls .....	85
10.1.1 Initial conditions .....	85
10.1.2 Definition of system information messages .....	85
10.1.3 Procedure.....	88
10.1.4 Specific message contents .....	89
10.1a Generic call set-up procedure for mobile terminating signalling only connection .....	90
10.1a.1 Initial conditions .....	90
10.1a.2 Definition of system information messages .....	90
10.1a.3 Procedure.....	90
10.1a.4 Specific message contents .....	91
10.2 Generic call set-up procedure for mobile originating speech calls .....	91
10.2.1 Initial conditions .....	91

10.2.2	Definition of system information messages .....	92
10.2.3	Procedure .....	92
10.2.4	Specific message contents .....	92
10.2a	Generic call set-up procedure for mobile originating signalling only connection .....	94
10.2a.1	Initial conditions .....	94
10.2a.2	Definition of system information messages .....	94
10.2a.3	Procedure .....	94
10.2a.4	Specific message contents .....	94
10.3	Generic call set-up procedure for mobile terminating data calls .....	95
10.3.1	Initial conditions .....	95
10.3.2	Definition of system information messages .....	95
10.3.3	Procedure .....	95
10.3.4	Specific message contents .....	96
10.4	Generic call set-up procedure for mobile originating data calls .....	98
10.4.1	Initial conditions .....	98
10.4.2	Definition of system information messages .....	98
10.4.3	Procedure .....	98
10.4.4	Specific message contents .....	99
10.5	Generic call set-up procedure for mobile terminating multislot configuration, minimum number of timeslots allocated .....	101
10.5.1	Initial conditions .....	101
10.5.2	Definition of system information messages .....	101
10.5.3	Procedure .....	101
10.5.4	Specific message contents .....	102
10.6	Generic call set-up procedure for mobile originating multislot configuration, minimum number of timeslots allocated .....	104
10.6.1	Initial conditions .....	104
10.6.2	Definition of system information messages .....	104
10.6.3	Procedure .....	105
10.6.4	Specific message contents .....	105
10.7	Generic procedure for GPRS downlink data transfer .....	107
10.7.1	Initial conditions .....	107
10.7.2	Definition of system information messages .....	107
10.7.3	Procedure .....	107
10.7.4	Specific message contents .....	108
10.8	Generic procedure for GPRS uplink data transfer .....	108
10.8.1	Initial conditions .....	108
10.8.2	Definition of system information messages .....	108
10.8.3	Procedure .....	108
10.8.4	Specific message contents .....	109
10.9	Void .....	111
10.10	Void .....	111
11	General tests .....	111
11.1	Verification of support and non-support of services (multiple numbering scheme or ISDN) .....	111
11.1.1	Mobile Terminated (MT) calls .....	111
11.1.2	Mobile Originated (MO) calls .....	112
11.2	Verification of support of the single numbering scheme .....	113
11.3	Verification of non-support of services (Advice of Charge Charging (AoCC)) .....	114
11.4	Verification of non-support of services (call hold) .....	115
11.5	Verification of non-support of services (multiparty) .....	116
11.6	Verification of non-support of feature (Fixed Dialling Number (FDN)) .....	117
11.7	IMEI Security .....	118
11.7.4	Declaration .....	118
11.8	Coding of the Bearer Capability information element .....	118
11.8.1	Network to MS Direction .....	119
11.8.1.1	BS 21 to 26 - Asynchronous Service .....	119
11.8.1.1.1	BS 21 .....	119
11.8.1.1.2	BS 22 .....	122
11.8.1.1.3	BS 24 .....	123
11.8.1.1.4	BS 25 .....	123
11.8.1.1.5	BS 26 .....	123

11.8.1.1.6	BS 23.....	123
11.8.1.2	BS 31 to 34 - Synchronous Service .....	124
11.8.1.2.1	BS 32.....	124
11.8.1.2.2	BS 31.....	128
11.8.1.2.3	BS 33.....	128
11.8.1.2.4	BS 34.....	129
11.8.1.3	BS 61 - Alternate Speech / Data.....	129
11.8.1.3.1	Speech/Asynchronous Data, Transparent.....	129
11.8.1.3.2	Speech/Asynchronous Data, Non Transparent.....	131
11.8.1.3.3	Speech/Synchronous Data.....	132
11.8.1.4	BS 81 - Speech followed by Data .....	133
11.8.1.4.1	Speech followed by Asynchronous Data .....	133
11.8.1.4.2	Speech followed by Synchronous Data.....	133
11.8.1.5	TS 61 - Alternate Speech / Facsimile group 3 .....	133
11.8.1.5.1	TS 61 - Alternate Speech / Facsimile group 3, Transparent.....	134
11.8.1.5.2	TS 61 - Alternate Speech / Facsimile group 3, Non-Transparent.....	135
11.8.1.6	TS 62 - Automatic Facsimile group 3 .....	136
11.8.2	MS to SS direction .....	136
11.8.2.1	BS 21 to 26 - Asynchronous Service.....	136
11.8.2.1.1	BS 21.....	137
11.8.2.1.2	BS 22.....	140
11.8.2.1.3	BS 24.....	141
11.8.2.1.4	BS 25.....	141
11.8.2.1.5	BS 26.....	141
11.8.2.1.6	BS 23.....	141
11.8.2.2	BS 31 to 34 - Synchronous Service .....	142
11.8.2.2.1	BS 32.....	142
11.8.2.2.2	BS 31.....	146
11.8.2.2.3	BS 33.....	146
11.8.2.2.4	BS 34.....	147
11.8.2.3	BS 41 to 46 - PAD Access Asynchronous .....	147
11.8.2.3.1	<sup>2)</sup> BS 41.....	147
11.8.2.3.2	BS 42.....	148
11.8.2.3.3	BS 44.....	149
11.8.2.3.4	BS 45.....	149
11.8.2.3.5	BS 46.....	149
11.8.2.3.6	BS 43.....	149
11.8.2.4	BS 51 to 53 - Packet Service Synchronous .....	150
11.8.2.4.1	2) BS 51 .....	150
11.8.2.4.2	BS 52.....	150
11.8.2.4.3	BS 53.....	150
11.8.2.5	BS 61 - Alternate Speech / Data.....	150
11.8.2.5.1	Speech/Asynchronous Data, Transparent.....	151
11.8.2.5.2	Speech/Asynchronous Data, Non Transparent .....	153
11.8.2.5.3	Speech/Synchronous Data.....	154
11.8.2.6	BS 81 - Speech followed by Data .....	156
11.8.2.6.1	Speech followed by Asynchronous Data .....	156
11.8.2.6.2	Speech followed by Synchronous Data.....	156
11.8.2.7	TS 61 - Alternate Speech / Facsimile group 3 .....	156
11.8.2.7.1	TS 61 - Alternate Speech / Facsimile group 3, Transparent.....	157
11.8.2.7.2	TS 61 - Alternate Speech / Facsimile group 3, Non Transparent .....	158
11.8.2.8	TS 62 - Automatic Facsimile group 3 .....	158
11.8.2.9	TS 11 and TS 12 - Speech.....	159
11.8.2.9.1	Support of only full/half rate speech version 1.....	159
11.8.2.9.2	Support of speech full rate version 2 (Enhanced Full Rate) .....	159
11.8.2.9.3	Support of full rate speech version 2 (EFR) and full and/or half rate speech version 3 (AMR) .....	160
12	Transceiver.....	164
12.1	Conducted spurious emissions .....	164
12.1.1	MS allocated a channel .....	164
12.1.2	MS in idle mode .....	167
12.2	Radiated spurious emissions.....	169

12.2.1	MS allocated a channel .....	169
12.2.2	MS in idle mode .....	171
12.3	Conducted spurious emissions for MS supporting the R-GSM frequency band .....	173
12.3.1	MS allocated a channel .....	173
12.3.2	MS in idle mode .....	175
12.4	Radiated spurious emissions for MS supporting the R-GSM frequency band .....	176
12.4.1	MS allocated a channel .....	177
12.4.2	MS in idle mode .....	178
13	Transmitter .....	180
13.1	Frequency error and phase error .....	180
13.1.1	Definition .....	180
13.1.2	Conformance requirement .....	180
13.1.3	Test purpose .....	181
13.1.4	Method of test .....	181
13.1.5	Test requirements .....	183
13.1a	Frequency error in VAMOS configuration .....	183
13.1b	Frequency error and phase error in TIGHTER configuration \ with legacy TSC in VAMOS mode .....	184
13.2b	Frequency error under multipath and interference conditions in TIGHTER configuration \ with legacy TSC in VAMOS mode .....	186
13.2	Frequency error under multipath and interference conditions .....	188
13.2.1	Definition .....	188
13.2.2	Conformance requirement .....	188
13.2.3	Test purpose .....	188
13.2.4	Method of test .....	189
13.2.5	Test requirements .....	190
13.2a	Frequency error under multipath and interference conditions in VAMOS configuration .....	190
13.3	Transmitter output power and burst timing .....	192
13.3.1	Definition .....	192
13.3.2	Conformance requirement .....	193
13.3.3	Test purpose .....	194
13.3.4	Methods of test .....	194
13.3.5	Test requirements .....	197
13.4	Output RF spectrum .....	200
13.4.1	Definition .....	200
13.4.2	Conformance requirement .....	200
13.4.3	Test purpose .....	201
13.4.4	Method of test .....	202
13.4.5	Test requirements .....	204
13.5	Void .....	208
13.6	Frequency error and phase error in HSCSD multislot configurations .....	208
13.6.1	Definition .....	208
13.6.2	Conformance requirement .....	208
13.6.3	Test purpose .....	209
13.6.4	Method of test .....	209
13.6.5	Test requirements .....	211
13.7	Transmitter output power and burst timing in HSCSD configurations .....	211
13.7.1	Definition .....	211
13.7.2	Conformance requirement .....	211
13.7.3	Test purpose .....	213
13.7.4	Methods of test .....	214
13.7.5	Test requirements .....	217
13.8	Output RF spectrum in HSCSD multislot configuration .....	223
13.8.1	Definition .....	223
13.8.2	Conformance requirement .....	223
13.8.3	Test purpose .....	224
13.8.4	Method of test .....	224
13.8.5	Test requirements .....	226
13.9	Output RF spectrum for MS supporting the R-GSM band .....	230
13.9.1	Definition .....	230
13.9.2	Conformance requirement .....	230
13.9.3	Test purpose .....	231

13.9.4	Method of test.....	231
13.9.5	Test requirements .....	233
13.10	Void .....	235
13.11	Void .....	235
13.12	Void .....	235
13.13	Void .....	235
13.14	Void .....	235
13.15	Void .....	235
13.16	GPRS transmitter tests.....	235
13.16.1	Frequency error and phase error in GPRS multislot configuration .....	235
13.16.2	Transmitter output power in GPRS multislot configuration .....	238
13.16.3	Output RF spectrum in GPRS multislot configuration .....	250
13.17	EGPRS transmitter tests .....	258
13.17.1	Frequency error and Modulation accuracy in EGPRS Configuration .....	258
13.17.1a	Frequency error and Modulation accuracy in EGPRS2A Configuration .....	261
13.17.2	Frequency error under multipath and interference conditions.....	265
13.17.2a	Frequency error under multipath and interference conditions for EGPRS2A configuration .....	268
13.17.3	EGPRS Trans mitter output power.....	270
13.17.3a	Transmitter output power in EGPRS2A configuration .....	279
13.17.4	Output RF spectrum in EGPRS configuration .....	289
13.17.4a	Output RF spectrum in EGPRS2A configuration .....	296
13.17.5	Void .....	306
14	Receiver .....	307
14.1	Bad frame indication .....	313
14.1.1	Bad frame indication - TCH/FS .....	313
14.1.2	Bad frame indication - TCH/HS .....	315
14.1.3	Void .....	317
14.1.4	Void .....	317
14.1.5	Bad frame indication - TCH/AFS (Speech frame) .....	317
14.1.6	Bad frame indication - TCH/AHS .....	319
14.1.6.1	Bad frame indication - TCH/AHS - Random RF input.....	319
14.1.7	Void .....	320
14.2	Reference sensitivity .....	320
14.2.1	Reference sensitivity - TCH/FS .....	320
14.2.1a	Reference sensitivity - TCH/FS in TIGHTER configuration .....	322
14.2.2	Reference sensitivity - TCH/HS (Speech frames) .....	324
14.2.2a	Reference sensitivity - TCH/HS in TIGHTER configuration .....	326
14.2.3	Reference sensitivity - FACCH/F .....	328
14.2.3a	Reference sensitivity - FACCH/F in TIGHTER configuration .....	329
14.2.4	Reference sensitivity - FACCH/H .....	330
14.2.4a	Reference sensitivity - FACCH/H in TIGHTER configuration .....	331
14.2.5	Reference sensitivity - full rate data channels.....	332
14.2.6	Reference sensitivity - half rate data channels .....	333
14.2.7	Reference sensitivity - TCH/EFS .....	334
14.2.7a	Reference sensitivity - TCH/EFS in TIGHTER configuration .....	336
14.2.8	Reference sensitivity - full rate data channels in multislot configuration .....	338
14.2.9	Reference sensitivity - TCH/FS for MS supporting the R-GSM band .....	339
14.2.10	Reference sensitivity - TCH/AFS .....	341
14.2.10a	Reference sensitivity - TCH/AFS in TIGHTER configuration .....	344
14.2.11 to 14.2.17	Void .....	347
14.2.18	Reference sensitivity - TCH/AHS .....	347
14.2.18a	Reference sensitivity - TCH/AHS in TIGHTER configuration .....	354
14.2.19	Reference sensitivity - TCH/AFS-INB .....	359
14.2.20	Reference sensitivity - TCH/AHS-INB.....	361
14.2.21	Reference sensitivity – O-TCH/AHS .....	362
14.2.22	Reference sensitivity – O-TCH/WFS .....	365
14.2.23	Reference sensitivity – O-TCH/WHS .....	367
14.2.24	Reference sensitivity - TCH/WFS .....	370
14.2.24a	Reference sensitivity - TCH/WFS in TIGHTER configuration .....	374
14.2.25	Reference sensitivity – Repeated FACCH/F .....	379
14.2.26	Reference sensitivity – Repeated SACCH.....	382

14.2.27	Reference sensitivity - TCH/FS – DARP Phase II .....	384
14.2.28	Reference sensitivity TCH/HS in VAMOS configuration .....	387
14.2.29	Reference sensitivity TCH/EFS in VAMOS configuration .....	390
14.2.30	Reference sensitivity TCH/AFS in VAMOS configuration .....	393
14.2.31	Reference sensitivity TCH/AHS in VAMOS configuration .....	397
14.2.32	Reference sensitivity TCH/WFS in VAMOS configuration .....	401
14.2.33	Reference sensitivity FA CCH/F performance in VAMOS configuration .....	406
14.2.34	Reference sensitivity – FA CCH/H Performance in VAMOS configuration .....	408
14.2.35	Reference sensitivity SA CCH performance in VAMOS configuration .....	410
14.2.36	Reference sensitivity – Repeated SACCH in VAMOS configuration .....	413
14.2.37	Reference sensitivity – Repeated FACCH/F in VAMOS configuration .....	415
14.3	Usable receiver input level range.....	417
14.4	Co-channel rejection .....	419
14.4.1	Co-channel rejection - TCH/FS .....	419
14.4.1a	Co-channel rejection - TCH/FS in TIGHTER configuration .....	421
14.4.2	Co-channel rejection - TCH/HS .....	422
14.4.2a	Co-channel rejection - TCH/HS in TIGHTER configuration.....	424
14.4.3	Void .....	426
14.4.4	Co-channel rejection - FA CCH/F.....	426
14.4.4a	Co-channel rejection - FA CCH/F in TIGHTER configuration .....	427
14.4.5	Co-channel rejection - FA CCH/H .....	428
14.4.5a	Co-channel rejection - FA CCH/H in TIGHTER configuration .....	429
14.4.6	Co-channel rejection - TCH/EFS .....	430
14.4.6a	Co-channel rejection - TCH/EFS in TIGHTER configuration .....	431
14.4.7	Receiver performance in the case of frequency hopping and co-channel interference on one carrier .....	433
14.4.8	Co-channel rejection - TCH/AFS .....	434
14.4.8a	Co-channel rejection - TCH/AFS in TIGHTER configuration .....	438
14.4.9 to 14.4.15	Void.....	441
14.4.16	Co-channel rejection - TCH/AHS .....	441
14.4.16a	Co-channel rejection - TCH/AHS in TIGHTER configuration .....	447
14.4.17	Co-channel rejection - TCH/AFS-INB.....	451
14.4.18	Co-channel rejection - TCH/AHS-INB .....	453
14.4.19	Co-channel rejection - O-TCH/AHS .....	455
14.4.20	Co-channel rejection – O-TCH/AHS-INB.....	458
14.4.21	Co-channel rejection – O-FA CCH/H .....	460
14.4.22 to 14.4.23	Void.....	462
14.4.24	Co-channel interference - O-TCH/WFS .....	462
14.4.25	Co-channel interference – O-TCH/WHS .....	465
14.4.26	Co-channel rejection - O-TCH/WFS-INB .....	468
14.4.27	Void .....	470
14.4.28	Co-channel rejection - TCH/WFS .....	470
14.4.28a	Co-channel rejection - TCH/WFS in TIGHTER configuration .....	475
14.4.29	Co-channel interference - TCH/WFS-INB .....	478
14.4.30	Co-channel interference - O-FACCH/F .....	480
14.4.31	Co-channel rejection – Repeated FACCH/F .....	482
14.4.32	Co-channel rejection – Repeated SACCH .....	485
14.5	Adjacent channel rejection.....	488
14.5.1	Adjacent channel rejection - speech channels .....	488
14.5.1.1	TCH/FS.....	488
14.5.1.1a	Adjacent Channel Interference - TCH/FS in TIGHTER configuration.....	490
14.5.1.2	TCH/AFS .....	492
14.5.1.2a	Adjacent channel rejection - TCH/AFS in TIGHTER configuration .....	497
14.5.1.3	TCH/AHS .....	501
14.5.1.3a	Adjacent channel rejection - TCH/AHS in TIGHTER configuration.....	505
14.5.1.4	O-TCH/AHS .....	509
14.5.1.5	O-TCH/WFS .....	512
14.5.1.6	Adjacent channel interference O-TCH/WHS .....	516
14.5.1.7	TCH/WFS Adjacent Channel Interference .....	519
14.5.1.7a	Adjacent Channel Interference - TCH/WFS in TIGHTER configuration .....	523
14.5.2	Adjacent channel rejection - control channels .....	526
14.6	Intermodulation rejection .....	528
14.6.1	Intermodulation rejection - speech channels .....	528

14.6.2	Intermodulation rejection - control channels .....	530
14.7	Blocking and spurious response.....	531
14.7.1	Blocking and spurious response - speech channels .....	531
14.7.2	Blocking and spurious response - control channels .....	537
14.7.3	Blocking and spurious response - speech channels for MS supporting the R-GSM band .....	542
14.7.4	Blocking and spurious response - control channels for MS supporting the R-GSM band .....	545
14.8	AM suppression.....	548
14.8.1	AM suppression - speech channels .....	548
14.8.2	AM suppression - control channels.....	550
14.8.3	AM suppression - packet channels.....	551
14.9	Paging performance at high input levels .....	553
14.10	Performance of the Codec Mode Request Generation for Adaptive Multi-Rate Codecs .....	554
14.10.1	Performance of the Codec Mode Request Generation – TCH/AFS .....	554
14.10.2	Performance of the Codec Mode Request Generation – TCH/AHS .....	560
14.10.3	Performance of the Codec Mode Request Generation – TCH/AFS - improved RX .....	566
14.10.4	Performance of the Codec Mode Request Generation – TCH/AHS – improved RX .....	574
14.10.5	Performance of the Codec Mode Request Generation – O-TCH/AHS .....	582
14.10.6	Performance of the Codec Mode Request Generation – O-TCH/WFS .....	588
14.10.7	Performance of the Codec Mode Request Generation – O-TCH/WHS .....	594
14.10.8	Performance of the Codec Mode Request Generation – TCH/WFS .....	599
14.10.9	Performance of the Codec Mode Request Generation – TCH/WFS - improved RX .....	605
14.11	DARP Phase 1 Speech bearer tests .....	613
14.11.1	TCH/FS .....	613
14.11.1.1	DTS-1 .....	613
14.11.1.1a	DARP Phase 1 Speech bearer test TCH/FS DTS-1 in TIGHTER configuration .....	616
14.11.2	TCH/AFS .....	618
14.11.2.1	DTS-1 .....	618
14.11.2.1a	DARP Phase 1 Speech bearer test TCH/AFS DTS-1 in TIGHTER configuration .....	622
14.11.2.2	DTS-4.....	625
14.11.2.2a	DARP Phase 1 Speech bearer test TCH-AFS DTS-4 in TIGHTER configuration .....	628
14.11.2.3	DTS-2/3/5.....	630
14.11.2.3a	DARP Phase 1 Speech bearer test TCH/AFS DTS-2/3/5 in TIGHTER configuration .....	634
14.11.3	TCH/AHS .....	637
14.11.3.1	DTS-1 .....	637
14.11.3.1a	DARP Phase 1 Speech bearer test TCH/AHS DTS-1 in TIGHTER configuration .....	641
14.11.3.2	Void .....	644
14.11.3.3	DTS-2/3 .....	644
14.11.3.3a	DARP Phase 1 Speech bearer test - TCH-AHS / DTS-2/3 in TIGHTER configuration .....	648
14.12	DARP Phase 1 Signalling bearer tests .....	651
14.12.1	FACCH/F .....	651
14.12.1.1	FACCH – DTS-1 .....	651
14.12.1.2	FACCH – DTS-2-3.....	655
14.12.1.2a	DARP Phase 1 Signalling bearer test - FACCH – DTS-2-3 in TIGHTER configuration .....	658
14.13	Void .....	661
14.14	Void .....	661
14.15	Void .....	661
14.16	GPRS receiver tests.....	661
14.16.1	Minimum Input level for Reference Performance .....	663
14.16.1a	Minimum Input level for Reference Performance in TIGHTER configuration .....	666
14.16.2	Co-channel rejection .....	671
14.16.2.1	Co-channel rejection for packet channels .....	671
14.16.2.1a	Co-channel rejection for packet channels – TIGHTER configuration .....	673
14.16.3	Acknowledged mode / Downlink TBF / I_LEVEL measurement report .....	676
14.16.3.1	Conformance requirements .....	676
14.16.3.2	References .....	676
14.16.3.3	Test purpose.....	676
14.16.3.4	Method of test.....	677
14.16.3.5	Initial Conditions .....	677
14.16.3.6	Void .....	677
14.16.3.7	Test Procedure.....	677
14.16.4	DARP Phase 1 GPRS tests .....	678
14.16.4.1	Synchronous single co-channel interferer (DTS-1) .....	678

14.16.4.1a	Synchronous single co-channel interferer (DTS-1) in TIGHTER configuration.....	680
14.16.4.2	Synchronous multiple interferers (DTS-2 / DTS-3) .....	682
14.16.4.2a	Synchronous multiple interferers (DTS-2 / DTS-3) in TIGHTER configuration.....	685
14.16.5	DARP Phase II GPRS tests .....	687
14.16.5.1	Synchronous single co-channel interferer (DTS-1) .....	687
14.16.5.2	Multiple interferers (DTS-2 / DTS-5) .....	689
14.17	692	
14.18	EGPRS receiver tests .....	692
14.18.1	Minimum Input level for Reference Performance .....	695
14.18.1a	Minimum Input level for Reference Performance in EGPRS2A Configuration.....	700
14.18.1b	Minimum Input level for Reference Performance in TIGHTER configuration .....	706
14.18.1c	Minimum Input level for Reference Performance – in TIGHTER configuration.....	712
14.18.2	Co-channel rejection .....	718
14.18.2a	Co-channel rejection in EGPRS2A .....	722
14.18.2b	Co-channel rejection – in TIGHTER configuration .....	727
14.18.2c	Co-channel rejection in EGPRS2A with TIGHTER configuration .....	730
14.18.3	Adjacent channel rejection .....	736
14.18.3a	Adjacent channel rejection in EGPRS2A configuration .....	741
14.18.3b	Adjacent channel rejection for packet channels in TIGHTER configuration .....	748
14.18.3c	Adjacent channel rejection in EGPRS2A configuration with TIGHTER configuration .....	754
14.18.4	Intermodulation rejection.....	761
14.18.4a	Intermodulation rejection in EGPRS2A configuration.....	764
14.18.5	Blocking and spurious response .....	768
14.18.5a	Blocking and spurious response in EGPRS2A configuration .....	777
14.18.6	EGPRS Usable receiver input level range .....	787
14.18.6a	EGPRS Usable receiver input level range in EGPRS2A Configuration .....	789
14.18.7	Incremental Redundancy Performance.....	791
14.18.7a	Incremental Redundancy Performance in EGPRS2A configuration.....	793
14.18.8	DARP Phase 1 EGPRS tests .....	794
14.18.8.1	Synchronous single co-channel interferer (DTS-1) .....	794
14.18.8.1a	Synchronous single co-channel interferer (DTS-1) in TIGHTER configuration.....	796
14.18.8.2	Synchronous single co-channel interferer (DTS-2 / DTS-3).....	798
14.18.8.2a	Synchronous single co-channel interferer (DTS-2 / DTS-3) in TIGHTER configuration .....	800
14.18.9	DARP Phase II EGPRS tests.....	803
14.18.9.1	Synchronous single co-channel interferer (DTS-1) .....	803
14.18.9.2	Synchronous single co-channel interferer (DTS-1b) .....	805
14.18.9.3	Multiple interferers (DTS-2 / DTS-5) .....	807
14.18.10	Latency Reductions.....	810
14.18.10.1	Minimum Input level for Reference Performance for PAN .....	810
14.19	DARP Phase II Speech bearer tests.....	813
14.19.1	TCH/FS .....	813
14.19.2	TCH/AFS.....	816
14.19.3	TCH/AHS .....	823
14.20	VAMOS speech bearer tests.....	829
14.20.1	TCH HS – VDTS-1, VDTS-2/3 and VDTS-4.....	829
14.20.2	TCH EFS – VDTS-1, VDTS-2/3 and VDTS-4.....	837
14.20.3	TCH AFS – VDTS-1, VDTS-2/3 and VDTS-4 .....	845
14.20.4	TCH AHS – VDTS-1, VDTS-2/3 and VDTS-4 .....	855
14.20.5	TCH WFS – VDTS-1, VDTS-2/3 and VDTS-4 .....	863
14.20.6	FACCH/F – VDTS-1 .....	871
14.20.7	FACCH/H – VDTS-1 .....	873
14.20.8	SACCH – VDTS-1 .....	876
14.20.9	Repeated FACCH/F – VDTS-1 .....	879
14.20.10	Repeated SACCH – VDTS-1.....	881
14.20.11	Downlink DTX TCH / AHS in VAMOS configuration .....	883
15	Timing advance and absolute delay .....	886
15.1	GSM Timing advance and absolute delay.....	886
15.2	Void .....	887
15.3	Void .....	887
15.4	Void .....	887
15.5	Void .....	887

15.6	GPRS Timing advance and absolute delay .....	887
15.7	ECSD Timing advance and absolute delay.....	891
15.8	EGPRS timing advance and absolute delay.....	892
15.9	Timing Advance whilst in DTM .....	896
16	Reception time tracking speed.....	898
17	Access times during handover.....	900
17.1	Intra cell channel change.....	900
17.2	Inter cell handover.....	903
18	Temporary reception gaps.....	906
18.1	Temporary reception gaps, single slot .....	906
18.2	Temporary reception gaps in HSCSD multilot configurations .....	907
19	Channel release after unrecoverable errors .....	909
19.1	Channel release after unrecoverable errors - 1 .....	909
19.2	Channel release after unrecoverable errors - 2 .....	910
19.3	Channel release after unrecoverable errors - 3 .....	911
20	Cell selection and reselection .....	912
20.1	Cell selection .....	914
20.2	Cell selection with varying signal strength values.....	915
20.3	Basic cell reselection.....	917
20.4	Cell reselection using TEMPORARY_OFFSET, CELL_RESELECT_OFFSET, POWER_OFFSET and PENALTY_TIME parameters .....	920
20.5	Cell reselection using parameters transmitted in the System Information type 2bis, type 2ter, type 7 and type 8 messages .....	921
20.6	Cell reselection timings .....	923
20.7	Priority of cells.....	924
20.8	Cell reselection when C1 (serving cell) < 0 for 5 s .....	926
20.9	Running average of the surrounding cell BCCH carrier signal levels .....	927
20.10	Running average of the serving cell BCCH carrier signal level.....	928
20.11	Updating the list of six strongest neighbour carriers and decoding the BCCH information of a new carrier on the list .....	929
20.12	Decoding the BCCH information of the neighbour carriers on the list of six strongest neighbour carriers .....	930
20.13	Decoding the BSIC of the neighbour carriers on the list of six strongest neighbour carriers .....	931
20.14	Emergency calls .....	932
20.15	Cell reselection due to MS rejection "LA not allowed" .....	933
20.16	Downlink signalling failure .....	934
20.17	Cell selection if no suitable cell found in 10 s .....	936
20.18	Cell reselection due to MS rejection "Roaming not allowed in this LA" .....	936
20.19	Cell selection on release of SDCCH and TCH.....	938
20.20	Multiband cell selection and reselection .....	939
20.20.1	Multiband cell selection and reselection / Cell Selection .....	939
20.20.2	Multiband cell selection and reselection / Cell reselection .....	941
20.21	R-GSM cell selection and reselection .....	943
20.21.1	R-GSM cell selection .....	944
20.21.2	R-GSM cell selection with varying signal strength values .....	946
20.21.3	R-GSM basic cell reselection .....	948
20.21.4	R-GSM cell reselection using TEMPORARY_OFFSET, CELL_RESELECT_OFFSET, POWER_OFFSET and PENALTY_TIME parameters .....	950
20.21.5	R-GSM cell reselection using parameters transmitted in the System Information type 2bis, type 2ter, type 7 and type 8 messages .....	951
20.21.6	R-GSM cell reselection timings.....	953
20.21.7	R-GSM priority of cells .....	954
20.21.8	R-GSM cell reselection when C1 (serving cell) < 0 for 5 s .....	956
20.21.9	R-GSM running average of the surrounding cell BCCH carrier signal levels .....	957
20.21.10	R-GSM running average of the serving cell BCCH carrier signal level .....	958
20.21.11	Updating the list of six strongest neighbour carriers and decoding the BCCH information of a new carrier on the list .....	959
20.21.12	R-GSM decoding the BCCH information of the neighbour carriers on the list of six strongest neighbour carriers .....	960
20.21.13	R-GSM decoding the BSIC of the neighbour carriers on the list of six strongest neighbour carriers .....	961

20.21.14	R-GSM emergency calls .....	962
20.21.15	R-GSM cell reselection due to MS rejection "LA not allowed" .....	963
20.21.16	R-GSM downlink signalling failure .....	964
20.21.17	R-GSM cell selection if no suitable cell found in 10 s .....	966
20.21.18	R-GSM cell reselection due to MS rejection "Roaming not allowed in this LA" .....	966
20.21.19	R-GSM cell selection on release of SDCCH and TCH .....	968
20.22	GPRS Cell Selection and Reselection .....	969
20.22.1	Void .....	971
20.22.2	Void .....	971
20.22.3	Void .....	971
20.22.4	Void .....	971
20.22.5	Void .....	971
20.22.6	Void .....	971
20.22.7	Void .....	971
20.22.8	Cell selection when the best cell does not support GPRS .....	971
20.22.9	Cell reselection when the best cell does not support GPRS .....	972
20.22.10	Void .....	975
20.22.11	Void .....	975
20.22.12	Cell Selection on "LA Not Allowed" .....	975
20.22.13	Void .....	976
20.22.14	Void .....	976
20.22.15	Cell Reselection/ ready state / no reselection .....	976
20.22.16	Cell Reselection/ ready state/ Reselection and Cell update procedure .....	977
20.22.17	C2 reselection in another RA - no cell reselection .....	979
20.22.18	C2 reselection in another Routing Area - Routing Area Update .....	980
20.22.19	Borders between routing areas - reselection of a GPRS cell in a homogenous network .....	982
20.22.20	Void .....	983
20.22.21	Void .....	983
20.22.22	Cell Reselection with cells in different Routing area .....	983
20.22.23	Void .....	985
20.22.24	Void .....	985
20.22.25	Void .....	985
20.22.26	Void .....	985
20.22.27	Void .....	985
20.22.28	Void .....	985
20.22.29	Packet Measurement order procedure / Downlink transfer / Normal case/ 3G cell reselection dedicated parameters .....	985
20.22.29a	Packet Measurement order procedure / Downlink transfer / Normal case/ 3G cell reselection dedicated parameters with GEA2 and UEA2 ciphering .....	991
20.22.29b	Packet Measurement order procedure / Downlink transfer / Normal case/ 3G cell reselection dedicated parameters with GEA3 and UEA2 ciphering .....	991
20.22.29c	Packet Measurement order procedure / Downlink transfer / Normal case/ 3G cell reselection dedicated parameters with GEA4 and UEA2 ciphering .....	992
20.22.30	Cell Reselection/usage of BA(GPRS) .....	992
20.22.30.1	Cell Reselection/usage of BA(GPRS)/ Most suitable cell not in BA(GPRS) .....	992
20.22.30.2	Cell Reselection / usage of BA(GPRS) / Change of BA(GPRS) .....	993
20.22.30.3	Cell Reselection/usage of BA(GPRS)/ Measurement on first 32 entries .....	994
20.22.31	Network controlled cell reselection / Transfer mode .....	995
20.22.31.1	Network controlled cell reselection / Downlink transfer / Normal case/ Location and Routing Area Update/ NMO I .....	995
20.22.31.2	Network controlled cell reselection / Downlink transfer / Normal case/ Location and Routing Area Update/ NMO II .....	997
20.23	Void .....	998
20.24	SoLSA Cell Selection and Reselection .....	999
20.24.1	SoLSA Cell Selection suitable cell .....	1004
20.24.1.4.1	SoLSA Cell Selection suitable cell / LSA identified by LSA ID .....	1005
20.24.1.4.2	SoLSA Cell Selection suitable cell / LSA identified by LAC + CI .....	1006
20.24.1.4.3	SoLSA Cell Selection suitable cell / LSA identified by CI .....	1008
20.24.1.4.4	SoLSA Cell Selection suitable cell / LSA identified by LAC .....	1009
20.24.2	SoLSA Cell (Re)Selection Emergency Call .....	1010
20.24.3	SoLSA Cell Reselection / idle mode support enabled .....	1012
20.24.3.1	General conformance requirement .....	1012

20.24.3.2	SoLSA Cell Reselection / idle mode support enabled / LSA Priority .....	1013
20.24.3.3	SoLSA Cell Reselection / idle mode support enabled / LSA Priority / different location area .....	1015
20.24.3.4	SoLSA Cell Reselection / idle mode support enabled / Priority Threshold .....	1018
20.24.3.5	SoLSA Cell Reselection / idle mode support enabled / LSA Priority / LSA_OFFSET .....	1021
20.24.3.6	SoLSA Cell Reselection / idle mode support enabled / LSA Priority / cell combinations .....	1022
20.24.3.7	SoLSA Cell Reselection / roaming .....	1025
20.24.4	SolSA Cell Reselection / idle mode support / any value .....	1027
20.24.5	SolSA Cell Reselection / LSA indication for idle mode .....	1028
20.24.5.1	General Definition .....	1029
20.24.5.2	General conformance requirement .....	1029
20.24.5.3	SolSA Cell Reselection / LSA indication for idle mode / idle mode support enabled .....	1029
20.24.5.4	SolSA Cell Reselection / LSA indication for idle mode / idle mode support disabled .....	1030
20.25	Intersystem Cell Reselection .....	1032
20.25.1	Definition of system information messages .....	1032
20.25.2	Intersystem Cell Reselection/Idle Mode/FDD_Qmin .....	1035
20.25.3	Intersystem Cell Reselection/Idle Mode/FDD_Qoffset .....	1037
20.25.3a	Intersystem Cell Reselection/Idle Mode/TDD_Qoffset (1.28Mcps TDD) .....	1039
20.25.4	Intersystem Cell Reselection/Idle Mode/Qsearch_I .....	1041
20.25.5	Intersystem Cell Reselection / Idle Mode / High Priority .....	1044
20.25.6	Intersystem Cell Reselection / Idle Mode / Low Priority .....	1045
20.25.7	Intersystem Cell Reselection / Idle Mode / H_PRIO .....	1047
20.26	Decoding of BCCH including information for UTRAN TDD cells .....	1049
21	Received signal measurements .....	1052
21.1	Signal strength .....	1052
21.2	Signal strength selectivity .....	1056
21.3	Signal quality under static conditions .....	1059
21.3.1	Signal quality under static conditions - TCH/FS no DTX .....	1059
21.3.2	Signal quality under static conditions - TCH/HS .....	1061
21.3.3	Signal quality under static conditions - TCH/AFS – DTX off .....	1063
21.3.4	Signal quality under static conditions - TCH/AHS - DTX Off .....	1065
21.3.5	Signal quality under static conditions - TCH/AFS – DTX on .....	1068
21.3.6	Signal quality under static conditions - TCH/AHS – DTX On .....	1070
21.4	Signal quality under TUhigh propagation conditions .....	1072
21.4.1	Signal quality under TUhigh propagation conditions - TCH/FS .....	1072
21.4.2	Signal quality under TUhigh propagation conditions - TCH/AFS .....	1074
21.4.3	Signal quality under TUhigh propagation conditions - TCH/AHS .....	1076
21.4.4	Signal quality under TU High propagation conditions - O-TCH/WFS .....	1079
21.5 to 21.7	Void .....	1081
21.8	GMSK_MEAN_BEP Measurement for PDTCH .....	1081
21.9	8PSK_MEAN_BEP Measurement for PDTCH .....	1084
21.10	Measurement accuracy for inter-RAT system(TDD) .....	1088
21.10.1	1,28Mcps TDD Option .....	1088
21.10.1.1	1.28Mcps TDD / P-CCPCH RSCP Measurement absolute accuracy in AWGN propagation condition .....	1088
21.11a	MEAN_BEP 16-QAM in EGPRS2-A Configuration .....	1090
21.12a	MEAN_BEP 32-QAM in EGPRS2-A Configuration .....	1093
21.13	AQPSK_MEAN_BEP measurement for VAMOS -I/II .....	1096
22	Transmit power control timing and confirmation .....	1100
22.1	Transmit power control timing and confirmation, single slot .....	1100
22.2	Void .....	1102
22.3	GPRS Uplink Power Control - Use of $\alpha$ and $\Gamma_{CH}$ parameters .....	1102
22.4	GPRS Uplink Power Control - Independence of TS Power Control .....	1105
22.5	Void .....	1107
22.6	Normal transmit power control timing and confirmation in ECSD .....	1107
22.7	ECSD Fast Power Control (FPC) timing and interworking with normal power control .....	1109
22.8	EGPRS Uplink Power Control - Use of $\alpha$ and $\Gamma_{CH}$ parameters .....	1112
22.8a	EGPRS2A Uplink Power Control - Use of $\alpha$ and $\Gamma_{CH}$ parameters .....	1115
22.9	EGPRS Uplink Power Control - Independence of TS Power Control .....	1118
22.9a	EGPRS2A Uplink Power Control - Independence of TS Power Control .....	1121
22.10	Void .....	1123

22.11	Power control in exclusive allocation mode .....	1123
22.12	Downlink power control, PR mode A, GPRS TBF .....	1124
22.13	Enhanced Power Control (EPC) timing and measurement reporting in single slot operation. ....	1127
22.14	Enhanced Power Control (EPC) timing and measurement reporting in multislot operation. ....	1130
23	Single frequency reference.....	1134
24	Tests of the layer 1 signalling functions .....	1134
25	Tests of the layer 2 signalling functions .....	1134
25.1	Introduction, objective and scope.....	1134
25.1.1	General .....	1134
25.1.2	Test configurations.....	1135
25.1.3	Pre-conditions .....	1135
25.1.4	Layer 2 test frames .....	1135
25.1.5	Establishment of the dedicated physical resource .....	1136
25.1.6	Release of the dedicated physical resource.....	1136
25.2	Test sequences.....	1136
25.2.1	Initialization .....	1138
25.2.1.1	Initialization when contention resolution required.....	1138
25.2.1.1.1	Normal initialization .....	1138
25.2.1.1.2	Initialization failure .....	1139
25.2.1.1.3	Initialization denial .....	1141
25.2.1.1.4	Total initialization failure .....	1142
25.2.1.2	Initialization, contention resolution not required .....	1143
25.2.1.2.1	Normal initialization without contention resolution.....	1143
25.2.1.2.2	Initialization failure .....	1144
25.2.1.2.3	Initialization denial .....	1145
25.2.1.2.4	Total initialization failure .....	1146
25.2.2	Normal information transfer.....	1147
25.2.2.1	Sequence counting and I frame acknowledgements .....	1147
25.2.2.2	Receipt of an I frame in the timer recovery state .....	1150
25.2.2.3	Segmentation and concatenation.....	1152
25.2.3	Normal layer 2 disconnection .....	1155
25.2.4	Test of link failure .....	1156
25.2.4.1	I frame loss (MS to SS).....	1156
25.2.4.2	RR response frame loss (SS to MS) .....	1157
25.2.4.3	RR response frame loss (MS to SS) .....	1157
25.2.5	Test of frame transmission with incorrect C/R values .....	1158
25.2.5.1	I frame with C bit set to zero .....	1158
25.2.5.2	SABM frame with C bit set to zero .....	1159
25.2.6	Test of errors in the control field .....	1160
25.2.6.1	N(S) sequence error .....	1160
25.2.6.2	N(R) sequence error .....	1162
25.2.6.3	Improper F bit .....	1162
25.2.7	Test on receipt of invalid frames .....	1163
26	Testing of layer 3 functions.....	1168
26.1	Default conditions and structured sequence of tests.....	1168
26.1.1	Default test conditions during layer 3 tests.....	1168
26.1.2	Structured sequence of the tests.....	1173
26.1.3	General rules for message parameters .....	1173
26.1.4	General rules for layer 3 testing.....	1173
26.1.5	Format of layer 3 test descriptions .....	1174
26.2	Initial tests.....	1175
26.2.1	Channel request .....	1175
26.2.1.1	Channel request / initial time .....	1175
26.2.1.2	Channel request / repetition time .....	1176
26.2.1.3	Channel request / random reference .....	1178
26.2.2	IMSI detach and IMSI attach .....	1179
26.2.3	Sequenced MM / CM message transfer .....	1183
26.2.4	Establishment cause.....	1184
26.3	Test of MS functions in idle mode .....	1191

26.3.1	Initial conditions .....	1191
26.3.2	MS indication of available PLMNs .....	1197
26.3.3	MS will send only if BSS is "on air" .....	1197
26.3.4	Manual mode of PLMN selection .....	1198
26.4	Lower layer failures in layer 3 testing .....	1199
26.4.1	Introduction.....	1199
26.4.2	Layer 1 reception failures .....	1200
26.4.3	Data link layer failures .....	1200
26.4.4	Lower layer failures, used for the tests in clause 25 .....	1200
26.5	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions .....	1200
26.5.1	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / unknown protocol discriminator.....	1200
26.5.2	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / TI and skip indicator.....	1201
26.5.2.1	TI and skip indicator / RR .....	1201
26.5.2.1.1	TI and skip indicator / RR / Idle Mode .....	1201
26.5.2.1.2	TI and skip indicator / RR / RR-Connection established.....	1202
26.5.2.2	TI and skip indicator / MM .....	1204
26.5.2.3	TI and skip indicator / CC .....	1205
26.5.3	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / undefined or unexpected message type.....	1207
26.5.3.1	Undefined or unexpected message type / undefined message type / CC .....	1207
26.5.3.2	Undefined or unexpected message type / undefined message type / MM .....	1208
26.5.3.3	Undefined or unexpected message type / undefined message type / RR .....	1209
26.5.3.4	Undefined or unexpected message type / unexpected message type / CC .....	1211
26.5.4	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / unforeseen information elements in the non-imperative message part.....	1212
26.5.4.1	Unforeseen information elements in the non-imperative message part / duplicated information elements.....	1212
26.5.5	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / non-semantical mandatory IE errors .....	1213
26.5.5.1	Non-semantical mandatory IE errors / RR .....	1213
26.5.5.1.1	Non-semantical mandatory IE errors / RR / missing mandatory IE error .....	1213
26.5.5.1.2	Non-semantical mandatory IE errors / RR / comprehension required.....	1216
26.5.5.2	Non-semantical mandatory IE errors / MM .....	1217
26.5.5.2.1	Non-semantical mandatory IE errors / MM / syntactically incorrect mandatory IE .....	1217
26.5.5.2.2	Non-semantical mandatory IE errors / MM / syntactically incorrect mandatory IE .....	1218
26.5.5.2.3	Non-semantical mandatory IE errors / MM / comprehension required.....	1219
26.5.5.3	Non-semantical mandatory IE errors / CC .....	1221
26.5.5.3.1	Non-semantical mandatory IE errors / CC / missing mandatory IE .....	1221
26.5.5.3.2	Non-semantical mandatory IE errors / CC / comprehension required.....	1223
26.5.6	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / unknown IE, comprehension not required .....	1224
26.5.6.1	Unknown information elements in the non-imperative message part / MM .....	1224
26.5.6.1.1	Unknown IE, comprehension not required / MM / IE unknown in the protocol.....	1224
26.5.6.1.2	Unknown IE, comprehension not required / MM / IE unknown in the message.....	1225
26.5.6.2	Unknown information elements in the non-imperative message part / CC .....	1227
26.5.6.2.1	Unknown information elements in the non-imperative message part / CC / Call establishment .....	1227
26.5.6.2.2	Unknown information elements in the non-imperative message part / CC / disconnect.....	1228
26.5.6.2.3	Unknown information elements in the non-imperative message part / CC / release .....	1229
26.5.6.2.4	Unknown information elements in the non-imperative message part / CC / release complete .....	1230
26.5.6.3	Unknown IE in the non-imperative message part, comprehension not required / RR .....	1231
26.5.7	Handling of unknown, unforeseen, and erroneous protocol data, and of parallel transactions / spare bits.....	1233
26.5.7.1	Spare bits / RR.....	1233
26.5.7.1.1	Spare bits / RR / paging channel.....	1233
26.5.7.1.2	Spare bits / RR / BCCH .....	1235
26.5.7.1.3	Spare bits / RR / AGCH.....	1236
26.5.7.1.4	Spare bits / RR / Connected Mode.....	1238
26.5.7.2	Spare bits / MM.....	1240
26.5.7.3	Spare bits / CC.....	1242
26.5.8	Default contents of messages .....	1244

26.6	Test of the elementary procedures for radio resource management .....	1246
26.6.1	Immediate assignment .....	1246
26.6.1.1	Immediate assignment / SDCCH or TCH assignment .....	1246
26.6.1.2	Immediate assignment / extended assignment .....	1247
26.6.1.3	Immediate assignment / assignment rejection .....	1249
26.6.1.4	Immediate assignment / ignore assignment .....	1251
26.6.1.5	Immediate assignment after immediate assignment reject .....	1252
26.6.1.6	Immediate assignment after immediate assignment reject .....	1254
26.6.1.7	Immediate assignment after immediate assignment reject .....	1255
26.6.2	Test of paging .....	1259
26.6.2.1	Normal paging .....	1259
26.6.2.1.1	Paging / normal / type 1 .....	1259
26.6.2.1.2	Paging / normal / type 2 .....	1262
26.6.2.1.3	Paging / normal / type 3 .....	1264
26.6.2.2	Paging / extended .....	1265
26.6.2.3	Paging / reorganization .....	1268
26.6.2.3.1	Paging / reorganization / procedure 1 .....	1268
26.6.2.3.2	Paging / reorganization / procedure 2 .....	1271
26.6.2.4	Paging / same as before .....	1272
26.6.2.5	Paging / multislot CCCH .....	1273
26.6.2.6	Paging / EAB active .....	1274
26.6.3	Test of measurement report .....	1276
26.6.3.1	Measurement / no neighbours .....	1276
26.6.3.2	Measurement / all neighbours present .....	1279
26.6.3.3	Measurement / barred cells and non-permitted NCCs .....	1283
26.6.3.4	Measurement / DTX .....	1286
26.6.3.5	Measurement / Frequency Formats .....	1289
26.6.3.6	Measurement / multiband environment .....	1293
26.6.3.7	Measurement / new cell reporting .....	1296
26.6.3.8	Enhanced Measurement /all neighbours present .....	1300
26.6.3.8.1	Conformance requirements .....	1300
26.6.3.8.2	Test purpose .....	1301
26.6.3.8.3	Method of test .....	1301
26.6.3.9	Enhanced Measurement Report / Measurement Parameters .....	1304
26.6.3.9.1	Conformance requirements .....	1304
26.6.3.9.2	Test purpose .....	1304
26.6.3.9.3	Method of test .....	1304
26.6.3.10	Enhanced Measurement Report / EMR Reporting after Handover .....	1307
26.6.3.10.1	Conformance requirements .....	1307
26.6.3.10.2	Test purpose .....	1308
26.6.3.10.3	Method of test .....	1308
26.6.4	Test of the channel assignment procedure .....	1310
26.6.4.1	Dedicated assignment / successful case .....	1310
26.6.4.2	Dedicated assignment / failure .....	1318
26.6.4.2.1	Dedicated assignment / failure / failure during active state .....	1318
26.6.4.2.2	Dedicated assignment / failure / general case .....	1319
26.6.5	Test of handover .....	1320
26.6.5.1	Handover / successful / active call / non-synchronized .....	1321
26.6.5.2	Handover / successful / call under establishment / non-synchronized .....	1331
26.6.5.3	Handover / successful / active call / finely synchronized .....	1346
26.6.5.4	Handover / successful / call under establishment / finely synchronized .....	1350
26.6.5.5	Pre-synchronized handovers .....	1360
26.6.5.5.1	Handover / successful / active call / pre-synchronized / Timing Advance IE not included .....	1360
26.6.5.5.2	Handover / successful / call being established / pre-synchronized / timing advance IE is included / reporting of observed time difference requested .....	1361
26.6.5.6	Handover / successful / active call / pseudo synchronized .....	1363
26.6.5.7	Handover / successful / active call / non-synchronized / reporting of observed time difference requested .....	1365
26.6.5.8	Handover / layer 3 failure .....	1367
26.6.5.9	Handover / layer 1 failure .....	1368
26.6.6	Test of frequency redefinition .....	1370
26.6.6.1	Frequency redefinition .....	1370

26.6.7	Test of the channel mode modify procedure .....	1373
26.6.7.1	Test of the channel mode modify procedure / full rate .....	1373
26.6.7.2	Test of the channel mode modify procedure / half rate .....	1375
26.6.8	Test of ciphering mode setting.....	1378
26.6.8.1	Ciphering mode / start ciphering .....	1378
26.6.8.2	Ciphering mode / no ciphering .....	1380
26.6.8.3	Ciphering mode / old cipher key .....	1381
26.6.8.4	Ciphering mode / change of mode, algorithm and key .....	1382
26.6.8.5	Ciphering mode / IMEISV request .....	1389
26.6.8.6	Ciphering mode / Non support of algorithm A5/2 .....	1391
26.6.8.7	Ciphering mode with cipher key Kc <sub>128</sub> .....	1392
26.6.8.8	Ciphering mode with cipher key Kc <sub>128</sub> and algorithm changes.....	1394
26.6.9	Test of additional assignment.....	1397
26.6.10	Test of partial release.....	1398
26.6.11	Test of classmark.....	1399
26.6.11.1	Classmark change.....	1413
26.6.11.2	Classmark interrogation.....	1415
26.6.11.3	Classmark interrogation / UTRAN Classmark Change .....	1416
26.6.11.4	Early UTRAN Classmark Sending .....	1418
26.6.12	Test of channel release .....	1420
26.6.12.1	Channel release / SDCCH .....	1420
26.6.12.2	Channel release / SDCCH - no L2 ACK .....	1421
26.6.12.3	Channel release / TCH-F .....	1422
26.6.12.4	Channel release / TCH-F - no L2 ACK .....	1423
26.6.13	Test of starting time .....	1425
26.6.13.1	Dedicated assignment with starting time / successful case / time not elapsed .....	1426
26.6.13.2	Dedicated assignment with starting time / successful case / time elapsed.....	1428
26.6.13.3	Dedicated assignment with starting time and frequency redefinition / failure case / time not elapsed.....	1430
26.6.13.4	Dedicated assignment with starting time and frequency redefinition / failure case / time elapsed ...	1433
26.6.13.5	Handover with starting time / successful case / time not elapsed.....	1435
26.6.13.6	Handover with starting time / successful case / time elapsed .....	1437
26.6.13.7	Handover with starting time and frequency redefinition / failure case / time not elapsed.....	1439
26.6.13.8	Handover with starting time and frequency redefinition / failure case / time elapsed.....	1441
26.6.13.9	Immediate assignment with starting time / successful case / time not elapsed .....	1444
26.6.13.10	Immediate assignment with starting time / successful case / time elapsed .....	1445
26.6.14	Default contents of GSM 900 layer 3 messages for RR tests.....	1447
26.6.15	Default contents of DCS 1 800 layer 3 messages for RR tests .....	1456
26.6.16	Default contents of GSM 450 layer 3 messages for RR tests.....	1466
26.6.17	Default contents of GSM 480 layer 3 messages for RR tests.....	1475
26.6.18	Default contents of PCS 1 900 layer 3 messages for RR tests .....	1484
26.6.19	Default contents of GSM 750 layer 3 messages for RR tests.....	1494
26.6.20	Default contents of GSM 850 layer 3 messages for RR tests.....	1503
26.6.21	Default contents of GSM 710 layer 3 messages for RR tests.....	1512
26.6.22	Default contents of T-GSM 810 layer 3 messages for RR tests.....	1521
26.6.23	Test of Repeated SACCH .....	1530
26.6.23.1	Repeated SACCH / Downlink Repeated SACCH .....	1530
26.6.23.2	Repeated SACCH / Uplink Repeated SACCH .....	1532
26.6.23.3	Repeated SACCH / Uplink Repeated SACCH with SAPI 3 frames .....	1533
26.7	Elementary procedures of mobility management .....	1535
26.7.0	Default contents of messages.....	1535
26.7.1	TMSI reallocation .....	1538
26.7.2	Authentication.....	1540
26.7.2.1	Authentication accepted.....	1541
26.7.2.2	Authentication rejected .....	1542
26.7.2.3	Authentication accepted with USIM .....	1545
26.7.2.4	Authentication not accepted by MS with USIM (MAC Failure).....	1546
26.7.2.5	Authentication not accepted by MS with USIM (Synch Failure) .....	1549
26.7.3	Identification .....	1551
26.7.3.1	General Identification.....	1551
26.7.3.2	Handling of IMSI shorter than the maximum length.....	1553
26.7.4	Location updating.....	1556

26.7.4.1	Location updating / accepted .....	1556
26.7.4.2	Location updating / rejected .....	1561
26.7.4.2.1	Location updating / rejected / IMSI invalid .....	1561
26.7.4.2.2	Location updating / rejected / PLMN not allowed .....	1564
26.7.4.2.3	Location updating / rejected / location area not allowed .....	1568
26.7.4.2.4	Location updating / rejected / roaming not allowed in this location area .....	1571
26.7.4.3	Location updating / abnormal cases .....	1578
26.7.4.3.1	Location updating / abnormal cases / random access fails .....	1578
26.7.4.3.2	Location updating / abnormal cases / attempt counter less or equal to 4, LAI different .....	1580
26.7.4.3.3	Location updating / abnormal cases / attempt counter equal to 4 .....	1586
26.7.4.3.4	Location updating / abnormal cases / attempt counter less or equal to 4, stored LAI equal to broadcast LAI .....	1594
26.7.4.3.5	Location updating / abnormal cases / Network reject with Extended Wait Timer .....	1601
26.7.4.4	Location updating / release / expiry of T3240 .....	1603
26.7.4.5	Location updating / periodic .....	1604
26.7.4.5.1	Location updating / periodic spread .....	1604
26.7.4.5.2	Location updating / periodic normal / test 1 .....	1605
26.7.4.5.3	Location updating / periodic normal / test 2 .....	1607
26.7.4.5.4	Location updating / periodic HPLMN search .....	1609
26.7.4.5.4a	Location updating / periodic per-device timer .....	1619
26.7.4.5.5	Location Updating / Multi-Band PLMN selection between different ITU regions / .....	1621
26.7.4.5.5.2	Higher Priority PLMN / Automatic PLMN Selection Mode / Limited Service .....	1623
26.7.4.5.5.3	Higher Priority PLMN / Automatic PLMN Selection Mode / Recovery from Lack of Service .....	1625
26.7.4.5.5.4	User Selection / Manual PLMN Selection Mode .....	1626
26.7.4.5.6	Location updating / periodic per-device timer .....	1628
26.7.4.6	Location updating / interworking of attach and periodic .....	1629
26.7.5	MM connection .....	1631
26.7.5.1	Introduction .....	1631
26.7.5.2	MM connection / establishment with cipher and repeated FACCH .....	1631
26.7.5.3	MM connection / establishment without cipher .....	1633
26.7.5.4	MM connection / establishment rejected .....	1634
26.7.5.5	MM connection / establishment rejected cause 4 .....	1635
26.7.5.6	MM connection / expiry T3230 .....	1636
26.7.5.7	MM connection / abortion by the network .....	1637
26.7.5.7.1	MM connection / abortion by the network / cause #6 .....	1637
26.7.5.7.2	MM connection / abortion by the network / cause not equal to #6 .....	1641
26.7.5.8	MM connection / follow-on request pending .....	1642
26.7.5.8.1	MM connection / follow-on request pending / test 1 .....	1642
26.7.5.8.2	MM connection / follow-on request pending / test 2 .....	1643
26.7.5.8.3	MM connection / follow-on request pending / test 3 .....	1644
26.7.6	Network Identity and Time zone (NITZ) .....	1646
26.7.6.1	NITZ and CS location update procedures .....	1646
26.7.6.1.1	NITZ / CS location update / Time zone, Time and DST Handling .....	1646
26.8	Tests related to circuit switched call control .....	1651
26.8.1	Circuit switched Call Control (CC) state machine verification .....	1651
26.8.1.1	General on CC state machine verification .....	1651
26.8.1.2	Establishment of an outgoing call .....	1652
26.8.1.2.1	Outgoing call / U0 null state .....	1654
26.8.1.2.2	Outgoing call / U0.1 MM connection pending .....	1656
26.8.1.2.3	Outgoing call / U1 call initiated .....	1659
26.8.1.2.4	Outgoing call / U3 MS originating call proceeding .....	1668
26.8.1.2.5	Outgoing call / U4 call delivered .....	1684
26.8.1.2.6	U10 call active .....	1693
26.8.1.2.7	U11 disconnect request .....	1702
26.8.1.2.8	U12 disconnect indication .....	1708
26.8.1.2.9	Outgoing call / U19 release request .....	1713
26.8.1.3	Establishment of an incoming call / Initial conditions .....	1719
26.8.1.3.1	Incoming call / U0 null state .....	1721
26.8.1.3.2	Incoming call / U6 call present .....	1722
26.8.1.3.3	Incoming call / U9 mobile terminating call confirmed .....	1724
26.8.1.3.4	Incoming call / U7 call received .....	1731

26.8.1.3.5	Incoming call / U8 connect request .....	1741
26.8.1.4	In call functions .....	1752
26.8.1.4.1	In-call functions / DTMF information transfer .....	1752
26.8.1.4.2	In-call functions / user notification .....	1753
26.8.1.4.3	In-call functions / channel changes .....	1754
26.8.1.4.4	In-call functions / MS terminated in-call modification .....	1758
26.8.1.4.5	In-call functions / MS originated in-call modification .....	1760
26.8.2	Call Re-establishment .....	1774
26.8.2.1	Call Re-establishment/call present, re-establishment allowed .....	1774
26.8.2.2	Call Re-establishment/call present, re-establishment not allowed .....	1776
26.8.2.3	Call Re-establishment/call under establishment, transmission stopped .....	1777
26.8.3	User to user signalling .....	1779
26.8.4	Default contents of message .....	1781
26.9	Structured procedures .....	1787
26.9.1	Structured procedures / general .....	1787
26.9.2	Structured procedures / MS originated call / early assignment .....	1788
26.9.3	Structured procedures / MS originated call / late assignment .....	1790
26.9.4	Structured procedures / MS terminated call / early assignment .....	1792
26.9.5	Structured procedures / MS terminated call / late assignment .....	1795
26.9.6	Structured procedures / emergency call .....	1797
26.9.6.1	Structured procedures / emergency call / idle updated .....	1798
26.9.6.1.1	Structured procedures / emergency call / idle updated / preferred channel rate .....	1798
26.9.6.1.2	Structured procedures / emergency call / idle updated, non-preferred channel rate .....	1800
26.9.6.1.3	Structured procedures / emergency call / idle updated / EAB active .....	1800
26.9.6.2	Structured procedures / emergency call / idle, no IMSI .....	1803
26.9.6.2.1	Structured procedures / emergency call / idle, no IMSI / accept case .....	1803
26.9.6.2.2	Structured procedures / emergency call / idle, no IMSI / reject case .....	1805
26.9.6a	Structured Calls / eCall .....	1806
26.9.6a.1	eCall with USIM .....	1806
26.9.6a.1.1	Void .....	1806
26.9.6a.1.2	Test eCall using eCall capable MS with 'eCall only' subscription on USIM .....	1806
26.9.6a.1.3	Manually initiated eCall using eCall capable MS with 'eCall only' subscription on USIM .....	1809
26.9.6a.1.4	Manually initiated eCall using eCall capable MS with eCall capable USIM .....	1810
26.9.6a.1.5	eCall Inactivity State after T3242 expires .....	1813
26.9.6a.1.6	Automatically initiated eCall .....	1817
26.9.6a.1.7	Reconfiguration eCall using eCall capable MS with 'eCall only' subscription on USIM .....	1819
26.9.6a.1.8	eCall Inactivity State after T3243 expires .....	1821
26.9.7	Directed Retry / Mobile Originated Call .....	1824
26.9.8	Directed Retry / Mobile Terminated Call .....	1830
26.9.9	Default contents of messages .....	1836
26.10	E-GSM or R-GSM signalling .....	1842
26.10.1	E-GSM or R-GSM signalling / general considerations .....	1842
26.10.2	E-GSM or R-GSM signalling / RR .....	1843
26.10.2.1	E-GSM or R-GSM signalling / RR / Measurement .....	1843
26.10.2.2	E-GSM or R-GSM signalling / RR / Immediate assignment .....	1850
26.10.2.3	E-GSM or R-GSM signalling / RR / channel assignment procedure .....	1852
26.10.2.4	E-GSM or R-GSM signalling / RR / Handover .....	1856
26.10.2.4.1	E-GSM or R-GSM signalling / RR / Handover / Successful handover .....	1856
26.10.2.4.2	E-GSM or R-GSM signalling / RR / Handover / layer 1 failure .....	1861
26.10.2.5	E-GSM or R-GSM signalling / RR / Frequency Redefinition .....	1863
26.10.3	E-GSM or R-GSM signalling / Structured procedure .....	1866
26.10.3.1	E-GSM or R-GSM signalling / Structured procedure / Mobile originated call .....	1866
26.10.3.2	E-GSM or R-GSM signalling / Structured procedures / emergency call .....	1868
26.10.3.3	Default contents of messages .....	1871
26.10.4	E-GSM or R-GSM signalling / Default message contents .....	1872
26.11	Multiband signalling .....	1876
26.11.1	General considerations .....	1876
26.11.2	Multiband signalling / RR .....	1876
26.11.2.1	Multiband signalling / RR / Immediate assignment procedure .....	1876
26.11.2.2	Multiband signalling / RR / Handover .....	1885
26.11.2.2.1	Multiband signalling / RR / Handover / successful / active call / non-synchronized .....	1885
26.11.2.2.2	Multiband signalling / RR / Handover / layer 1 failure .....	1906

26.11.2.2.3	Multiband signalling / RR / Handover / Multiband BCCH / successful / active call / non synchronized .....	1912
26.11.2.2.4	Multiband signalling / RR / Handover/ Multiband BCCH / Intracell Handover - Interband Assignment .....	1929
26.11.2.3	Multiband signalling / RR / Measurement reporting .....	1950
26.11.3	Multiband signalling / MM .....	1966
26.11.3.1	Multiband signalling / MM / Location updating .....	1966
26.11.3.1.1	Location updating / accepted .....	1966
26.11.3.1.2	Location updating / periodic .....	1969
26.11.4	Multiband signalling / CC .....	1972
26.11.5	Multiband signalling / Structured procedures .....	1972
26.11.5.1	Multiband signalling / Structured procedures / MS originated call / early assignment .....	1972
26.11.5.2	Structured procedures / MS terminated call / late assignment .....	1982
26.11.6	Multiband signalling / Default messages contents .....	1992
26.12	Enhanced Full Rate signalling.....	2020
26.12.1	EFR signalling/ test of the channel mode modify procedure.....	2020
26.12.2	EFR signalling/ tests of handover .....	2023
26.12.2.1	EFR signalling / Handover / active call / successful case.....	2024
26.12.3	EFR Signalling / Structured procedures / MS originated call / late assignment .....	2034
26.12.4	Structured procedures / MS terminated call / 1early assignment.....	2037
26.12.5	Structured procedures / emergency call .....	2040
26.12.6	EFR Signalling / Directed Retry / Mobile Originated Call.....	2043
26.12.7	EFR Signalling / Directed Retry / Mobile Terminated Call .....	2046
26.12.8	Default contents of layer 3 messages for Enhanced Full rate speech tests .....	2052
26.13	Multislot signalling .....	2055
26.13.1	Multislot signalling / RR .....	2055
26.13.1.1	Multislot signalling / RR / Measurement.....	2055
26.13.1.1.1	Multislot signalling / RR / Measurement / symmetric .....	2055
26.13.1.1.2	Multislot signalling / RR / Measurement / asymmetric .....	2058
26.13.1.1.3	Multislot signaling / RR / Measurement / asymmetric / change of the reported subchannel.....	2062
26.13.1.2	Multislot signalling / RR / Dedicated assignment.....	2068
26.13.1.2.1	Multislot signalling / RR / Dedicated assignment / successful case .....	2068
26.13.1.2.2	Multislot signalling / RR / Dedicated assignment / failure / general case .....	2102
26.13.1.3	Test of handover.....	2137
26.13.1.3.1	Multislot signalling / RR / Handover / successful/ active call / non-synchronized.....	2138
26.13.1.3.2	Multislot signalling / RR / Handover / successful/ call under establishment / non synchronized / resource upgrading .....	2146
26.13.1.3.3	Multislot signalling / RR / Handover / successful/ active call / finely synchronized / resource downgrading .....	2156
26.13.1.3.4	Multislot signalling / RR / Handover / successful/ call under establishment / finely synchronized / relocation of channels .....	2163
26.13.1.3.5	Multislot signalling / RR/Handover / successful/ call under establishment / pre-synchronized / resource upgrading.....	2178
26.13.1.4	Multislot signalling / RR / Test of the channel mode modify procedure .....	2186
26.13.1.5	Multislot signalling / RR / Early classmark sending .....	2188
26.13.1.6	Default contents of layer 3 messages for RR tests .....	2190
26.13.1.6.1	Default contents of GSM 900 layer 3 messages for RR tests .....	2190
26.13.1.6.2	Default contents of DCS 1 800 layer 3 messages for RR tests .....	2200
26.13.1.6.3	Default contents of GSM 450 layer 3 messages for RR tests .....	2212
26.13.1.6.4	Default contents of GSM 480 layer 3 messages for RR tests .....	2222
26.13.1.6.5	Default contents of GSM 700 layer 3 messages for RR tests .....	2233
26.13.1.6.6	Default contents of GSM 850 layer 3 messages for RR tests .....	2244
26.13.2	Multislot signalling / CC .....	2255
26.13.2.1	Multislot signalling / CC / In-call functions.....	2255
26.13.2.1.1	Multislot signalling / CC / In-call functions / User initiated service level upgrade / successful .....	2255
26.13.2.1.2	Multislot signalling / CC / In-call functions / User initiated service level downgrade / successful .....	2256
26.13.2.1.3	Multislot signalling / CC / In-call functions / User initiated service level upgrade / Time-out of timer T323 .....	2258
26.13.2.1.4	Multislot signalling / CC / In-call functions / User initiated service level upgrade / modify reject.....	2259
26.13.2.1.5	Multislot signalling / CC / In call functions / contents of some of the messages .....	2260

26.13.3	Multislot signalling / Structured procedures .....	2262
26.13.3.1	Multislot signalling / Structured procedures / MS originated call / early assignment / HSCSD / non-transparent.....	2262
26.13.3.2	Multislot signalling / Structured procedures / MS originated call / late assignment / HSCSD / non-transparent.....	2265
26.13.3.3	Multislot signalling / Structured procedures / MS originated call / early assignment / HSCSD / Transparent.....	2267
26.13.3.4	Multislot signalling / Structured procedures / MS Terminated call / early assignment / HSCSD / non-transparent.....	2270
26.13.3.5	Multislot signalling / Structured procedures / MS Terminated call / early assignment / HSCSD / Transparent.....	2274
26.13.3.6	Default test conditions during layer 3 tests .....	2277
26.13.3.7	Default contents of messages.....	2281
26.14	VGCS and VBS Tests.....	2287
26.14.1	VGCS-VBS / Notification .....	2288
26.14.1.1	VGCS-VBS / Notification / notification indication .....	2288
26.14.1.2	VGCS-VBS / Notification / NCH position .....	2292
26.14.1.3	VGCS-VBS / Notification / Reduced NCH monitoring .....	2293
26.14.1.4	VGCS-VBS / Notification / Limited Service state .....	2298
26.14.2	VGCS-VBS / Paging .....	2300
26.14.2.1	VGCS-VBS / Paging / Paging indication .....	2300
26.14.2.2	VGCS-VBS / Paging / Notification .....	2303
26.14.3	VGCS-VBS / RR Procedures .....	2307
26.14.3.1	VGCS-VBS / RR Procedures / frequency redefinition .....	2307
26.14.3.2	VGCS-VBS / RR Procedures / assignment .....	2312
26.14.3.3	VGCS-VBS / RR Procedures / handover / successful in group transmit mode .....	2316
26.14.3.4	VGCS-VBS / RR Procedures / handover / successful at group call establishment .....	2321
26.14.3.5	VGCS-VBS / RR Procedures / handover / failure .....	2327
26.14.3.6	VGCS-VBS / RR / Measurement Report .....	2328
26.14.3.6.1	Measurement / all neighbours present.....	2328
26.14.4	VGCS-VBS / Uplink Access and Uplink Reply Procedures .....	2332
26.14.4.1	VGCS-VBS / Uplink Access / uplink investigation .....	2332
26.14.4.2	Uplink Access / uplink access procedure .....	2334
26.14.4.3	VGCS-VBS / Uplink Reply in VGCS receive mode .....	2336
26.14.5	VGCS-VBS / Leaving Group Receive or Group Transmit Mode .....	2338
26.14.5.1	VGCS-VBS / Leaving group receive mode .....	2338
26.14.5.2	VGCS-VBS / Leaving group transmit mode .....	2340
26.14.6	VGCS-VBS / GCC-BCC Procedures .....	2342
26.14.6.1	VGCS-VBS / GCC-BCC Procedures / MO call establishment .....	2342
26.14.6.2	VGCS-VBS / GCC-BCC Procedures / Transaction Identifier .....	2345
26.14.6.3	VGCS-VBS / GCC-BCC Procedures / Call Termination / originator / group transmit mode .....	2346
26.14.6.4	VGCS-VBS / GCC-BCC Procedures / Call Termination / originator in group receive mode .....	2348
26.14.6.5	VGCS-VBS / GCC-BCC Procedures / Call Termination / not originator .....	2350
26.14.6.6	VGCS-VBS / GCC-BCC Procedures / GCC states .....	2351
26.14.6.7	VGCS-VBS / GCC-BCC Procedures / BCC states .....	2354
26.14.7	VGCS-VBS / Error Handling .....	2355
26.14.7.1	VGCS-VBS / Error Handling / short message length, unknown message type and TI .....	2355
26.14.7.2	VGCS-VBS / Error Handling / incorrect information elements .....	2359
26.14.7.3	VGCS-VBS / Messages not addressing VGCS receive mode .....	2363
26.14.8	VGCS-VBS / Structured Procedures .....	2364
26.14.8.1	VGCS-VBS / Structured Procedures / Very early and early assignment .....	2364
26.14.9	VGCS-VBS / Cell change .....	2367
26.14.9.1	VGCS-VBS / Cell Change / Same LA .....	2367
26.14.9.2	VGCS-VBS / Cell Change / Different LA .....	2370
26.14.9.3	VGCS-VBS / Cell Change / Different PLMN .....	2373
26.14.10	VGCS-VBS / Default Message Contents.....	2376
26.14.11	VGCS-VBS / User-to-Dispatcher Information .....	2380
26.14.11.1	VGCS-VBS / User-to-Dispatcher Information / BCC MO call .....	2380
26.14.11.2	VGCS-VBS / User-to-Dispatcher information / GCC MO call .....	2382
26.14.11.3	VGCS-VBS / User-to-Dispatcher information / Compressed user information in VBS fast call set-up.....	2384

26.14.11.4	VGCS-VBS / User-to-Dispatcher information / Compressed User-to-Dispatcher information in VGCS fast call set-up.....	2386
26.15	SoLSA signalling.....	2388
26.15.1	General considerations.....	2388
26.15.1.1	Default message content.....	2388
26.15.1.2	General initial conditions for SIM card .....	2389
26.15.2	SoLSA signalling / RR .....	2389
26.15.2.1	SoLSA signalling / RR / classmark interrogation .....	2389
26.15.3	SoLSA signalling / MM.....	2391
26.15.3.1	SoLSA signalling / MM / location updating.....	2391
26.15.3.1.1	Location updating / accepted .....	2392
26.15.3.2	SoLSA signalling / MM / MM information .....	2395
26.15.4	SoLSA signalling / CC.....	2398
26.15.4.1	SoLSA signalling / CC / call re-establishment / call present .....	2398
26.15.5	SoLSA signalling / structured procedures .....	2401
26.15.5.1	SoLSA signalling / structured procedures / MS originated call / early assignment .....	2401
26.15.5.2	SoLSA signalling / structured procedures / MS originated call / late assignment.....	2404
26.15.5.3	SoLSA signalling / structured procedures / MS terminated call / early assignment .....	2407
26.15.5.4	SoLSA signalling / structured procedures / MS terminated call / late assignment.....	2410
26.15.5.5	SoLSA signalling / structured procedures / emergency call / idle updated .....	2413
26.15.5.6	SoLSA signalling / structured procedures / emergency call / idle, no IMSI .....	2416
26.16	Adaptive Multi Rate Signalling .....	2419
26.16.0	Default contents of layer 3 messages for AMR signalling tests .....	2419
26.16.1	Void .....	2419
26.16.2	Inband Signalling, Uplink Codec Adaptation .....	2419
26.16.3	Structured procedures / MS terminated call / early assignment / no initial codec mode .....	2422
26.16.3a	Structured procedures / MS terminated call / early assignment / specified initial codec mode .....	2425
26.16.4	Structured procedures / MS originated call / late assignment / specified initial codec mode .....	2428
26.16.4a	Structured procedures / MS originated call / late assignment / no initial codec mode .....	2431
26.16.5	AMR signalling / Handover / active call / successful case.....	2434
26.16.6	Structured procedures / emergency call .....	2450
26.16.7	AMR Signalling / Directed Retry / Mobile Originated Call.....	2452
26.16.8	AMR Signalling / Directed Retry / Mobile Terminated Call .....	2456
26.16.9	AMR RATSCCH Protocol .....	2462
26.16.9.1	AMR Configuration Change (normal) .....	2462
26.16.9.2	AMR Configuration Change (abnormal) .....	2465
26.16.9.3	Codec Mode Phase Change (normal) .....	2467
26.16.9.4	Codec Mode Phase Change (abnormal).....	2469
26.16.9.5	Threshold Change (normal) .....	2470
26.16.9.6	Threshold Change (abnormal) .....	2472
26.16.9.7	Unknown RATSCCH REQ Message.....	2474
26.16.9.8	Ignore subsequent REQ prior to expiry of REQ_Activation counter .....	2476
26.16.9.9	Initiation of Transaction with ACK_ERR or ACK_UNKNOWN .....	2479
26.16.9.10	Inversion of the Phase of the CMR/CMI .....	2480
26.16.9.11	Change of Active Codec Set .....	2483
26.16.9.12	Void .....	2487
26.16.10	AMR signalling/ test of the channel mode modify procedure.....	2487
26.16.11	Handover / layer 1 failure .....	2490
26.17	Adaptive Multi Rate Signalling – 8PSK .....	2494
26.17.1	Void .....	2494
26.17.2	Inband Signalling, Uplink Codec Adaptation .....	2494
26.17.3	8-PSK AMR HR / Structured procedures / MS terminated call / early assignment / no initial codec mode .....	2496
26.17.3a	8-PSK AMR HR / Structured procedures / MS terminated call / early assignment / specified initial codec mode.....	2499
26.17.4	8-PSK AMR HR / Structured procedures / MS originated call / late assignment / specified initial codec mode.....	2502
26.17.4a	8-PSK AMR HR / Structured procedures / MS originated call / late assignment / no initial codec mode .....	2505
26.17.5	Void .....	2507
26.17.6	8-PSK AMR HR / Structured procedures / emergency call.....	2507
26.17.7	Void .....	2509

26.17.8	Void .....	2509
26.17.9	8-PSK AMR HR / RATSCCH Protocol .....	2510
26.17.9.1	AMR Configuration Change (normal) .....	2510
26.17.9.2	AMR Configuration Change (abnormal) .....	2512
26.17.9.3	Codec Mode Phase Change (normal) .....	2514
26.17.9.4	Codec Mode Phase Change (abnormal) .....	2516
26.17.9.5	Threshold Change (normal) .....	2518
26.17.9.6	Threshold Change (abnormal) .....	2520
26.17.9.7	Unknown RATSCCH REQ Message.....	2522
26.17.9.8	Ignore subsequent REQ prior to expiry of REQ_Activation counter.....	2524
26.17.9.9	Initiation of Transaction with ACK_ERR or ACK_UNKNOWN .....	2527
26.17.9.10	Inversion of the Phase of the CMR/CMI .....	2528
26.17.9.11	Change of Active Codec Set .....	2531
26.17.10	8-PSK AMR HR signalling/ test of the channel mode modify procedure .....	2535
26.17.10.1	Void .....	2535
26.17.10.2	8-PSK AMR HR signalling/ test of the channel mode modify procedure/ half rate .....	2535
26.18	Dynamic ARFCN mapping tests .....	2537
26.18.1	Control of dynamic ARFCN mapping with SI14 and SI15 .....	2537
26.19	AMR WB - signalling.....	2541
26.19.1	Reserved for future use .....	2541
26.19.2	Reserved for future use .....	2541
26.19.3	Reserved for future use .....	2541
26.19.3a	WB AMR / Structured procedures / MS terminated call / early assignment / specified initial codec mode .....	2541
26.19.4	Reserved for future use .....	2545
26.19.5	WB AMR / Adaptive Multi Rate Signalling / AMR signalling / Handover / active call / successful case.....	2545
26.19.6	Reserved for future use .....	2567
26.19.7	Reserved for future use .....	2567
26.19.8	Reserved for future use .....	2567
26.19.9	WB AMR RATSCCH Protocol.....	2567
26.19.9.1	WB AMR Configuration Change (normal) .....	2567
26.19.9.2	AMR WB Configuration Change (abnormal) .....	2570
26.19.9.3	Codec Mode Phase Change (normal) .....	2572
26.19.9.4	Reserved for future use .....	2574
26.19.9.5	Threshold Change (normal) .....	2574
26.19.9.6	Reserved for future use .....	2577
26.19.9.7	Reserved for future use .....	2577
26.19.9.8	Reserved for future use .....	2577
26.19.9.9	Reserved for future use .....	2577
26.19.9.10	Inversion of the Phase of the CMR/CMI .....	2577
26.19.9.11	Change of Active Codec Set .....	2580
26.19.10	AMR signalling/ test of the channel mode modify procedure .....	2585
26.19.10.1	WB AMR signalling test of the channel mode modify procedure / full rate .....	2585
26.20	Enhanced Power Control.....	2587
26.20.1	Enhanced Power Control / MS Supports EPC .....	2587
26.21	VAMOS Signalling.....	2590
26.21.0	General .....	2590
26.21.1	VAMOS Signalling / MS originated call FR / TSC assignment in ASSIGNMENT COMMAND .....	2591
26.21.2	VAMOS Signalling / MS Terminated call / Channel mode assignment in Channel Mode Modify .....	2594
26.21.3	2598	
26.21.4	VAMOS Signalling / MS terminated call / Handover to VAMOS mode .....	2598
26.21.5	VAMOS Signalling / MT VAMOS call / TSC assignment in DTM Assignment Command .....	2601
26.21.6	VAMOS Signalling / MS originated call / Handover between different traffic rates .....	2604
26.21.7	VAMOS Signalling / Emergency call .....	2608
26.21.8	VAMOS Signalling / MS Originated call / Early assignment / Handover to different AMR codec rates.....	2611
26.22.1	Layer 2 fill bits randomisation .....	2614
27	Testing of the SIM/ME interface .....	2618
27.1	MS identification by short IMSI .....	2622
27.1.1	MS identification by short IMSI - Normal case.....	2622

27.1.2	MS identification by short IMSI, Phase 1 DCS SIM .....	2623
27.2	MS identification by short TMSI.....	2624
27.3	MS identification by long TMSI.....	2625
27.4	MS identification by long IMSI, TMSI updating and cipher key sequence number assignment .....	2626
27.5	Forbidden PLMNs, location updating and undefined cipher key .....	2628
27.6	MS updating forbidden PLMNs .....	2631
27.7	MS deleting forbidden PLMNs .....	2633
27.8	MS updating the PLMN selector list.....	2635
27.9	MS recognizing the priority order of the PLMN selector list .....	2635
27.10	MS access control management .....	2637
27.11	Exchange protocol tests .....	2643
27.11.1	Character transmission .....	2643
27.11.1.1	Bit/character duration during the transmission from the ME to the SIM .....	2643
27.11.1.2	Bit/character duration during the transmission from the SIM simulator to the ME.....	2643
27.11.1.3	Inter-character delay .....	2644
27.11.1.4	Error handling during the transmission from the ME to the SIM .....	2645
27.11.1.5	Error handling during transmission from the SIM to the ME.....	2646
27.11.2	Answer to reset (RST) .....	2646
27.11.2.1	Void .....	2646
27.11.2.2	Acceptance of SIMs with active low RST .....	2646
27.11.2.3	Characters of the answer to reset.....	2647
27.11.2.4	PPS procedure .....	2648
27.11.2.5	Reset repetition.....	2649
27.11.2.6	Speed Enhancement .....	2649
27.11.3	Command processing, procedure bytes .....	2651
27.12	Evaluation of directory characteristics.....	2652
27.12.1	Operating speed in authentication procedure .....	2652
27.12.2	Clock stop.....	2652
27.13	Mechanical tests.....	2654
27.13.1	Contact pressure .....	2654
27.13.2	Shape of contacts for IC card SIM card reader .....	2654
27.14	Secret code usage .....	2655
27.14.1	Entry of PIN .....	2655
27.14.2	Change of PIN .....	2656
27.14.3	Disabling the PIN .....	2657
27.14.4	PUK entry .....	2657
27.14.5	Entry of PIN2.....	2659
27.14.6	Change of PIN2 .....	2659
27.14.7	PUK2 entry.....	2660
27.15	Abbreviated Dialling Numbers (ADN).....	2661
27.16	MMI reaction to SIM status encoding .....	2662
27.17	Electrical tests .....	2663
27.17.1	Test of the power transition phases .....	2663
27.17.1.1	Phase preceding ME power on .....	2663
27.17.1.2	Phase during SIM power on .....	2664
27.17.1.3	Phase during ME power off with clock stop forbidden.....	2666
27.17.1.4	Phase during ME power off with clock stop allowed .....	2667
27.17.1.5	SIM Type Recognition and Voltage Switching .....	2669
27.17.1.5.1	Reaction of 3V only MEs on SIM type recognition failure .....	2669
27.17.1.5.2	Reaction of 3V only MEs on type recognition of 5V only SIMs .....	2670
27.17.1.5.3	Reaction of 3V technology MEs on type recognition of 5V only SIMs .....	2671
27.17.1.5.4	Reaction of 3V technology MEs on type recognition of 3V technology SIMs .....	2672
27.17.1.5.5	Reaction of 1,8V only MEs on SIM type recognition failure .....	2673
27.17.1.5.6	Reaction of 1,8V only MEs on type recognition of 3V SIMs .....	2673
27.17.1.5.7	Reaction of 1,8V technology MEs on type recognition of 3V technology SIMs .....	2674
27.17.1.5.8	Reaction of 1,8V technology MEs on type recognition of 1,8V technology SIMs .....	2675
27.17.2	Electrical tests on each ME contact .....	2676
27.17.2.1	Electrical tests on contact C1 .....	2677
27.17.2.1.1	Test 1 .....	2677
27.17.2.1.2	Test 2 .....	2678
27.17.2.2	Electrical tests on contact C2.....	2681
27.17.2.3	Electrical tests on contact C3 .....	2682

27.17.2.4	[Not used].....	2684
27.17.2.5	Electrical tests on contact C7.....	2684
27.18	Fixed Dialling Number (FDN) .....	2686
27.18.1	ME and SIM with FDN activated.....	2686
27.18.1.1	EF <sub>ADN</sub> invalidated and not readable or updatable.....	2686
27.18.1.2	EF <sub>ADN</sub> invalidated but readable and updatable .....	2688
27.18.2	ME and SIM with FDN deactivated .....	2689
27.18.3	Enabling, disabling and updating of FDN .....	2690
27.19	Phase identification .....	2691
27.20	SIM presence detection .....	2691
27.21	Advice of Charge (AoC) .....	2692
27.21.1	AoC not supported by SIM.....	2692
27.21.2	Maximum frequency of ACM updating.....	2694
27.21.3	Call terminated when ACM greater than ACM max .....	2696
27.21.4	Response codes of increase command .....	2698
28	Test of autocalling restrictions .....	2700
28.1	General .....	2700
28.2	Constraining the access to a single number (3GPP TS 02.07 category 3).....	2700
28.3	Constraining the access to a single number (3GPP TS 02.07 categories 1 and 2).....	2702
28.4	Behaviour of the MS when its list of blacklisted numbers is full .....	2704
29	Testing of bearer services .....	2706
29.1	General .....	2706
29.2	Testing of transparent data services .....	2707
29.2.1	Verification of synchronization .....	2707
29.2.2	Filtering of channel control information for transparent BCs .....	2710
29.2.3	Correct Terminal Compatibility Decision.....	2711
29.2.3.1	Negotiation of Radio Channel Requirement (RCR) .....	2711
29.2.3.2	Negotiation of Connection Element (CE).....	2712
29.2.3.3	Negotiation of Number of Stop Bits, Number of Data bits, and Parity .....	2712
29.2.3.4	Negotiation of Modem Type.....	2713
29.2.3.5	Negotiation of Intermedate Rate .....	2714
29.2.3.6	Negotiation of User Information Layer 2 Protocol.....	2715
29.2.3.7	Negotiation between TS 61 and TS 62: Mobile Originated call.....	2715
29.2.3.8	Negotiation between TS 61 and TS 62: Mobile Terminated call .....	2716
29.2.4	Data Rate Adaptation for Synchronous Transparent Bearer Capabilities .....	2717
29.2.5	Network Independent Clocking .....	2718
29.2.6	Asynchronous Transparent Bearer Capabilities .....	2718
29.2.6.1	Data Rate Adaptation .....	2718
29.2.6.2	Passage of the Break Signal .....	2719
29.2.6.3	Overspeed/Uunderspeed Handling (Local Terminal) .....	2720
29.2.6.4	Overspeed/Uunderspeed Handling (Remote Terminal) .....	2721
29.2.7	Interchange circuit mapping for transparent bearer capabilities .....	2722
29.3	Testing of non transparent data services (RLP tests).....	2723
29.3.1	Initialization .....	2723
29.3.1.1	Normal initialization done by the MS .....	2723
29.3.1.2	Initialization failure .....	2724
29.3.1.2.1	Loss of UA frame .....	2724
29.3.1.2.2	Total loss of UA frame .....	2726
29.3.2	Data transfer.....	2727
29.3.2.1	Default conditions.....	2727
29.3.2.2	MS sends I+S frames .....	2727
29.3.2.2.1	N(S) sequence number.....	2727
29.3.2.2.2	Transmission window .....	2728
29.3.2.2.3	Busy condition.....	2730
29.3.2.3	SS sends I+S frames .....	2732
29.3.2.3.1	N(R) sequence number .....	2732
29.3.2.3.2	Busy condition.....	2733
29.3.2.4	SS rejects I+S frames .....	2735
29.3.2.4.1	REJ frame .....	2735
29.3.2.4.2	SREJ frame .....	2737

29.3.2.4.3	I+S reject frame .....	2740
29.3.2.5	MS rejects I+S frames .....	2743
29.3.2.5.1	Rejection with REJ or SREJ supervisory frames .....	2743
29.3.2.5.2	Retransmission of REJ or SREJ frames .....	2749
29.3.2.5.3	I+S reject frame .....	2752
29.3.2.6	Checkpoint recovery .....	2755
29.3.2.6.1	SS in checkpoint recovery mode .....	2755
29.3.2.6.2	End of the window .....	2759
29.3.2.6.3	End of a sequence .....	2762
29.3.2.6.4	Time-out of one frame .....	2764
29.3.2.6.5	No response to checkpointing .....	2765
29.3.2.6.6	Incorrect response to checkpointing .....	2768
29.3.2.6.7	Total loss of response to checkpointing .....	2772
29.3.2.6.8	Retransmission of a sequence .....	2775
29.3.2.6.9	N2 retransmission of a sequence .....	2779
29.3.3	Negotiation of the RLP parameters .....	2783
29.3.3.1	Negotiation initiated by the SS .....	2783
29.3.3.2	Negotiation initiated by the MS .....	2788
29.3.3.3	Collision of XID frames .....	2793
29.3.3.4	Loss of XID frames .....	2798
29.3.3.5	Total loss of XID frames .....	2799
29.4	Facsimile tests for the transparent network support .....	2801
29.4.1	General .....	2801
29.4.2	Mobile originated call .....	2803
29.4.2.1	Call establishment procedure .....	2803
29.4.2.1.1	Alternate speech / facsimile .....	2803
29.4.2.1.2	Automatic facsimile .....	2804
29.4.2.2	Pre-message procedure .....	2805
29.4.2.3	Message procedure .....	2806
29.4.2.4	Post-message procedure .....	2808
29.4.2.5	Call release procedure .....	2809
29.4.2.6	CTC processing - 4th PPR for the same block .....	2809
29.4.2.7	Transition from Facsimile to Speech - Procedure interrupt generated by receiving station .....	2811
29.4.2.8	Transition from Facsimile to Speech - Procedure interrupt generated by transmitting station .....	2813
29.4.2.9	Quality check .....	2814
29.4.3	Mobile terminated call .....	2815
29.4.3.1	Call Establishment Procedure .....	2815
29.4.3.1.1	Alternate Speech/Facsimile .....	2815
29.4.3.1.2	Automatic facsimile .....	2817
29.4.3.2	Pre-message procedure .....	2818
29.4.3.3	Message procedure .....	2820
29.4.3.4	Post-message procedure .....	2821
29.4.3.5	Call release procedure .....	2822
29.4.3.6	Speed conversion factor .....	2822
29.4.3.7	Quality Check .....	2825
29.4.4	Notes .....	2825
30	Speech teleservices .....	2826
30.1	Sending sensitivity/frequency response .....	2826
30.2	Sending loudness rating .....	2828
30.3	Receiving sensitivity/frequency response .....	2829
30.4	Receiving loudness rating .....	2830
30.5	Side tones .....	2831
30.5.1	Side Tone Masking Rating (STMR) .....	2831
30.5.2	Listener Side Tone Rating (LSTR) .....	2832
30.6	Telephone Acoustic coupling Loss (TAL) .....	2833
30.6.1	Echo Loss (EL) .....	2833
30.6.2	Stability margin .....	2834
30.7	Distortion .....	2834
30.7.1	Sending .....	2834
30.7.2	Receiving .....	2835
30.8	Sidetone distortion .....	2836

30.9	Out-of-band signals .....	2837
30.9.1	Sending .....	2837
30.9.2	Receiving .....	2838
30.10	Idle channel noise .....	2839
30.10.1	Sending .....	2839
30.10.2	Receiving .....	2839
30.11	Ambient Noise Rejection .....	2840
30.12	Sending sensitivity/frequency response.....	2842
30.13	Sending loudness rating.....	2842
30.14	Receiving sensitivity/frequency response .....	2842
30.15	Receiving loudness rating .....	2844
30.16	Side Tone Masking Rating (STMR) LRGPs .....	2844
30.17	Telephone Acoustic coupling Loss (TAL).....	2844
30.17.1	Echo Loss (EL) .....	2844
30.17.2	Stability margin .....	2845
30.18	Sending Distortion.....	2845
30.19	Ambient Noise Rejection .....	2846
30.20	Side Tone Masking Rating (STMR) HATS .....	2846
31	Test of supplementary services.....	2847
31.1	Number identification supplementary services .....	2847
31.1.1	CLIP.....	2847
31.1.1.1	Normal operation .....	2847
31.1.1.2	Interrogation .....	2848
31.1.1.2.1	Interrogation accepted.....	2848
31.1.1.2.2	Interrogation rejected .....	2849
31.1.2	CLIR .....	2851
31.1.2.1	Normal operation - requesting presentation of CLI .....	2851
31.1.2.2	Normal operation - requesting restriction of CLI presentation.....	2852
31.1.2.3	Interrogation .....	2853
31.1.2.3.1	Interrogation accepted.....	2853
31.1.2.3.2	Interrogation rejected .....	2854
31.1.3	COLP .....	2856
31.1.3.1	Normal operation .....	2856
31.1.3.2	Interrogation .....	2857
31.1.3.2.1	Interrogation accepted.....	2857
31.1.3.2.2	Interrogation rejected .....	2858
31.1.4	COLR .....	2860
31.1.4.1	Interrogation .....	2860
31.1.4.1.1	Interrogation accepted.....	2860
31.1.4.1.2	Interrogation rejected .....	2861
31.1.4.2	Void .....	2863
31.1.5	CNAP .....	2863
31.1.5.1.1	Normal Operation – Name indication contained in Setup message.....	2863
31.1.5.1.2	Normal Operation – Name indication contained in Facility message .....	2864
31.1.5.2.1	Interrogation accepted.....	2865
31.1.5.2.2	Interrogation rejected .....	2866
31.2	Call offering supplementary services .....	2868
31.2.1	Call forwarding supplementary services .....	2868
31.2.1.1	Registration .....	2868
31.2.1.1.1	Registration accepted .....	2868
31.2.1.1.2	Registration rejected.....	2871
31.2.1.2	Erasure by the subscriber.....	2874
31.2.1.2.1	Erasure accepted .....	2874
31.2.1.2.2	Erasure rejected .....	2877
31.2.1.3	Activation.....	2879
31.2.1.4	Deactivation .....	2882
31.2.1.5	Invocation.....	2884
31.2.1.6	Interrogation .....	2884
31.2.1.6.1	Interrogation accepted.....	2884
31.2.1.6.2	Interrogation rejected .....	2887
31.2.1.7	Normal operation .....	2889

31.2.1.7.1	Served mobile subscriber side .....	2889
31.2.1.7.2	Forwarded-to mobile subscriber side .....	2893
31.2.2	Call transfer and mobile access hunting supplementary services .....	2895
31.3	Call completion supplementary services .....	2895
31.3.1	Call Waiting .....	2895
31.3.1.1	Waiting call indication and confirmation .....	2895
31.3.1.2	Normal operation with successful outcome .....	2896
31.3.1.2.1	Waiting call accepted; existing call released.....	2896
31.3.1.2.2	Waiting call accepted; existing call on hold.....	2897
31.3.1.2.3	Existing call released by user A; waiting call accepted .....	2898
31.3.1.3	Normal operation with unsuccessful outcome .....	2899
31.3.1.3.1	Waiting call released by subscriber B .....	2899
31.3.1.3.2	Waiting call released by calling user C .....	2900
31.3.1.4	Activation.....	2901
31.3.1.5	Deactivation .....	2904
31.3.1.6	Interrogation .....	2907
31.3.1.6.1	Interrogation accepted.....	2907
31.3.1.6.2	Interrogation rejected .....	2909
31.3.2	Call Hold.....	2911
31.3.2.1	Hold invocation.....	2911
31.3.2.2	Retrieve procedure.....	2912
31.3.2.3	Alternate from one call to the other .....	2913
31.4	Multi-party supplementary services .....	2915
31.4.1	Beginning the MultiParty service .....	2915
31.4.1.1	Beginning the MultiParty service, successful case .....	2915
31.4.1.2	Beginning the MultiParty service, unsuccessful case.....	2916
31.4.1.3	Beginning the MultiParty service, expiry of timer T(BuildMPTY) .....	2918
31.4.2	Managing an active MultiParty call .....	2920
31.4.2.1	Served mobile subscriber .....	2920
31.4.2.1.1	Put the MultiParty call on hold .....	2920
31.4.2.1.2	Create a private communication with one of the remote parties .....	2924
31.4.2.1.3	Terminate the entire MultiParty call.....	2929
31.4.2.1.4	Explicitly disconnect a remote party .....	2930
31.4.2.2	Remote parties .....	2931
31.4.2.2.1	Release from the MultiParty call.....	2931
31.4.3	Managing a held MultiParty call .....	2932
31.4.3.1	Retrieve the held MultiParty call .....	2932
31.4.3.1.1	Retrieve the held MultiParty call, successful case.....	2932
31.4.3.1.2	Retrieve the held MultiParty call, unsuccessful case.....	2933
31.4.3.1.3	Retrieve the held MultiParty call, expiry of timer T(RetrieveMPTY) .....	2935
31.4.3.2	Initiate a new call .....	2937
31.4.3.3	Process a call waiting request.....	2938
31.4.3.4	Terminate the held MultiParty call .....	2939
31.4.4	Managing a single call and a MultiParty call .....	2940
31.4.4.1	Served mobile subscriber .....	2940
31.4.4.1.1	Disconnect the single call .....	2940
31.4.4.1.2	Disconnect the MultiParty call .....	2943
31.4.4.2	Disconnect all calls .....	2946
31.4.4.3	Add the single call to the MPTY.....	2947
31.4.4.3.1	Add the single call to the MPTY, successful case .....	2947
31.4.4.3.2	Add the single call to the MPTY, maximum number of participants exceeded .....	2949
31.4.4.4	Alternate between the MPTY call and the single call .....	2950
31.4.5	Adding extra remote parties .....	2952
31.5	Community of interest supplementary services .....	2954
31.6	Charging supplementary services .....	2954
31.6.1	Advice of Charge Charging .....	2954
31.6.1.1	AoCC time related charging / MS originated call .....	2954
31.6.1.2	AoCC time related charging / MS terminated call.....	2957
31.6.1.3	AoCC volume related charging / MS originated call .....	2959
31.6.1.4	AoCC volume related charging / MS terminated call .....	2959
31.6.1.5	Change in charging information during a call .....	2959
31.6.1.6	Different formats of charging information .....	2962

31.6.1.7	AoCC on a Call Hold call.....	2965
31.6.1.8	AoCC on a Multi-party call.....	2968
31.6.2	Charge Storage .....	2971
31.6.2.1	Removal of SIM during an active call .....	2971
31.6.2.2	Interruption of power supply during an active call .....	2974
31.6.2.3	MS going out of coverage during an active AoCC call .....	2975
31.6.2.4	ACM max operation / Mobile Originating .....	2978
31.6.2.5	ACM max operation / Mobile Terminating .....	2981
31.6.3	Advice of Charge Information .....	2984
31.6.3.1	AoCI time related charging / MS originated call .....	2984
31.6.3.2	AoCI time related charging / MS terminated call .....	2986
31.6.3.3	AoCI volume related charging / MS originated call .....	2988
31.6.3.4	AoCI volume related charging / MS terminated call .....	2988
31.6.3.5	Change in charging information during a call .....	2988
31.6.3.6	Different formats of charging information .....	2991
31.6.3.7	AoCI on a Call Hold call .....	2994
31.6.3.8	AoCI on a Multi-party call .....	2997
31.6.4	Default contents of messages.....	3000
31.7	Additional information transfer supplementary services .....	3001
31.8	Call restriction supplementary services .....	3002
31.8.1	Registration of a password .....	3002
31.8.1.1	Registration accepted .....	3002
31.8.1.2	Registration rejected.....	3004
31.8.1.2.1	Rejection after invoke of the RegisterPassword operation.....	3004
31.8.1.2.2	Rejection after password check with negative result.....	3006
31.8.1.2.3	Rejection after new password mismatch.....	3009
31.8.2	Erasure .....	3011
31.8.3	Activation .....	3011
31.8.3.1	Activation accepted .....	3011
31.8.3.2	Activation rejected.....	3014
31.8.3.2.1	Rejection after invoke of ActivateSS operation .....	3014
31.8.3.2.2	Rejection after use of password procedure.....	3016
31.8.4	Deactivation .....	3018
31.8.4.1	Deactivation accepted .....	3018
31.8.4.2	Deactivation rejected.....	3021
31.8.4.2.1	Rejection after invoke of DeactivateSS operation .....	3021
31.8.4.2.2	Rejection after use of password procedure.....	3023
31.8.5	Invocation.....	3025
31.8.6	Interrogation.....	3026
31.8.6.1	Interrogation accepted.....	3026
31.8.6.2	Interrogation rejected .....	3028
31.8.7	Normal operation.....	3031
31.9	Handling of undefined (future) GSM supplementary services .....	3032
31.9.1	Mobile station initiated Unstructured supplementary service data operation.....	3032
31.9.1.1	ProcessUnstructuredSS-request/accepted.....	3032
31.9.1.2	ProcessUnstructuredSS-request/cross phase compatibility and error handling .....	3038
31.9.2	Network initiated unstructured supplementary service operations.....	3043
31.9.2.1	UnstructuredSS-Notify/accepted.....	3043
31.9.2.2	UnstructuredSS-Notify/rejected on user busy.....	3045
31.9.2.3	UnstructuredSS-Request/accepted.....	3047
31.10	MMI input for USSD .....	3052
31.11	Specific message contents and ASN.1 codings .....	3053
31.12	eMLPP Service .....	3099
31.12.1	eMLPP Service / priority level of MO call.....	3099
31.12.2	eMLPP Service / automatic answering point-to-point MT call .....	3103
31.12.3	eMLPP Service / automatic answering MT VGCS or VBS call.....	3107
31.12.4	eMLPP Service / registration .....	3109
31.12.5	eMLPP Service / interrogation.....	3111
31.13	Explicit Call Transfer (ECT) .....	3113
31.13.1	Explicit Call Transfer invocation .....	3113
31.13.1.1	Explicit Call Transfer invocation, successful case, both calls active, clearing using DISCONNECT .....	3113

31.13.1.2	Explicit Call Transfer invocation, successful case, both calls active, clearing using RELEASE.....	3114
31.13.1.3	Explicit Call Transfer invocation, successful case, both calls active, clearing using RELEASE COMPLETE .....	3115
31.13.1.4	Explicit Call Transfer invocation, successful case, second call alerting .....	3117
31.13.1.5	Explicit Call Transfer invocation, unsuccessful case .....	3118
31.13.1.6	Explicit Call Transfer invocation, expiry of T(ECT) .....	3120
31.14	User-to-User Signalling (UUS).....	3121
31.14.1	UUS / Implicit UUS1 .....	3122
31.14.1.1	UUS / Implicit UUS1 / CC MO call.....	3122
31.14.1.2	UUS / Implicit UUS1 / CC MT call .....	3125
31.14.1.3	UUS / Implicit UUS1 / Interactions with Call Waiting and call HOLD supplementary services .....	3129
31.15	Follow Me (FM) .....	3134
31.15.1	Follow Me (FM) / Registration.....	3134
31.15.2	Follow Me (FM) / Interrogation .....	3140
31.15.3	Follow Me (FM) / Erasure .....	3143
32	Testing of speech transcoding functions .....	3149
32.1	Full Rate Downlink speech transcoding.....	3149
32.2	Full Rate Downlink receiver DTX functions.....	3150
32.3	Full Rate Uplink speech transcoding .....	3153
32.4	Full Rate Uplink transmitter DTX functions .....	3154
32.5	Full Rate Speech channel transmission delay.....	3155
32.5.1	Definition .....	3155
32.5.2	Conformance requirement .....	3155
32.5.3	Test purpose.....	3155
32.5.4	Downlink processing delay .....	3155
32.5.5	Downlink coding delay .....	3156
32.5.6	Uplink processing delay.....	3156
32.5.7	Uplink coding delay .....	3157
32.6	Half Rate Downlink speech transcoding .....	3157
32.7	Half Rate Downlink receiver DTX functions .....	3158
32.8	Half Rate Uplink speech transcoding.....	3159
32.9	Half Rate Uplink transmitter DTX functions .....	3160
32.10	Half Rate Speech channel transmission delay.....	3162
32.10.1	Definition .....	3162
32.10.2	Conformance requirement .....	3162
32.10.3	Test purpose.....	3162
32.10.4	Downlink processing delay .....	3162
32.10.5	Downlink coding delay .....	3163
32.10.6	Uplink processing delay.....	3163
32.10.7	Uplink coding delay .....	3164
32.11	Intra cell channel change from a TCH/HS to a TCH/FS .....	3164
32.12	Intra cell channel change from a TCH/FS to a TCH/HS .....	3166
33	Mobile station features .....	3168
33.1	Entry and display of called number.....	3168
33.2	Indication of call progress signals .....	3169
33.2.1	Definition .....	3169
33.2.2	Conformance requirement .....	3170
33.2.3	Test purpose.....	3170
33.2.4	Ringing tone .....	3170
33.2.5	Busy tone.....	3170
33.2.6	Congestion tone.....	3171
33.2.7	Authentication failure tone .....	3171
33.2.8	Number unobtainable tone.....	3171
33.2.9	Call dropped tone.....	3172
33.3	Network selection / indication.....	3172
33.4	Invalid and blocked PIN indicators .....	3177
33.5	Service indicator .....	3177
33.6	Subscription identity management .....	3178
33.7	Barring of outgoing calls.....	3178
33.8	Prevention of unauthorized calls .....	3179

34	Short message service (SMS).....	3179
34.1	General .....	3180
34.2	Short message service point to point.....	3180
34.2.1	SMS mobile terminated.....	3180
34.2.2	SMS mobile originated .....	3185
34.2.3	Test of memory full condition and memory available notification: .....	3190
34.2.4	Test of the status report capabilities and of SMS -COMMAND: .....	3194
34.2.5	Test of message class 0 to 3 .....	3197
34.2.5.1	Short message class 0.....	3197
34.2.5.2	Test of class 1 short messages .....	3199
34.2.5.3	Test of class 2 short messages .....	3201
34.2.5.4	Test of class 3 short messages .....	3204
34.2.6	Test of short message type 0 (Ph2, R96...R99 and REL-4) .....	3204
34.2.6a	Test of short message type 0 ( $\geq$ REL 5) .....	3206
34.2.7	Test of the replace mechanism for SM type 1-7 .....	3209
34.2.8	Test of the reply path scheme.....	3212
34.2.9	Multiple SMS mobile originated .....	3215
34.2.9.1	MS in idle mode .....	3215
34.2.9.2	MS in active mode .....	3219
34.3	Short message service cell broadcast.....	3221
34.4	Short message service point to point over GPRS .....	3223
34.4.1	SMS mobile terminated.....	3223
34.4.2	SMS mobile originated .....	3227
34.4.3	Test of the status report capabilities and of SMS -COMMAND over GPRS: .....	3231
34.4.4	Test of capabilities of simultaneously receiving a short message whilst sending a mobile originated short message.....	3233
34.4.5	Void .....	3234
34.4.6	Concatenated MO SMS over GPRS .....	3234
34.4.7	Concatenated MT SMS over GPRS .....	3236
34.4.8	Short Messaging Service – Handling of unknown, unforeseen, and erroneous protocol data.....	3238
34.4.8.1	CP Error Handling .....	3238
34.4.8.2	RP Error Handling .....	3240
34.5	Default message contents .....	3244
35	Low battery voltage detection .....	3246
36	Individual equipment type requirements and interworking - special conformance testing functions	3247
37 to 39	Void .....	3247
40	GPRS default conditions, message contents and macros.....	3248
40.1	Default test conditions .....	3248
40.1.1	Default settings for cell A .....	3249
40.1.2	Default settings for cell B .....	3253
40.1.3	Default settings for cell C .....	3253
40.1.4	Default settings for cell D .....	3254
40.1.5	Default settings for cell E .....	3255
40.1.6	Default settings for cell F.....	3256
40.2	Default message contents .....	3257
40.2.1	System Information messages.....	3257
40.2.1.1	Cell A .....	3257
40.2.1.2	Cell B .....	3262
40.2.1.3	Cell C .....	3263
40.2.1.4	Cell D .....	3264
40.2.1.5	Cell E .....	3266
40.2.1.6	Cell F.....	3268
40.2.2	Packet System Information messages on PACCH .....	3270
40.2.3	Default contents of Layer 2 messages .....	3271
40.2.4	Default contents of Layer 3 messages .....	3274
40.2.4.1	ACTIVATE PDP CONTEXT ACCEPT message:.....	3275
40.2.4.2	ACTIVATE PDP CONTEXT REJECT message:.....	3275
40.2.4.3	ATTACH ACCEPT message:.....	3275
40.2.4.4	ATTACH REJECT message:.....	3275

40.2.4.5	AUTHENTICATION AND CIPHERING REJECT message: .....	3275
40.2.4.6	AUTHENTICATION AND CIPHERING REQUEST message: .....	3276
40.2.4.7	CHANNEL RELEASE message: .....	3276
40.2.4.8	DEACTIVATE PDP CONTEXT ACCEPT message: .....	3276
40.2.4.9	DETACH ACCEPT message (for mobile terminated detach): .....	3276
40.2.4.10	DETACH REQUEST message (mobile terminated detach): .....	3276
40.2.4.11	GMM INFORMATION message: .....	3276
40.2.4.12	GMM STATUS message: .....	3276
40.2.4.13	IDENTITY REQUEST message: .....	3277
40.2.4.14	IMMEDIATE ASSIGNMENT messages .....	3277
40.2.4.14.1	IMMEDIATE ASSIGNMENT message (Packet Downlink Construction): .....	3277
40.2.4.14.2	IMMEDIATE ASSIGNMENT message (Packet Uplink construction): .....	3278
40.2.4.14.3	IMMEDIATE ASSIGNMENT message (Single block allocation construction): .....	3279
40.2.4.15	IMMEDIATE ASSIGNMENT EXTENDED message: .....	3279
40.2.4.16	IMMEDIATE ASSIGNMENT REJECT message: .....	3280
40.2.4.17	MODIFY PDP CONTEXT REQUEST message: .....	3280
40.2.4.18	PAGING REQUEST TYPE 1 message: .....	3280
40.2.4.19	PAGING REQUEST TYPE 2 message: .....	3281
40.2.4.20	PAGING REQUEST TYPE 3 message: .....	3281
40.2.4.21	PDCH ASSIGNMENT COMMAND message (downlink): .....	3282
40.2.4.22	REQUEST PDP CONTEXT ACTIVATION message (mobile originated detach): .....	3282
40.2.4.23	ROUTING AREA UPDATE ACCEPT message: .....	3283
40.2.4.24	ROUTING AREA UPDATE REJECT message: .....	3283
40.2.4.25	RR-CELL CHANGE ORDER message: .....	3283
40.2.4.26	SM STATUS message: .....	3283
40.2.4.27	DETACH ACCEPT message (for mobile originated detach): .....	3283
40.2.4.28	DTM Assignment Command .....	3284
40.2.4.29	DTM Reject .....	3285
40.2.4.30	Packet Notification .....	3285
40.2.4.31	Packet Assignment .....	3286
40.2.4.32	Assignment Command .....	3287
40.2.4.33	Handover Command .....	3287
40.2.4.34	Physical Information .....	3287
40.2.4.35	Connect Acknowledge .....	3288
40.2.4.36	Location Updating Accept .....	3288
40.2.4.37	System Information Type 6 .....	3288
40.2.4.38	DTM Information .....	3289
40.2.4.39	PS Handover .....	3289
40.3	Default GPRS Conditions and Message Contents for the Higher Layer Test Cases .....	3290
40.3.1	Default Test Conditions for the Higher Layer Test Cases .....	3290
40.3.2	Default Message for the Higher Layer Test Cases .....	3290
40.3.2.1	Default Contents of System Information Messages for the Higher Layer Test Cases .....	3290
40.3.3	Contents Of Packet System Information Messages for the Higher Layer Test Cases .....	3291
40.3.4	Contents of Layer 2 Messages for the Higher Layer Test Cases .....	3291
40.3.5	Contents of Layer 3 Messages for the Higher Layer Test Cases .....	3291
40.3.6	Timer tolerance for higher layer test cases .....	3292
40.4	Macros .....	3292
40.4.1	Overview .....	3292
40.4.1.1	Definition .....	3292
40.4.1.2	Syntax .....	3292
40.4.1.2.1	Message contents .....	3292
40.4.1.2.2	Message sequence .....	3292
40.4.2	Default message contents .....	3293
40.4.3	Macro message sequences .....	3294
40.4.3.1	Acknowledged downlink data .....	3294
40.4.3.2	Classmark and measurement .....	3294
40.4.3.3	Downlink data .....	3294
40.4.3.4	Downlink data transfer .....	3294
40.4.3.5	Measurement reporting .....	3295
40.4.3.6	Uplink data transfer .....	3295
40.4.3.7	Uplink dynamic allocation one phase access .....	3296
40.4.3.8	Uplink dynamic allocation one phase access with contention resolution .....	3296

40.4.3.9	Uplink dynamic allocation two phase access.....	3297
40.4.3.10	Completion of uplink RLC data block transfer .....	3297
40.4.3.11	Void .....	3299
40.4.3.12	Void .....	3299
40.4.3.13	Void .....	3299
40.4.3.14	Downlink TBF establishment .....	3299
40.4.3.15	PDP Context Activation .....	3299
40.4.3.16	PDP Context Deactivation .....	3299
40.4.3.17	Inter-SGSN Routing Area Update .....	3300
40.4.3.17a	Inter-SGSN Routing Area Update – with PSHO .....	3300
40.4.3.18	PDP Context Modification .....	3301
40.4.3.19	Location Update Procedure .....	3301
40.4.3.20	MT Call in GPRS cell .....	3302
40.4.3.21	Uplink data .....	3304
40.4.3.22	Bring MS in the active state (U10) .....	3305
40.4.3.23	Completion of uplink RLC data block transfer in extended dynamic mode .....	3306
40.5	Test PDP contexts .....	3306
41	GPRS Paging, TBF establishment/release and DCCH related procedures .....	3213
41.1	RR / Paging .....	3213
41.1.1	Void .....	3213
41.1.2	Void .....	3213
41.1.3	Void .....	3213
41.1.4	Void .....	3213
41.1.5	RR / Paging / on CCCH for GPRS service .....	3213
41.1.5.1	RR / Paging / on CCCH for GPRS service / normal paging .....	3213
41.1.5.1.1	RR / Paging / on CCCH for GPRS service / normal paging with P-TMSI successful.....	3213
41.1.5.1.2	RR / Paging / on CCCH for GPRS service / normal paging with IMSI successful .....	3216
41.1.5.1.3	RR / Paging / on CCCH for GPRS service / normal paging with P-TMSI ignored .....	3218
41.1.5.2	RR / Paging / on CCCH for GPRS service / extended paging .....	3220
41.1.5.2.1	RR / Paging / on CCCH for GPRS service / extended paging with P-TMSI successful.....	3220
41.1.5.3	RR / Paging / on CCCH for GPRS service / paging reorganisation .....	3222
41.1.5.4	RR / Paging / on CCCH for GPRS service / default message contents.....	3225
41.1.6	Void .....	3226
41.2	RR procedures on CCCH related to temporary block flow establishment .....	3226
41.2.1	Permission to access the network .....	3226
41.2.1.1	Permission to access the network / priority classes .....	3226
41.2.2	Initiation of the packet access procedure .....	3227
41.2.2.1	Initiation of the packet access procedure / establishment causes .....	3227
41.2.2.2	Random references for single block packet access .....	3229
41.2.2.3	Random references for one phase packet access .....	3230
41.2.2.4	Initiation of the packet access procedure / timer T3146 .....	3231
41.2.2.5	Initiation of the packet access procedure / Request Reference .....	3233
41.2.3	Packet immediate assignment / One phase packet access .....	3234
41.2.3.1	Two-message assignment / Successful case.....	3234
41.2.3.2	Two-message assignment / Failure cases .....	3235
41.2.3.3	Packet uplink assignment / Polling bit set .....	3238
41.2.3.4	One phase packet access / Contention resolution / Successful case .....	3239
41.2.3.5	One phase packet access / Contention resolution / TLLI mis match .....	3240
41.2.3.6	One phase packet access / Contention resolution / Counter N3104 .....	3241
41.2.3.7	One phase packet access / Contention resolution / Timer T3166.....	3242
41.2.3.8	One phase packet access / Contention resolution / 4 access repetition attempts .....	3244
41.2.3.9	One phase packet access / TBF starting time .....	3246
41.2.3.10	One phase packet access / Timing Advance Index present .....	3248
41.2.3.11	One phase packet access / Timing Advance Index not present .....	3250
41.2.4	Packet immediate assignment / Single block packet access .....	3251
41.2.4.1	Single block packet access / Packet Resource Request.....	3251
41.2.4.2	Single block packet access / Packet Measurement Report .....	3252
41.2.5	Packet immediate assignment / Packet access rejection .....	3253
41.2.5.1	Packet access rejection / wait indication.....	3253
41.2.5.2	Packet access rejection / assignment before T3142 expires .....	3254
41.2.6	Packet downlink assignment procedure using CCCH .....	3256

41.2.6.1	Initiation of packet downlink assignment procedure / MS listens to correct CCCH block .....	3256
41.2.6.2	Initiation of packet downlink assignment procedure / timer T3190 .....	3257
41.2.6.3	Initiation of packet downlink assignment procedure / TBF starting time .....	3258
41.2.6.4	Initiation of packet downlink assignment procedure / incorrect TFI .....	3259
41.2.7	Single block packet downlink assignment .....	3260
41.2.7.1	Single block packet downlink assignment / TBF Starting Time .....	3260
41.2.7.2	Single block packet downlink assignment / MS returns to packet idle mode .....	3261
41.2.8	Macros and default message contents.....	3263
41.2.8.1	Macros .....	3263
41.2.8.1.1	GPRS attach procedure.....	3263
41.2.8.1.2	Uplink data transfer .....	3264
41.2.8.1.3	Downlink data transfer.....	3265
41.3	MAC/RLC Release .....	3272
41.3.1	TBF Release / Uplink / Normal / MS initiated .....	3272
41.3.1.1	TBF Release / Uplink / Normal / MS initiated / Acknowledged mode .....	3272
41.3.1.2	TBF Release / Uplink / Normal / MS initiated / Unacknowledged mode.....	3276
41.3.1.3	TBF Release / Uplink / Normal / MS initiated / Channel coding change during countdown .....	3279
41.3.1.4	TBF release / Uplink / Normal / MS initiated / Whilst in DTM .....	3281
41.3.2	TBF Release / Uplink / Normal / Network initiated .....	3282
41.3.2.1	TBF Release / Uplink / Normal / Network initiated / Acknowledged mode.....	3282
41.3.2.2	TBF Release / Uplink / Normal / Network initiated / Unacknowledged mode .....	3284
41.3.2.3	TBF release / Uplink / Normal / Network initiated / Whilst in DTM .....	3286
41.3.3	TBF Release / Uplink / Network initiated / Abnormal release .....	3289
41.3.4	TBF Release / Downlink / Normal / Network initiated .....	3290
41.3.4.1	TBF Release / Downlink / Normal / Network initiated / Acknowledged mode .....	3290
41.3.4.2	TBF Release / Downlink / Normal / Network initiated / Unacknowledged mode .....	3293
41.3.4.3	TBF release / Downlink / Normal / Network initiated / Whilst in DTM .....	3295
41.3.5	PDCH Release .....	3297
41.3.5.1	Void .....	3297
41.3.5.2	PDCH Release / With TIMESLOTS_A VAILABLE .....	3297
41.3.6	TBF Release / Extended Uplink .....	3301
41.3.6.1	TBF Release / Extended Uplink / Recalculation of CV before CV = 0 .....	3301
41.3.6.2	TBF Release / Extended Uplink / Recalculation of CV after CV = 0 .....	3302
41.3.6.3	TBF Release / Extended Uplink / CS change order while CV=0.....	3304
41.3.6.4	TBF Release / Extended Uplink / TBF reconfigure by PACKET TIMESLOT RECONFIGURE ..	3306
41.3.6.5	TBF Release / Extended Uplink / TBF reconfigure by PACKET UPLINK ASSIGNMENT .....	3310
41.3.6.6	Extended Uplink TBF / Cell Change while in Extended Uplink/ No Packet Neighbouring Cell Data .....	3312
41.3.6.7	Extended Uplink TBF / Cell Change failure while in Extended Uplink/ No Packet Neighbouring Cell Data .....	3315
41.3.6.8	Extended Uplink TBF / Cell Change while in Extended Uplink/ With Packet Neighbouring Cell Data .....	3318
41.3.6.9	TBF Release / Extended Uplink / Change of RLC mode / Normal release.....	3322
41.3.6.10	TBF Release / Extended Uplink / Change of RLC mode / Abnormal release .....	3325
41.3.7	Void .....	3328
41.4	Void .....	3328
41.5	Dual transfer mode .....	3328
41.5.1	PS establishment whilst in dedicated mode .....	3328
41.5.1.1	Uplink TBF establishment .....	3328
41.5.1.1.1	Uplink TBF establishment with no reallocation of CS resources .....	3328
41.5.1.1.1.1	Uplink TBF establishment with no reallocation of CS resources / Successful case / Uplink resources assigned.....	3328
41.5.1.1.1.2	Uplink TBF establishment with no reallocation of CS resources / Successful case / Downlink resources assigned .....	3330
41.5.1.1.1.3	Uplink TBF establishment with no reallocation of CS resources / Abnormal cases / DTM reject .....	3332
41.5.1.1.1.4	Uplink TBF establishment with no reallocation of CS resources / Abnormal cases / Inter System to UTRAN Handover Command .....	3333
41.5.1.1.1.5	Uplink TBF establishment with no reallocation of CS resources / Abnormal cases / Assignment Command .....	3338
41.5.1.1.1.6	Uplink TBF establishment with no reallocation of CS resources / Abnormal cases / Handover Command .....	3340

41.5.1.1.7	Uplink TBF establishment with no reallocation of CS resources / Abnormal cases / Channel Release.....	3342
41.5.1.1.2	Uplink TBF establishment with reallocation of CS resources .....	3343
41.5.1.1.2.1	Uplink TBF establishment with reallocation of CS resources / Successful case.....	3343
41.5.1.1.2.2	Uplink TBF establishment with reallocation of CS resources / Abnormal case / Assignment Failure .....	3344
41.5.1.1.2.3	Uplink TBF establishment with reallocation of CS resources / Abnormal case / Multislot class violation.....	3346
41.5.1.1.2.3.1	Void .....	3346
41.5.1.1.2.3.2	Void .....	3346
41.5.1.1.2.3.3	Void .....	3346
41.5.1.1.2.3.4	Uplink TBF establishment with reallocation of CS resources / Abnormal case / Multislot class violation / Singleslot allocation .....	3346
41.5.1.1.2.3.5	Uplink TBF establishment with reallocation of CS resources / Abnormal case / Multislot class violation / Incorrect Allocation.....	3348
41.5.1.1.3	Uplink TBF establishment required whilst DTM is not supported in cell .....	3349
41.5.1.2	Downlink TBF establishment .....	3350
41.5.1.2.1	Whilst in Ready State.....	3350
41.5.1.2.1.1	Downlink TBF establishment in Ready State / Successful case .....	3350
41.5.1.2.1.2	Downlink TBF establishment in Ready State / Abnormal cases / No cell allocation available .....	3352
41.5.1.2.2	Whilst in Standby State / Packet Notification.....	3353
41.5.2	CS establishment whilst in packet transfer mode .....	3354
41.5.2.1	MT CS establishment whilst in packet transfer mode with a downlink TBF established .....	3354
41.5.2.2	MT CS establishment whilst in packet transfer mode with a uplink TBF established .....	3357
41.5.2.3	MO CS establishment whilst in packet transfer mode with uplink and downlink TBFs established .....	3359
41.5.2.4	MO CS establishment whilst in packet transfer mode and DTM is not supported in current cell....	3360
41.5.3	PS establishment whilst in dual transfer mode .....	3362
41.5.3.1	Uplink TBF establishment with a down link TBF established .....	3362
41.5.3.1.1	Uplink TBF establishment with a down link TBF established and no PS downlink reallocation .....	3362
41.5.3.1.2	Uplink TBF establishment with a down link TBF established and PS downlink reallocation .....	3364
41.5.3.2	Downlink TBF establishment with a uplink established.....	3366
41.5.3.2.1	Downlink TBF establishment with a uplink TBF established and no PS uplink reallocation.....	3366
41.5.3.2.2	Downlink TBF establishment with a uplink TBF established and PS uplink reallocation .....	3367
41.5.4	Enhanced DTM CS Establishment.....	3369
41.5.4.1	MT Call Establishment - No Reallocation of PS Resources .....	3369
41.5.4.2	MT Call Establishment - Reallocation of PS Resources - Allocation of New Downlink TBF .....	3370
41.5.4.3	MT Call Establishment - Allocation of CS Resources Only - Downlink TBF .....	3372
41.5.4.4	MO Call Establishment - No Reallocation of PS Resources.....	3374
41.5.4.5	MO Call Establishment - Reallocation of PS Resources .....	3376
41.5.4.6	MO Call Establishment - Allocation of CS Resources Only - Downlink TBF .....	3378
41.5.4.7	MO Call Establishment – IMMEDIATE ASSIGNMENT REJECT .....	3380
41.5.4.8	MO Call Establishment - Dedicated Channel Establishment Failure .....	3386
41.5.5	Enhanced DTM CS Release .....	3389
41.5.5.1	SI Aquisition - No Reallocation of PS Resources .....	3389
41.5.5.2	Reallocation of PS Resources for Uplink and Downlink TBFs .....	3393
41.5.5.3	Change of LA in NW Mode II .....	3396
41.5.5.4	Change of LA in NW Mode I .....	3400
41.6	Intra SGSN PS Handover.....	3403
41.6.1	Intra SGSN PS Handover / Synchronized cell case .....	3403
41.6.1.1	Intra SGSN PS Handover / Synchronized cell case / successful .....	3403
41.6.1.2	Intra SGSN PS Handover / Synchronized cell case / Abnormal Case / T3218 expiry .....	3405
41.6.1.3	Intra SGSN PS Handover / Synchronized cell case / Abnormal Case / Minimum set of SI not available.....	3407
41.6.2	Intra SGSN PS Handover / Pre-synchronized cell case.....	3409
41.6.2.1	Intra SGSN PS Handover / Pre-synchronized cell case / successful / RLC reset.....	3409
41.6.2.2	Intra SGSN PS Handover / Pre-synchronized cell case / Frequency parameters / successful.....	3411
41.6.3	Intra SGSN PS Handover / Non synchronized cell case .....	3415
41.6.3.1	Intra SGSN PS Handover / Non synchronized cell case / PS Handover Access (8-bit / 11-bit format) / successful.....	3415
41.6.3.2	Intra SGSN PS Handover / Non synchronized cell case / Different RA / successful .....	3418
41.6.3.3	Intra SGSN PS Handover / Non synchronized cell case / Abnormal Case / T3216 expiry .....	3421

42	Test of Medium Access Control (MAC) protocol .....	3424
42.1	Test of Medium Access Control (MAC) Procedures .....	3424
42.1.1	Void .....	3424
42.1.2	Packet Uplink/Downlink Assignment .....	3424
42.1.2.1	Packet uplink assignment procedure .....	3424
42.1.2.1.1	Void .....	3424
42.1.2.1.2	Void .....	3424
42.1.2.1.3	Void .....	3424
42.1.2.1.4	Void .....	3424
42.1.2.1.5	Void .....	3424
42.1.2.1.6	Void .....	3424
42.1.2.1.7	Void .....	3424
42.1.2.1.8	Void .....	3424
42.1.2.1.9	Packet Uplink Assignment / Two phase access .....	3424
42.1.2.1.9.1	Void .....	3424
42.1.2.1.9.2	Packet Uplink Assignment / Two phase access / Contention resolution .....	3424
42.1.2.1.9.2.1	Packet Uplink Assignment / Two phase access / Contention resolution / Expiry of timer T3168 .....	3424
42.1.2.1.9.2.2	Packet Uplink Assignment / Two phase access / Contention resolution / TLLI mismatch .....	3425
42.1.2.1.9.3	Packet Uplink Assignment / Two phase access / Packet Resource Request / No respond to Packet Downlink Assignment .....	3427
42.1.2.1.10	Packet Uplink Assignment / Abnormal cases .....	3428
42.1.2.1.10.1	Packet Uplink Assignment / Abnormal cases / Incorrect PDCH assignment .....	3428
42.1.2.1.10.2	Packet Uplink Assignment / Abnormal cases / Expiry of timer T3164 .....	3429
42.1.2.2	Packet Downlink Assignment .....	3431
42.1.2.2.1	Packet Downlink Assignment / Response to poll bit .....	3431
42.1.2.2.2	Void .....	3432
42.1.2.2.3	Void .....	3432
42.1.2.2.4	Packet Downlink Assignment / Response to Packet Polling .....	3432
42.1.2.2.5	Void .....	3434
42.1.2.2.6	Packet Downlink Assignment Timing Advance / TA value field not provided .....	3434
42.2	Void .....	3435
42.3	Dynamic Allocation in Packet Transfer Mode .....	3435
42.3.1	Dynamic Allocation / Uplink Transfer .....	3435
42.3.1.1	Dynamic Allocation / Uplink Transfer / Normal .....	3435
42.3.1.1.1	Dynamic Allocation / Uplink Transfer / Normal / Successful .....	3435
42.3.1.1.2	Void .....	3438
42.3.1.1.3	Dynamic Allocation / Uplink Transfer / Normal / Starting frame number encoding .....	3438
42.3.1.1.4	Dynamic Allocation / Uplink Transfer / Normal / Starting time .....	3439
42.3.1.1.5	Void .....	3443
42.3.1.1.6	Dynamic Allocation / Uplink Transfer / Normal / T3180 expiry .....	3443
42.3.1.1.7	Dynamic Allocation / Uplink Transfer / Normal / PACH operation .....	3445
42.3.1.1.8	Dynamic Allocation / Uplink Transfer / Normal / Two uplink timeslots .....	3446
42.3.1.1.9	Void .....	3448
42.3.1.1.10	Dynamic Allocation / Uplink Transfer / Normal / USF assigned with MCS-1 to MCS-4 .....	3448
42.3.1.2	Dynamic Allocation / Uplink Transfer / Abnormal .....	3449
42.3.1.2.1	Void .....	3449
42.3.1.2.2	Void .....	3449
42.3.1.2.3	Void .....	3449
42.3.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment (concurrent) .....	3449
42.3.2.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal .....	3449
42.3.2.1.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Successful .....	3449
42.3.2.1.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Multislot capabilities .....	3453
42.3.2.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal .....	3462
42.3.2.2.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / with random access .....	3462
42.3.2.2.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / Continuation of normal operation .....	3466
42.3.3	Dynamic Allocation / Resource reallocation .....	3467
42.3.3.1	Dynamic Allocation / Resource reallocation / Successful .....	3467

42.3.3.1.1	Dynamic Allocation / Resource reallocation / Successful / Higher throughput class or higher radio priority .....	3468
42.3.3.1.2	Dynamic Allocation / Resource reallocation / Successful / Lower throughput class .....	3471
42.3.3.1.3	Dynamic Allocation / Resource reallocation / Successful / Different RLC mode and higher radio priority .....	3474
42.3.3.2	Dynamic Allocation / Resource reallocation / Abnormal .....	3477
42.3.3.2.1	Dynamic Allocation / Resource reallocation / Abnormal / T3168 expiry .....	3477
42.3.3.2.2	Dynamic Allocation / Resource reallocation / Abnormal / Invalid assignment.....	3479
42.3.3.3	Dynamic Allocation / Resource reallocation / Reject.....	3483
42.3.3.4	Dynamic Allocation / Resource reallocation / Successful / Lower Coding Scheme Command .....	3485
42.3.4	Default message contents.....	3488
42.4	Measurement reports and Cell change order procedures .....	3488
42.4.1	Measurement reports .....	3488
42.4.1.1	Network Control measurement reporting / Uplink / Normal case .....	3488
42.4.1.2	Network Control measurement reporting / Idle mode / New cell reselection .....	3491
42.4.1.3	Network Control measurement reporting / Downlink transfer / Normal case .....	3494
42.4.1.4	Network Control measurement reporting / Uplink transfer / Continuation in Idle mode .....	3497
42.4.1.5	Network Control measurement reporting / Idle mode / DSC failure/ reselection. ....	3500
42.4.2	Cell change order procedures.....	3502
42.4.2.1	Cell change order procedure / Uplink transfer.....	3502
42.4.2.1.1	Cell change order procedure / Uplink transfer / Normal case .....	3502
42.4.2.1.2	Void.....	3504
42.4.2.1.3	Cell change order procedure / Uplink transfer / Failure cases / REJECT from the new cell.....	3504
42.4.2.1.4	Cell change order procedure / Uplink transfer / Failure cases / Contention resolution failure ...	3507
42.4.2.1.5	Void .....	3511
42.4.2.1.6	Cell change order procedure / Uplink transfer / Failure cases / Frequency not implemented.....	3511
42.4.2.2	Cell change order procedure / Downlink transfer .....	3512
42.4.2.2.1	Cell change order procedure / Downlink transfer / Normal case .....	3512
42.4.2.2.2	Cell change order procedure / Downlink transfer / Failure cases / REJECT from the new cell..	3515
42.4.2.2.3	Cell change order procedure / Downlink transfer / Failure cases / Frequency not implemented .....	3517
42.4.2.3	Cell change order procedure / Simultaneous uplink and downlink transfer .....	3519
42.4.2.3.1	Cell change order procedure / Simultaneous uplink and downlink transfer / Normal case .....	3519
42.4.2.3.2	Void.....	3523
42.4.2.3.3	Void .....	3523
42.4.2.3.4	Packet Measurement order procedure / Downlink transfer / Normal case/ Routing Area Update/ NMO II .....	3523
42.4.2.3.5	Packet Measurement order procedure / Downlink transfer / Normal case/ Routing Area Update/ NMO I.....	3526
42.4.2.3.6	MT CS establishment whilst in NC2 with a down link TBF established.....	3529
42.4.2.3.7	MT CS establishment whilst in NC2 with a uplink TBF established .....	3531
42.4.3	Macros and Default Message contents .....	3534
42.4.3.1	Macros .....	3534
42.4.3.1.1	Void .....	3534
42.4.3.1.2	Void .....	3534
42.4.3.2	Default Messages .....	3534
42.4.3.2.1	PACKET CELL CHANGE ORDER message.....	3534
42.4.3.2.2	PACKET CELL CHANGE FAILURE message .....	3534
42.4.3.2.3	PACKET MEASUREMENT ORDER message .....	3535
42.4.4	Cell Change Order Procedures without PBCCH .....	3535
42.4.4.1	Network Controlled Cell Reselection – Packet Measurement Order Procedure .....	3535
42.4.4.2	Network Controlled Cell Reselection/validity of reselection parameters/MS enters standby state ..	3536
42.4.4.3	Network Control measurement reporting / Idle mode / Returning to Broadcast parameters .....	3538
42.4.4.4	Void .....	3540
42.4.4.5	Network Control measurement reporting / Idle mode / Reselection due to RA failure .....	3540
42.4.5	Network Assisted Cell Change .....	3541
42.4.5.1	Network Assisted Cell Change / Expiry of T3206.....	3541
42.4.5.2	Network Assisted Cell Change / No Packet Neighbouring Cell Data and Packet Cell Change Continue .....	3543
42.4.5.3	Void .....	3545
42.4.5.4	Network Assisted Cell Change / Packet Neighbour Cell Data and Packet Cell Change Order .....	3545
42.4.5.5	Network Assisted Cell Change / Expiry of T3208 and T3210 .....	3552
42.4.5.6	Network Assisted Cell Change / Entering packet idle mode .....	3555

42.4.5.7	Network Assisted Cell Change / CCN not supported towards target cell.....	3557
42.4.5.8	Network Assisted Cell Change / NC mode change .....	3560
42.4.5.9	Network Assisted Cell Change / NC mode change / Packet Neighbour Cell Data .....	3562
42.4.6	Packet Enhanced Measurement Report (PEMR).....	3569
42.4.6.1	Network Control PEMR – Activation with SI Messages .....	3569
42.4.6.2	Void .....	3572
42.4.6.3	Network Control PEMR – Packet Measurement Order .....	3572
42.4.6.4	Network Control PEMR – Uplink Data Transfer.....	3576
42.4.6.5	Network Control PEMR – Downlink Data Transfer .....	3580
42.4.6.6	Network Control PEMR / Packet Cell Change Order .....	3584
42.4.6.7	Void .....	3586
42.4.7	Inter-RAT (GPRS to UTRAN) Cell Change Order .....	3586
42.4.7.1	Inter-RAT Cell Change Order (Known Cell) – Uplink Data Transfer .....	3586
42.4.7.2	Inter-RAT Cell Change Order (Unknown Cell) – Uplink Data Transfer.....	3589
42.4.7.3	Inter-RAT Cell Change Order (Known Cell) – Downlink Data Transfer.....	3590
42.4.7.4	Inter-RAT Cell Change Order (Known Cell) – Simultaneous uplink and downlink transfer .....	3593
42.4.7.5	Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure .....	3596
42.4.7.5.1	Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure / Uplink transfer / T3174 expiry .....	3596
42.4.7.5.2	Inter-RAT (GPRS to UTRAN) Cell Change Order (Known cell) / Failure / Downlink transfer / REJECT from target UTRAN cell with Inter-RAT info set to GSM .....	3598
42.4.8	NC2 Procedures .....	3601
42.4.8.1	NC2 and DRX .....	3601
42.4.8.1.1	NC2 and DRX / NC_NON_DRX_PERIOD / Respect of NC2 non-DRX mode period .....	3601
42.4.8.1.2	NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period ordered in Packet Cell Change Order .....	3604
42.4.8.1.3	Void .....	3607
42.4.8.1.4	NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period broadcast in SI2Quater .....	3607
42.4.8.1.5	Void .....	3612
42.4.8.1.6	NC2 and DRX / NC_NON_DRX_PERIOD / NC2 non-DRX mode period / PBCCH absent / Default Value .....	3612
42.4.8.2	User Data vs Measurement Report Sending / Conflict situation .....	3616
42.4.8.2.1	Void .....	3616
42.4.8.2.2	User Data vs Measurement Report Sending / Conflict situation / Expiry of T3192 and T3158 ..	3616
42.4.8.2.3	User Data vs Measurement Report Sending / Conflict situation / Expiry of T3182 and T3158 ..	3618
42.4.8.2.4	User Data vs Measurement Report Sending / Conflict situation / Random Access procedure for PMR sending and User Data transmission.....	3622
42.4.8.3	Network Control measurement reporting and Dedicated connection.....	3624
42.4.8.3.1	Network Control measurement reporting / Dedicated connection / Timer Ready expiry .....	3624
42.4.8.3.2	Network Control measurement reporting / Dedicated connection / Different NC parameters / No T3158 expiry .....	3626
42.4.8.3.3	Network Control measurement reporting / Dedicated connection / Handover / No T3158 expiry .....	3629
42.4.8.3.4	Network Control measurement reporting / Dedicated connection / Different NC parameters / T3158 expiry .....	3632
42.4.8.3.5	Network Control measurement reporting / Dedicated connection / Handover / T3158 expiry ....	3635
42.4.8.3.6	Network Control measurement reporting / Dedicated connection / Assignment Reject/ .....	3638
42.4.8.4	Network Control measurement reporting / NC_FREQUENCY_LIST .....	3639
42.4.8.4.1	Network Control measurement reporting / NC_FREQUENCY_LIST / NC_FREQUENCY_LIST in Packet measurement order. ....	3639
42.4.8.4.2	Void .....	3645
42.4.8.4.3	Network Control measurement reporting / NC_FREQUENCY_LIST / PMO with empty NC_FREQUENCY_LIST/ Return to BA(GPRS). ....	3645
42.4.8.4.4	Network Control measurement reporting / NC_FREQUENCY_LIST / Changes in BA(GPRS)/ Return to BA(GPRS). ....	3648
42.4.8.4.5	Network Control measurement reporting / NC_FREQUENCY_LIST / Dedicated connection/ Return to BA(GPRS).....	3651
42.4.8.4.6	Network Control measurement reporting / NC_FREQUENCY_LIST / PMO sent in multiple instances.....	3653
42.4.8.4.7	Network Control measurement reporting / NC_FREQUENCY_LIST / same cell present twice in the list. ....	3657

42.4.8.5	NC2 and DTM .....	3659
42.4.8.5.1	Ignoring Packet Measurement Order and Packet Cell Change Order whilst in DTM .....	3659
42.5	Downlink Transfer .....	3661
42.5.1	Downlink Transfer / Normal Operation .....	3661
42.5.1.1	Void .....	3661
42.5.1.2	Downlink Transfer/ Normal Operation / Without TBF starting time .....	3661
42.5.2	Downlink Transfer / Polling .....	3663
42.5.2.1	Downlink Transfer/ Polling/ Normal operation/RLC data block .....	3663
42.5.2.2	Downlink Transfer/ Polling/ Packet Polling Request/ Access Burst format .....	3664
42.5.2.3	Downlink Transfer/ Polling/ Packet Polling Request/ Control block format .....	3665
42.5.3	Downlink Transfer / T3190 Expiry / Initial allocation .....	3667
42.5.3.1	Downlink Transfer/ T3190 Expiry / Initial allocation / Restart with valid RLC data block .....	3667
42.5.4	Downlink Transfer / T3190 Expiry / Resource reallocation .....	3669
42.5.4.1	Downlink Transfer/ T3190 Expiry / Resource reallocation / Without TBF starting time .....	3669
42.5.4.2	Downlink Transfer/ T3190 Expiry / Resource reallocation / With TBF starting time .....	3671
42.5.4.3	Downlink Transfer/ T3190 Expiry / Resource reallocation / Restart with valid RLC data block ....	3672
42.5.5	Downlink Transfer / Reestablishment .....	3674
42.5.5.1	Downlink Transfer/ Reestablishment/ T3192 Expiry .....	3674
42.5.5.2	Downlink Transfer/ Reestablishment/ Packet Downlink Assignment.....	3677
42.5.5.3	Void .....	3679
42.6	MAC Modes whilst in DTM .....	3679
42.6.1	Exclusive allocation in single-slot configuration.....	3679
42.6.2	Void .....	3680
42.6.3	Void .....	3680
42.7	Packet assignment/ TA Value .....	3680
42.7.1	Void .....	3680
42.7.2	Packet Assignment / TA Value/TA not present in Packet uplink assignment sent On the PACCH .....	3680
42.7.3	Packet Assignment / TA Value/ PACKET POWER CONTROL/TIMING ADVANCE during contention resolution .....	3681
42.7.4	Packet Assignment / TA Value/TAI present/ multislot capabilities .....	3683
42.7.5	Packet Assignment / TA Value/ Update of TA using PACKET POWER CONTROL/TIMING ADVANCE .....	3684
42.7.6	Packet Uplink Assignment / Timing Advance / TA Index change.....	3686
42.7.7	Void .....	3687
42.8	Dynamic allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168 .....	3687
42.8.1	Dynamic Allocation/ Downlink Transfer with Uplink TBF Establishment/ T3168/ Expiry .....	3687
42.8.2	Dynamic Allocation/ Downlink Transfer with Up link TBF Establishment/ T3168/ Stop with Packet Uplink Assignment .....	3689
42.8.3	Dynamic Allocation/ Downlink Transfer with Up link TBF Establishment/ T3168/ Packet Access Reject/ With WAIT_INDICATION .....	3691
42.8.4	Dynamic Allocation/ Downlink Transfer with Up link TBF Establishment/ T3168/ Packet Access Reject/No WAIT_INDICATION .....	3693
42.8.5	Dynamic Allocation/ Downlink Transfer with Up link TBF Establishment/T3168/Packet Access Reject/With Polling.....	3694
42.9	Extended Dynamic Allocation in Packet Transfer Mode .....	3696
42.9.1	Default message contents.....	3696
42.9.2	Extended Dynamic Allocation / Up link Transfer .....	3701
42.9.2.1	Extended Dynamic Allocation / Up link Transfer / Normal .....	3701
42.9.2.1.1	Extended Dynamic Allocation / Up link Transfer / Normal / Successful .....	3701
42.9.2.1.2	Extended Dynamic Allocation / Up link Transfer / Normal / USF_GRANULARITY = 4 blocks .....	3704
42.9.2.1.3	Extended Dynamic Allocation / Up link Transfer / Normal / Allocation via polling mechanism .....	3706
42.9.2.1.4	Extended Dynamic Allocation / Up link Transfer / Normal / PACCH operation in downlink .....	3710
42.9.2.1.5	Extended Dynamic Allocation / Up link Transfer / Normal / Polling for PDAN .....	3715
42.9.2.2	Extended Dynamic Allocation / Up link Transfer / Configuration Change .....	3717
42.9.2.2.1	Extended Dynamic Allocation / Up link Transfer / configuration change / Changes in the Allocation from Dynamic to Extended Dynamic .....	3717
42.9.2.2.2	Extended Dynamic Allocation / Up link Transfer / configuration change / Changes in the Allocation from Extended Dynamic to Dynamic .....	3720
42.9.2.2.3	Extended Dynamic Allocation / Up link Transfer / configuration change / Reduction in number of uplink slots using PACKET UPLINK ASSIGNMENT. ....	3723

42.9.2.2.4	Extended Dynamic Allocation / Uplink Transfer / configuration change / Reduction in number of uplink slots using PACKET PDCH RELEASE .....	3726
42.9.2.2.5	Extended Dynamic Allocation / Uplink Transfer / configuration change / Increase in number of uplink slots.....	3729
42.9.3	Extended Dynamic Allocation / Shifted USF .....	3732
42.9.3.1	Extended Dynamic Allocation / Shifted USF / Normal .....	3732
42.9.3.1.1	Extended Dynamic Allocation / Shifted USF / Normal / PACCH management .....	3732
42.9.3.1.2	Extended Dynamic Allocation / Shifted USF / Normal / USF assignment on 2 <sup>nd</sup> PDCH .....	3733
42.9.3.1.3	Extended Dynamic Allocation / Shifted USF / Normal / Release of 2 <sup>nd</sup> PDCH.....	3735
<b>43</b>	<b>RLC Test Cases .....</b>	<b>3738</b>
43.1	Acknowledged Mode.....	3738
43.1.1	Acknowledged mode / Uplink TBF .....	3738
43.1.1.1	Acknowledged mode / Uplink TBF / Send state variable V(S) .....	3738
43.1.1.2	Acknowledged mode / Uplink TBF / Transmit window size .....	3739
43.1.1.3	Acknowledged mode / Uplink TBF / Acknowledge state variable V(A) .....	3741
43.1.1.4	Acknowledged mode / Uplink TBF / Negatively acknowledged RLC data blocks .....	3744
43.1.1.5	Acknowledged mode / Uplink TBF / Invalid Negative Acknowledgment .....	3746
43.1.1.6	Acknowledged mode / Uplink TBF / Decoding of Received Block Bitmap .....	3747
43.1.2	Acknowledged mode / Downlink TBF .....	3749
43.1.2.1	Acknowledged mode / Downlink TBF / Receive state variable V(R).....	3749
43.1.2.2	Acknowledged mode / Downlink TBF / Receive window state variable V(Q) .....	3750
43.1.2.3	Acknowledged mode / Downlink TBF / Re-assembly of RLC data blocks .....	3751
43.1.2.4	Acknowledged mode / Downlink TBF / Re-assembly / Length Indicator.....	3752
43.2	Control Blocks .....	3754
43.2.1	Control Blocks Re-assembly .....	3754
43.3	Default Message Contents and Macros .....	3756
43.3.1	Message Contents.....	3756
43.3.2	Macros.....	3757
43.3.2.1	Macro for uplink dynamic allocation two phase access (PBCCH not present) .....	3757
43.3.2.2	Macro for downlink TBF establishment (PBCCH not present).....	3757
<b>44</b>	<b>Test case requirements for GPRS mobility management .....</b>	<b>3757</b>
44.1	Default conditions and default messages .....	3757
44.2	Elementary procedures of GPRS mobility management .....	3758
44.2.1	GPRS attach procedure .....	3758
44.2.1.1	Normal GPRS attach .....	3758
44.2.1.1.1	GPRS attach / accepted.....	3758
44.2.1.1.1a	GPRS attach / accepted / Attach with IMSI .....	3761
44.2.1.1.2	GPRS attach / rejected / IMSI invalid / illegal MS .....	3762
44.2.1.1.3	GPRS attach / rejected / IMSI invalid / GPRS services not allowed .....	3765
44.2.1.1.4	GPRS attach / rejected / PLMN not allowed .....	3767
44.2.1.1.5	GPRS attach / rejected / roaming not allowed in this location area .....	3770
44.2.1.1.6	GPRS attach / abnormal cases / access barred due to access class control.....	3778
44.2.1.1.7	GPRS attach / abnormal cases / change of cell into new routing area .....	3781
44.2.1.1.8	GPRS attach / abnormal cases / power off .....	3783
44.2.1.1.9	GPRS attach / abnormal cases / GPRS detach procedure collision .....	3785
44.2.1.1.10	GPRS attach / rejected / GPRS services not allowed in this PLMN .....	3786
44.2.1.2	Combined GPRS attach .....	3789
44.2.1.2.1	Combined GPRS attach / GPRS and non-GPRS attach accepted .....	3789
44.2.1.2.2	Combined GPRS attach / GPRS only attach accepted .....	3792
44.2.1.2.3	Combined GPRS attach / GPRS attach while IMSI attach.....	3797
44.2.1.2.3a	Combined GPRS attach / NMO-I enabled in MS .....	3799
44.2.1.2.4	Combined GPRS attach / rejected / IMSI invalid / illegal ME .....	3800
44.2.1.2.5	Combined GPRS attach / rejected / GPRS services and non-GPRS services not allowed .....	3803
44.2.1.2.6	Combined GPRS attach / rejected / GPRS services not allowed .....	3806
44.2.1.2.7	Combined GPRS attach / rejected / location area not allowed .....	3809
44.2.1.2.7a	Combined GPRS attach / rejected / network reject with Extended Wait Timer .....	3812
44.2.1.2.8	Combined GPRS attach / abnormal cases / attempt counter check / miscellaneous reject causes .....	3814
44.2.1.2.9	Combined GPRS attach / abnormal cases / GPRS detach procedure collision .....	3817
44.2.2	GPRS detach procedure .....	3819

44.2.2.1	MS initiated GPRS detach procedure.....	3820
44.2.2.1.1	GPRS detach / power off / accepted .....	3820
44.2.2.1.2	GPRS detach / accepted.....	3821
44.2.2.1.3	GPRS detach / abnormal cases / attempt counter check / procedure timeout .....	3823
44.2.2.1.4	GPRS detach / abnormal cases / GMM common procedure collision.....	3826
44.2.2.1.5	GPRS detach / power off / accepted .....	3827
44.2.2.1.6	GPRS detach / accepted / GPRS/IMSI detach .....	3829
44.2.2.1.7	GPRS detach / accepted / IMSI detach .....	3830
44.2.2.1.8	GPRS detach / abnormal cases / change of cell into new routing area .....	3833
44.2.2.1.9	GPRS detach / abnormal cases / GPRS detach procedure collision .....	3834
44.2.2.2	Network initiated GPRS detach procedure.....	3836
44.2.2.2.1	GPRS detach / re-attach not required / accepted.....	3836
44.2.2.2.2	GPRS detach / rejected / IMSI invalid / GPRS services not allowed .....	3838
44.2.2.2.3	GPRS detach / IMSI detach / accepted .....	3840
44.2.2.2.4	GPRS detach / re-attach requested / accepted.....	3841
44.2.2.2.5	GPRS detach / rejected / location area not allowed .....	3844
44.2.2.2.6	GPRS detach / rejected / GPRS services not allowed in this PLMN .....	3848
44.2.3	Routing area updating procedure.....	3851
44.2.3.1	Normal routing area updating.....	3851
44.2.3.1.1	Routing area updating / accepted.....	3851
44.2.3.1.1a	Routing area updating / accepted / old P-TMSI .....	3854
44.2.3.1.2	Routing area updating / rejected / IMSI invalid / illegal ME .....	3856
44.2.3.1.3	Routing area updating / rejected / MS identity cannot be derived by the network.....	3858
44.2.3.1.4	Routing area updating / rejected / location area not allowed .....	3860
44.2.3.1.5	Routing area updating / abnormal cases / attempt counter check / miscellaneous reject causes ..	3863
44.2.3.1.6	Routing area updating / abnormal cases / change of cell into new routing area .....	3866
44.2.3.1.7	Routing area updating / abnormal cases / change of cell during routing area updating procedure.....	3868
44.2.3.1.8	Routing area updating / abnormal cases / P-TMSI reallocation procedure collision .....	3870
44.2.3.2	Combined routing area updating .....	3871
44.2.3.2.1	Combined routing area updating / combined RA/LA accepted.....	3871
44.2.3.2.2	Combined routing area updating / MS in CS operation at change of RA .....	3874
44.2.3.2.3	Combined routing area updating / RA only accepted .....	3877
44.2.3.2.4	Combined routing area updating / rejected / PLMN not allowed .....	3883
44.2.3.2.5	Combined routing area updating / rejected / roaming not allowed in this location area .....	3886
44.2.3.2.6	Combined routing area updating / abnormal cases / access barred due to access class control...	3893
44.2.3.2.7	Combined routing area updating / abnormal cases / attempt counter check / procedure timeout	3897
44.2.3.2.8	Combined routing area updating / abnormal cases / change of cell into new routing area .....	3901
44.2.3.2.9	Combined routing area updating / abnormal cases / change of cell during routing area updating procedure .....	3903
44.2.3.2.10	Combined routing area updating / abnormal cases / GPRS detach procedure collision .....	3905
44.2.3.3	Periodic routing area updating.....	3908
44.2.3.3.1	Periodic routing area updating / accepted.....	3908
44.2.3.3.2	Periodic routing area updating / accepted / T3312 default value .....	3909
44.2.3.3.2a	Periodic routing area updating / accepted / per-device value.....	3911
44.2.3.3.3	Periodic routing area updating / no cell available / network mode I .....	3913
44.2.3.3.4	Periodic routing area updating / no cell available .....	3915
44.2.4	P-TMSI reallocation .....	3917
44.2.5	GPRS authentication and ciphering .....	3919
44.2.5.1	Test of authentication.....	3919
44.2.5.1.1	Authentication accepted.....	3920
44.2.5.1.2	Authentication rejected .....	3921
44.2.5.1.3	Authentication accepted with USIM .....	3924
44.2.5.2	Test of ciphering mode setting .....	3926
44.2.5.2.1	Ciphering mode / start ciphering .....	3926
44.2.5.2.2	Ciphering mode / stop ciphering .....	3929
44.2.5.2.3	Ciphering mode / IMEISV request .....	3932
44.2.5.2.4	Ciphering mode/Cipher key Kc <sub>128</sub> and algorithm changes .....	3935
44.2.5.2.5	Ciphering mode / Non support of GEA 1 .....	3938
44.2.5.2.5.1	Conformance requirement.....	3938
44.2.5.2.5.2	Test Purpose.....	3938
44.2.5.2.5.3	Method of Test.....	3939

44.2.6	Identification procedure .....	3940
44.2.6.1	General Identification.....	3940
44.2.7	GMM READY timer handling .....	3941
44.2.8	DTM mobility management .....	3949
44.2.8.1	Change of cell between two LAs in idle mode .....	3949
44.2.8.1.1	Change of cell between two LAs in idle mode / RAU completes first.....	3949
44.2.8.1.2	Change of cell between two LAs in idle mode / LAU completes first / SS releases channel .....	3950
44.2.8.1.3	Change of cell between two LAs in idle mode / LAU completes first / SS maintains channel....	3951
44.2.8.2	Void.....	3953
44.2.9	Network Identity and Timezone (NITZ) .....	3953
44.2.9.1	NITZ and GPRS procedures .....	3953
44.2.9.1.1	NITZ / GPRS / Timezone, Time and DST Handling .....	3953
44.2.9.1.2	NITZ / GPRS / NITZ Parameters / Storage / Deletion.....	3956
44.2.9.1.3	NITZ / GPRS / MM and GMM Signalling .....	3958
44.2.10	MS Radio Access Capability Interrogation .....	3963
44.2.11	Cell Notification .....	3964
45	Session Management Procedures.....	3969
45.1	Definition .....	3969
45.2	PDP context activation .....	3969
45.2.1	Initiated by the mobile station.....	3969
45.2.1.1	Attach initiated by context activation/QoS Offered by Network is the QoS Requested.....	3969
45.2.1.2	QoS Offered by Network is a lower QoS .....	3971
45.2.1.2.1	QoS Accepted by MS.....	3971
45.2.1.2.2	QoS Rejected by MS.....	3972
45.2.2	PDP context activation requested by the network, successful and unsuccessful .....	3974
45.2.3	Void .....	3977
45.2.4	Abnormal cases .....	3977
45.2.4.1	T3380 Expiry .....	3977
45.2.4.2	Collision of MS initiated and network requested PDP context activation .....	3979
45.2.4.3	Network initiated PDP context activation request for an already activated PDP context (on the MS side) .....	3981
45.2.5	Secondary PDP context activation procedures.....	3982
45.2.5.1	Successful Secondary PDP Context Activation Procedure Initiated by the MS .....	3982
45.2.5.1.1	QoS Offered by Network is the QoS Requested .....	3982
45.2.5.1.2	QoS Offered by Network is a lower QoS .....	3984
45.2.5.1.2.1	QoS accepted by MS.....	3984
45.2.5.1.2.2	QoS rejected by MS .....	3985
45.2.5.2	Unsuccessful Secondary PDP Context Activation Procedure Initiated by the MS .....	3987
45.2.5.3	Abnormal cases .....	3988
45.2.5.3.1	T3380 Expiry .....	3988
45.3	PDP context modification procedure .....	3989
45.3.1	Network initiated PDP context modification .....	3989
45.3.2	MS initiated PDP context modification .....	3992
45.3.2.1	MS initiated PDP Context Modification accepted by network.....	3992
45.3.2.2	MS initiated PDP Context Modification not accepted by the network.....	3993
45.3.3	Abnormal cases .....	3994
45.3.3.1	T3381 Expiry .....	3994
45.3.3.2	Collision of MS and network initiated PDP context modification procedures .....	3996
45.4	PDP context deactivation procedure .....	3998
45.4.1	PDP context deactivation initiated by the MS .....	3998
45.4.2	PDP context deactivation initiated by the network .....	4000
45.4.3	Abnormal cases .....	4002
45.4.3.1	T3390 Expiry .....	4002
45.4.3.2	Collision of MS and network initiated PDP context deactivation requests .....	4004
45.4.4	PDP context deactivation initiated by the network / Tear down indicator.....	4006
45.5	Unknown or Unforeseen Transaction Identifier/Non-semantical Mandatory Information Element Errors .	4008
45.5.1	Error cases .....	4008
46	LLC and SNDCP Tests.....	4013
46.1	LLC Tests .....	4013
46.1.1	Default Conditions .....	4014

46.1.2	Test cases.....	4014
46.1.2.1	Unacknowledged data transfer .....	4014
46.1.2.1.1	Data transmission in protected mode .....	4014
46.1.2.1.2	Data transmission in unprotected mode .....	4015
46.1.2.1.3	Reception of I frame in ADM .....	4016
46.1.2.2	Acknowledged data transfer.....	4017
46.1.2.2.1	Link establishment.....	4017
46.1.2.2.1.1	Link establishment from MS to SS .....	4017
46.1.2.2.1.2	Link establishment from SS to MS .....	4018
46.1.2.2.1.3	Loss of UA frame .....	4019
46.1.2.2.1.4	Total loss of UA frame .....	4020
46.1.2.2.1.5	DM response.....	4021
46.1.2.2.2	MS sends I+S frames .....	4022
46.1.2.2.2.1	Checking N(S) .....	4022
46.1.2.2.2.2	Busy condition at the peer, with RR sent for resumption of transmission .....	4023
46.1.2.2.2.3	Busy condition at the peer, with ACK sent for resumption of transmission .....	4025
46.1.2.2.2.4	SACK frame .....	4027
46.1.2.2.3	Reception of I + S frames at the MS .....	4028
46.1.2.2.3.1	Checking N(R) .....	4028
46.1.2.2.3.2	MS handling busy condition during bi-directional data transfer .....	4029
46.1.2.2.3.3	SACK frame .....	4031
46.1.2.2.3.4	ACK frame .....	4032
46.1.2.2.4	Link Reestablishment .....	4033
46.1.2.2.4.1	Reestablishment due to reception of SABM .....	4033
46.1.2.2.4.2	Reestablishment due to N200 failures .....	4035
46.1.2.2.4.3	Reestablishment due to reception of DM .....	4036
46.1.2.3	Collision of commands and responses .....	4037
46.1.2.3.1	Collision of SABM .....	4037
46.1.2.3.2	Collision of SA BM and DISC .....	4038
46.1.2.3.3	Collision of SA BM and XID commands .....	4039
46.1.2.4	Unsolicited response frames .....	4040
46.1.2.4.1	Unsolicited DM .....	4040
46.1.2.5	FRMR frames .....	4041
46.1.2.5.1	Sending FRMR due to undefined command control field .....	4041
46.1.2.5.2	Sending FRMR due to reception of an S frame with incorrect length.....	4042
46.1.2.5.3	Sending FRMR due to reception of an I frame information field exceeding the maximum length.....	4043
46.1.2.5.4	Frame reject condition during establishment of ABM .....	4045
46.1.2.6	Multiple Connections.....	4046
46.1.2.6.1	Simultaneous acknowledged and unacknowledged data transfer on the same SAPI .....	4046
46.1.2.6.2	Simultaneous acknowledged and unacknowledged data transfer on different SAPIS .....	4047
46.1.2.7	XID Negotiation.....	4048
46.1.2.7.1	Negotiation initiated by the SS during ABM, for T200 and N200 .....	4048
46.1.2.7.2	Negotiation initiated by the SS during ADM, for N201-I .....	4049
46.1.2.7.3	Negotiation initiated by the SS (using XID, for IOV-UI).....	4050
46.1.2.7.4	Negotiation initiated by the SS (during ADM, for N201-U).....	4051
46.1.2.7.5	Negotiation initiated by the SS (during ADM, for IOV-UI) .....	4052
46.1.2.7.6	Negotiation initiated by the SS (during ABM, for Reset).....	4055
46.1.2.7.7	XID command with unrecognised type field .....	4057
46.1.2.7.8	XID Response with out of range values.....	4058
46.2	SNDCP Tests.....	4059
46.2.1	Default Conditions .....	4059
46.2.2	Test cases.....	4059
46.2.2.1	Data transfer.....	4059
46.2.2.1.1	Mobile originated normal data transfer with LLC in acknowledged mode .....	4059
46.2.2.1.2	Mobile originated normal data transfer with LLC in unacknowledged mode .....	4061
46.2.2.1.3	Usage of acknowledged mode for data transmission before and after PDP Context modification, on different SAPIS .....	4063
46.2.2.1.4	Reset indication during unacknowledged mode .....	4065
46.2.2.1.5	Reset indication during acknowledged mode .....	4066
46.2.2.1.6	Inter SGSN (with NAS container / new Routing Area / SGSN indicated Reset) PS Handover / Synchronized cell case / successful.....	4068

46.2.2.2	Segmentation .....	4069
46.2.2.1	LLC link re-establishment on reception of SN-DATA PDU with F=0 in ack mode in the Receive First Segment state .....	4069
46.2.2.2	LLC link re-establishment on receiving second segment with F=1 and with different PCOMP and DCOMP values in the acknowledged mode data transfer.....	4070
46.2.2.3	Single segment N-PDU from MS .....	4071
46.2.2.3	Link Release .....	4072
46.2.2.3.1	LLC link release on receiving DM from the SS during link establishment.....	4072
46.2.2.4	XID negotiation.....	4073
46.2.2.4.1	Response from MS on receiving XID request from the SS .....	4073
46.2.2.4.2	Response from MS on receiving an XID request from the SS with an unassigned entity number .....	4075
46.2.2.4.3	Response from MS on receiving an XID response from the SS with unrecognised type field .....	4076
46.2.2.5	LLC link release on receiving "Invalid XID response" from the network during link establishment procedure .....	4077
47	Dual Transfer Mode .....	4078
47.1	Reallocation of CS resources.....	4078
47.1.1	Reallocation of CS resources / Assignment Command .....	4078
47.1.2	Reallocation of CS resources / Handover Command .....	4080
47.1.3	Intra frequency reallocation of CS resources / DTM Assignment Command .....	4083
47.1.4	Inter frequency reallocation of CS resources / DTM Assignment Command .....	4084
47.2	Release of CS resources .....	4087
47.2.1	Mobile originating CS release .....	4087
47.3	Handover.....	4088
47.3.1	Handover to same routeing area .....	4088
47.3.1.1	Handover to same routeing area whilst in dedicated mode & MM Ready / Completed on the main DCCH .....	4088
47.3.1.2	Handover to same routeing area whilst in DTM with downlink TBF Established.....	4090
47.3.1.3	Handover to same routeing area whilst in DTM with both DL & UL TBFs .....	4092
47.3.1.3.1	Handover to same routeing area whilst in DTM with both DL & UL TBFs / Successful case .....	4092
47.3.1.3.2	Handover to same routeing area whilst in DTM with both DL & UL TBFs / Abnormal case / Handover Failure .....	4095
47.3.2	Handover to different routeing area whilst in DM .....	4098
47.3.2.1	Handover to different routeing area whilst in DM / Performed on main DCCH / RAU complete before CS release .....	4098
47.3.2.2	Handover to different routeing area whilst in DM / Performed on main DCCH / CS release before RAU complete .....	4099
47.3.3	Handover to different routeing area whilst in DTM .....	4101
47.3.3.1	Handover to different routeing area whilst in DTM / Performed on TBFs .....	4101
47.3.3.1.1	Handover to different routeing area whilst in DTM / Performed on TBFs / RAU complete before CS release .....	4101
47.3.3.1.2	Handover to different routeing area whilst in DTM / Performed on TBFs / CS release before RAU complete .....	4104
47.3.4	Handover to UTRAN while in DTM .....	4107
47.3.4.1	Handover to UTRAN while in DTM / Downlink TBF .....	4107
47.3.4.2	Handover to UTRAN while in DTM / Uplink TBF .....	4113
47.4	Session Management .....	4119
47.4.1	PDP Context Activation / Performed on main DCCH and TBFs .....	4119
48 to 49	Void .....	4123
50	EGPRS Default Conditions, Message Contents and Macros .....	4124
50.1	EGPRS Default Test Conditions.....	4124
50.2	EGPRS Default Message Contents .....	4124
50.2.1	EGPRS System Information Messages .....	4124
50.2.2	EGPRS Packet System Information messages.....	4125
50.2.2.1	Cell A .....	4125
50.2.3	EGPRS default contents of Layer 2 messages .....	4125
50.2.3.1	PACKET UPLINK ASSIGNMENT message.....	4126
50.2.3.2	PACKET DOWNLINK ASSIGNMENT message.....	4127
50.2.4	EGPRS Default contents of Layer 3 messages .....	4127
50.2.4.1	IMMEDIATE ASSIGNMENT messages.....	4128

50.2.4.1.1	IMMEDIATE ASSIGNMENT message (Packet Downlink Construction) .....	4128
50.2.4.1.2	IMMEDIATE ASSIGNMENT message (Packet Uplink construction): .....	4129
50.2.4.1.3	IMMEDIATE ASSIGNMENT message (Multiblock allocation construction): .....	4130
50.2.4.2	IMMEDIATE ASSIGNMENT REJECT message .....	4130
50.2.4.3	PDCH ASSIGNMENT COMMAND message (downlink) .....	4131
50.2.4.4	DTM Assignment Command .....	4131
50.2.4.5	IMMEDIATE PACKET ASSIGNMENT messages .....	4132
50.2.4.5.1	IMMEDIATE PACKET ASSIGNMENT message (IPA Downlink Assignment) .....	4132
50.2.4.5.2	IMMEDIATE PACKET ASSIGNMENT message (IPA Uplink Assignment): .....	4133
50.2.4.5.3	IMMEDIATE PACKET ASSIGNMENT message (IPA Single Block Uplink Assignment): .....	4134
50.3	Default EGPRS Conditions, Message Contents and Macros for the Higher Layer Test Cases .....	4135
50.4	EGPRS Macros .....	4135
50.4.1	Overview .....	4135
50.4.2	EGPRS Default Message Contents .....	4135
50.4.3	EGPRS Macro Message Sequences .....	4135
50.4.3.1	Acknowledged downlink data .....	4135
50.4.3.2	Downlink data transfer .....	4135
50.4.3.3	Uplink data transfer .....	4136
50.4.3.4	Uplink dynamic allocation one phase access .....	4137
50.4.3.5	Uplink dynamic allocation one phase access with contention resolution .....	4137
50.4.3.6	Uplink dynamic allocation two phase access .....	4138
50.4.3.7	Void .....	4139
50.4.3.8	Void .....	4139
50.4.3.9	Void .....	4139
50.4.3.10	Downlink TBF establishment .....	4139
50.4.3.10A	Uplink data .....	4139
50.4.3.11	GPRS Attach using EGPRS messages on CCCH .....	4139
50.4.3.12	Void .....	4140
50.4.3.13	PDP Context Activation On CCCH .....	4140
50.4.3.14	Void .....	4143
50.4.3.15	PDP Context Activation, IPA capable MS .....	4143
50.5	Test PDP contexts .....	4143
51	EGPRS Paging, TBF establishment/release and DCCH related procedures .....	4145
51.1	RR / Paging .....	4145
51.1.1	Void .....	4145
51.1.2	Void .....	4145
51.1.3	Void .....	4145
51.1.4	Void .....	4145
51.1.5	RR / Paging / on CCCH for EGPRS service .....	4145
51.1.5.1	RR / Paging / on CCCH for EGPRS service / normal paging .....	4145
51.1.5.1.1	RR / Paging / on CCCH for EGPRS service / normal paging with P-TMSI successful .....	4145
51.1.5.1.2	RR / Paging / on CCCH for EGPRS service / normal paging with IMSI successful .....	4149
51.1.5.1.3	RR / Paging / on CCCH for EGPRS service / normal paging with P-TMSI ignored .....	4151
51.1.5.2	RR / Paging / on CCCH for EGPRS service / extended paging .....	4154
51.1.5.2.1	RR / Paging / on CCCH for EGPRS service / extended paging with P-TMSI successful .....	4154
51.1.5.3	RR / Paging / on CCCH for EGPRS service / paging reorganisation .....	4156
51.1.5.4	RR / Paging / on CCCH for EGPRS service / default message contents .....	4160
51.1.6	Void .....	4160
51.2	RR procedures on CCCH related to temporary block flow establishment .....	4160
51.2.1	Permission to access the network .....	4160
51.2.1.1	Permission to access the network / priority classes .....	4160
51.2.2	Initiation of the packet access procedure .....	4161
51.2.2.1	Initiation of the packet access procedure / establishment causes .....	4161
51.2.2.2	Random references for two phase packet access .....	4163
51.2.2.3	Random references for one phase packet access and for Access Type 'signalling' .....	4164
51.2.2.4	Initiation of the packet access procedure / timer T3146 .....	4166
51.2.2.5	Initiation of the packet access procedure / Request Reference .....	4168
51.2.2.6	Two phase packet access / establishment cause .....	4170
51.2.2.7	Initiation of the packet access procedure by IPA capable MS / IMMEDIATE PACKET ASSIGNMENT message configured initially and later not configured on MS own Paging sub- channel .....	4171

51.2.2.8	Initiation of the packet access procedure by IPA capable MS / IMMEDIATE PACKET ASSIGNMENT message not configured initially and later configured on MS own Paging sub-channel.....	4174
51.2.3	Packet immediate assignment / One phase packet access .....	4177
51.2.3.1	Two-message assignment / Successful case.....	4177
51.2.3.2	Two-message assignment / Failure cases .....	4178
51.2.3.3	Packet uplink assignment / Polling bit set .....	4181
51.2.3.4	One phase packet access / Contention resolution / Successful case .....	4182
51.2.3.5	One phase packet access / Contention resolution / TLLI mis match .....	4183
51.2.3.6	One phase packet access / Contention resolution / Counter N3104 .....	4185
51.2.3.7	One phase packet access / Contention resolution / Timer T3166 .....	4186
51.2.3.8	One phase packet access / Contention resolution / 4 access repetition attempts .....	4189
51.2.3.9	One phase packet access / TBF starting time .....	4190
51.2.3.10	One phase packet access / Timing Advance Index present .....	4193
51.2.3.11	One phase packet access / Timing Advance Index not present .....	4194
51.2.3.12	Packet Immediate Assignment by IPA Capable MS / One phase packet access / IPA uplink assignment.....	4195
51.2.3.13	Packet Immediate Assignment by IPA Capable MS / One phase packet access / IPA uplink assignment / Consecutive EGPRS Packet Channel Requests .....	4196
51.2.3.14	Packet Immediate Assignment by IPA Capable MS / One phase packet access / IPA uplink assignment / Radio_Access_Capability_bit set.....	4198
51.2.3.15	Packet Immediate Assignment by IPA Capable MS / One phase packet access / IPA uplink assignment / Multiple MS devices .....	4199
51.2.3.16	Packet Immediate Assignment by IPA Capable MS / One phase packet access / IPA uplink assignment / Multiple MS devices / Radio_Access_Capability_bit set .....	4201
51.2.3.17	Packet Immediate Assignment by IPA capable MS/ one phase packet access /IPA uplink assignment/ Multiple MS devices/ Identical Random Reference and FN Offset .....	4203
51.2.3.18	Packet Immediate Assignment by IPA capable MS/ single block packet access /IPA single block uplink assignment .....	4204
51.2.3.19	Packet Immediate Assignment by IPA capable MS/ single block packet access /IPA single block uplink assignment/Consecutive EGPRS Packet Channel Requests .....	4205
51.2.3.20	Packet Immediate Assignment by IPA capable MS/single block packet access/IPA single block uplink assignment/Multiple MS devices .....	4207
	IMMEDIATE PACKET ASSIGNMENT message Step 4: .....	4210
51.2.3.21	Packet Immediate Assignment by IPA capable MS/single block packet access /IPA single block uplink assignment/ Multiple MS devices/Identical Random Reference and FN Offset.....	4210
	IMMEDIATE PACKET ASSIGNMENT message Step 4: .....	4213
51.2.4	Packet immediate assignment / Multiblock packet access.....	4213
51.2.4.1	Multiblock packet access / Packet Resource Request .....	4213
51.2.4.2	Void.....	4214
51.2.5	Packet immediate assignment / Packet access rejection .....	4214
51.2.5.1	Packet access rejection / wait indication.....	4214
51.2.5.2	Packet access rejection / assignment before T3142 expires .....	4216
51.2.5.3	Packet access rejection / Interpretation of Extended RA i / Correct value of Extended RA i.....	4218
51.2.5.4	Packet access rejection / Interpretation of Extended RA i / Extended RA i not included .....	4220
51.2.6	Packet downlink assignment procedure using CCCH .....	4222
51.2.6.1	Initiation of packet downlink assignment procedure / MS listens to correct CCCH block .....	4222
51.2.6.2	Initiation of packet downlink assignment procedure / timer T3190 .....	4223
51.2.6.3	Initiation of packet downlink assignment procedure / TBF starting time .....	4225
51.2.6.4	Initiation of packet downlink assignment procedure / incorrect TFI .....	4227
51.2.6.5 to 51.2.6.8	FFS .....	4228
51.2.6.9	Initiation of both the packet uplink and downlink assignment procedure by IPA capable MS/Simultaneous IPA uplink and downlink assignment .....	4228
51.3	MAC/RLC Release .....	4231
51.3.1	TBF Release / Uplink / Normal/ MS initiated .....	4232
51.3.1.1	TBF Release / Uplink / Normal/ MS initiated / Acknowledged mode .....	4232
51.3.1.2	TBF Release / Uplink / Normal/ MS initiated / Unacknowledged mode .....	4236
51.3.1.3	TBF Release / Uplink / Normal/ MS initiated / Channel coding change during countdown .....	4238
51.3.2	TBF Release / Uplink / Normal/ Network initiated .....	4241
51.3.2.1	TBF Release / Uplink / Normal/ Network initiated / Acknowledged mode .....	4241
51.3.2.2	TBF Release / Uplink / Normal/ Network initiated / Unacknowledged mode .....	4242
51.3.3	TBF Release / Uplink / Network initiated / Abnormal release .....	4244

51.3.4	TBF Release / Downlink / Normal / Network initiated .....	4245
51.3.4.1	TBF Release / Downlink / Normal / Network initiated / Acknowledged mode .....	4245
51.3.4.2	TBF Release / Downlink / Normal / Network initiated / Unacknowledged mode .....	4248
51.3.5	PDCH Release .....	4251
51.3.5.1	Void .....	4251
51.3.5.2	PDCH Release / With TIMESLOTS_AVAILABLE .....	4251
51.3.6	TBF Release / Extended Uplink .....	4255
51.3.6.1	TBF Release / Extended Uplink / Recalculation of CV before CV = 0 .....	4255
51.3.6.2	TBF Release / Extended Uplink / Recalculation of CV after CV = 0 .....	4256
51.3.6.3	TBF Release / Extended Uplink / MCS change order while CV=0 .....	4258
51.3.6.4	TBF Release / Extended Uplink / TBF reconfigure by PACKET TIMESLOT RECONFIGURE ..	4261
51.3.6.5	TBF Release / Extended Uplink / TBF reconfigure by PACKET UPLINK ASSIGNMENT .....	4264
51.3.6.6	Extended Uplink TBF / Cell Change while in Extended Uplink/ No Packet Neighbouring Cell Data .....	4266
51.3.6.7	Extended Uplink TBF / Cell Change failure while in Extended Uplink/ No Packet Neighbouring Cell Data .....	4269
51.3.6.8	Extended Uplink TBF / Cell Change while in Extended Uplink/ With Packet Neighbouring Cell Data .....	4272
51.3.6.9	TBF Release / Extended Uplink / Change of RLC mode / Normal release .....	4276
51.3.6.10	TBF Release / Extended Uplink / Change of RLC mode / Abnormal release .....	4279
51.3.7	Void .....	4282
51.4	Void .....	4282
51.5	EGPRS Dual transfer mode .....	4282
51.5.1	PS establishment whilst in dedicated mode .....	4282
51.5.1.1	Uplink TBF establishment .....	4282
51.5.1.1.1	Uplink TBF establishment with no reallocation of CS resources .....	4282
	Uplink TBF establishment with no reallocation of CS resources / Successful case / Uplink resources assigned .....	4282
51.5.1.1.2	Uplink TBF establishment with no reallocation of CS resources / Successful case / Downlink resources assigned .....	4284
51.5.1.1.2	Uplink TBF establishment with reallocation of CS resources .....	4287
51.5.1.1.2.1	Uplink TBF establishment with reallocation of CS resources / Successful case .....	4287
51.5.1.2	Downlink TBF establishment .....	4288
51.5.1.2.1	Whilst in Ready State .....	4288
51.5.1.2.1.1	Downlink TBF establishment in Ready State / Successful case .....	4288
51.5.2	Void .....	4290
51.5.3	PS establishment whilst in dual transfer mode .....	4290
51.5.3.1	Uplink TBF establishment with a down link TBF established .....	4290
51.5.3.1.1	Uplink TBF establishment with a down link TBF established and no PS downlink reallocation .....	4290
51.5.3.2	Downlink TBF establishment with a uplink established .....	4292
51.5.3.2.1	Downlink TBF establishment with a uplink TBF established and no PS uplink reallocation .....	4292
51.6	Dynamic A RFNC mapping tests .....	4294
51.6.1	Void .....	4294
52	EGPRS Test of Medium Access Control (MAC) protocol .....	4295
52.1	Test of Medium Access Control (MAC) Procedures .....	4295
52.1.1	Void .....	4295
52.1.2	Packet Uplink/Downlink Assignment .....	4295
52.1.2.1	Packet uplink assignment procedure .....	4295
52.1.2.1.1	Void .....	4295
52.1.2.1.2	Void .....	4295
52.1.2.1.3	Void .....	4295
52.1.2.1.4	Void .....	4295
52.1.2.1.5	Void .....	4295
52.1.2.1.6	Void .....	4295
52.1.2.1.7	Void .....	4295
52.1.2.1.8	Void .....	4295
52.1.2.1.9	Packet Uplink Assignment / Two phase access .....	4295
52.1.2.1.9.1	Void .....	4295
52.1.2.1.9.2	Packet Uplink Assignment / Two phase access / Contention resolution .....	4295
52.1.2.1.9.2.1	Packet Uplink Assignment / Two phase access / Contention resolution / Expiry of timer T3168 .....	4295

52.1.2.1.9.2.2	Packet Uplink Assignment / Two phase access / Contention resolution / TLLI in Packet Resource Request message.....	4296
52.1.2.1.9.2.3	Packet Uplink Assignment / Two phase access / Contention resolution / TLLI mis match.....	4299
52.1.2.1.9.3	Packet Uplink Assignment / Two phase access / Radio Access Capabilities .....	4300
52.1.2.1.9.4	Packet Uplink Assignment / Two phase access / Radio Access Capabilities/ Frequency band not supported .....	4303
52.1.2.1.9.5	Packet Uplink Assignment / Two phase access / Packet Resource Request / No respond to Packet Downlink Assignment.....	4305
52.1.2.1.10	Packet Uplink Assignment / Abnormal cases.....	4306
52.1.2.1.10.1	Packet Uplink Assignment / Abnormal cases / Incorrect PDCH assignment .....	4306
52.1.2.1.10.2	Packet Uplink Assignment / Abnormal cases / Expiry of timer T3164 .....	4307
52.1.2.2	Packet Downlink Assignment.....	4308
52.1.2.2.1	Packet Downlink Assignment / Response to poll bit .....	4308
52.1.2.2.2	Void .....	4310
52.1.2.2.3	Void .....	4310
52.1.2.2.4	Packet Downlink Assignment / Response to Packet Polling.....	4310
52.1.2.2.5	Void.....	4312
52.1.2.2.6	Packet Downlink Assignment Timing Advance / TA value field not provided .....	4312
52.2	Void .....	4313
52.3	EGPRS Testcases for Dynamic Allocation in Packet Transfer Mode.....	4313
52.3.1	Dynamic Allocation / Uplink Transfer.....	4313
52.3.1.1	Dynamic Allocation / Uplink Transfer / Normal .....	4313
52.3.1.1.1	Dynamic Allocation / Uplink Transfer / Normal / Successful.....	4313
52.3.1.1.2	Void .....	4316
52.3.1.1.3	Dynamic Allocation / Uplink Transfer / Normal / Starting frame number encoding .....	4316
52.3.1.1.4	Dynamic Allocation / Uplink Transfer / Normal / Starting time .....	4317
52.3.1.1.5	Void.....	4321
52.3.1.1.6	Dynamic Allocation / Uplink Transfer / Normal / T3180 expiry .....	4321
52.3.1.1.7	Dynamic Allocation / Uplink Transfer / Normal / PACCH operation .....	4324
52.3.1.1.8	Dynamic Allocation / Uplink Transfer / Normal / Two uplink timeslots .....	4325
52.3.1.1.9	Void.....	4327
52.3.1.2	Dynamic Allocation / Uplink Transfer / Abnormal .....	4327
52.3.1.2.1	Void.....	4327
52.3.1.2.2	Void .....	4327
52.3.1.2.3	Void .....	4327
52.3.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment (concurrent).....	4327
52.3.2.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal .....	4327
52.3.2.1.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Successful.....	4327
52.3.2.1.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Normal / Multislot capabilities .....	4331
52.3.2.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal .....	4340
52.3.2.2.1	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / with random access.....	4340
52.3.2.2.2	Dynamic Allocation / Uplink Transfer with Downlink TBF establishment / Abnormal / Continuation of normal operation .....	4345
52.3.3	Dynamic Allocation / Resource reallocation .....	4346
52.3.3.1	Dynamic Allocation / Resource reallocation / Successful.....	4346
52.3.3.1.1	Dynamic Allocation / Resource reallocation / Successful / Higher throughput class or higher radio priority .....	4346
52.3.3.1.2	Dynamic Allocation / Resource reallocation / Successful / Lower throughput class .....	4349
52.3.3.1.3	Dynamic Allocation / Resource reallocation / Successful/ Different RLC mode and higher radio priority .....	4352
52.3.3.2	Dynamic Allocation / Resource reallocation / Abnormal .....	4354
52.3.3.2.1	Dynamic Allocation / Resource reallocation / Abnormal / T3168 expiry .....	4354
52.3.3.2.2	Dynamic Allocation / Resource reallocation / Abnormal / Invalid assignment .....	4357
52.3.3.3	Dynamic Allocation / Resource reallocation / Reject.....	4361
52.3.4	Default message contents.....	4363
52.4	Void .....	4364
52.5	EGPRS Downlink Transfer .....	4364
52.5.1	Void .....	4364

52.5.2	Void .....	4364
52.5.3	Void .....	4364
52.5.4	Void .....	4364
52.5.5	Downlink Transfer / Reestablishment .....	4364
52.5.5.1	Downlink Transfer/ Reestablishment/ T3192 Expiry .....	4364
52.5.5.2	Downlink Transfer/ Reestablishment/ Packet Downlink Assignment.....	4366
52.5.5.3	Void .....	4369
52.6	EGPRS Packet Access for signalling .....	4369
52.6.1	EGPRS Packet Access for signalling / EGPRS Packet Channel Request not supported / CCCH case ..	4369
52.6.2	EGPRS Packet Access for signalling / EGPRS Packet Channel Request supported / CCCH case .....	4371
52.6.3	Void .....	4374
52.6.4	Void .....	4374
52.6.5	EGPRS Packet Access for signalling / EGPRS Packet Channel Request supported / low access priority.....	4374
52.7	Void .....	4375
52.8	One phase access/ CONTENTION_RESOLUTION_TLLI .....	4375
52.8.1	One phase access/ CONTENTION_RESOLUTION_TLLI / Contention Resolution .....	4375
52.8.1.1	Void.....	4375
52.8.1.2	Void.....	4375
52.8.1.3	Void.....	4375
52.8.1.4	Void.....	4375
52.8.1.5	Void.....	4375
52.8.1.6	One phase access/ PBCCH not present/ CONTENTION_RESOLUTION_TLLI / Contention resolution / Inclusion of TLLI in RLC data blocks .....	4375
52.8.1.7	One phase access/ PBCCH not present / CONTENTION_RESOLUTION_TLLI / Contention resolution / Counter N3104 .....	4378
52.8.1.8	One phase access/ PBCCH not present / CONTENTION_RESOLUTION_TLLI / Contention resolution / Timer T3166 .....	4379
52.8.1.9	One phase access/ PBCCH not present / CONTENTION_RESOLUTION_TLLI / Contention resolution / TLLI mis match .....	4382
52.8.1.10	One phase access/ PBCCH not present / CONTENTION_RESOLUTION_TLLI / Contention resolution / 4 access repetition attempts .....	4383
52.8.1.11	Void .....	4385
52.8.1.12	One phase access/PBCCH absent/CONTENTION_RESOLUTION_TLLI/ Contention resolution / Successful Resource Reallocation .....	4385
52.9	Extended Dynamic Allocation in Packet Transfer Mode .....	4387
52.9.1	Default message contents.....	4387
52.9.2	Extended Dynamic Allocation / Uplink Transfer .....	4392
52.9.2.1	Extended Dynamic Allocation / Uplink Transfer / Normal .....	4392
52.9.2.1.1	Extended Dynamic Allocation / Uplink Transfer / Normal / Successful.....	4392
52.9.2.1.2	Extended Dynamic Allocation / Uplink Transfer / Normal / USF_GRANULARITY = 4 blocks .....	4395
52.9.2.1.4	Extended Dynamic Allocation / Uplink Transfer / Normal / PACCH operation in downlink .....	4398
52.9.2.1.5	Extended Dynamic Allocation / Uplink Transfer / Normal / Polling for EPDAN .....	4403
52.10	4405	
52.10.1	Verification of support of the IPA capability / EGPRS Packet Channel Request supported.....	4405
52.10.2	EGPRS Packet Access for one phase access by IPA capable MS / EGPRS Packet Channel Request supported / CCCH case .....	4406
52.10.3	EGPRS Packet Access for two phase access by IPA capable MS / EGPRS Packet Channel Request supported / CCCH case .....	4408
52.10.4	EGPRS Packet Access for signalling by IPA capable MS / EGPRS Packet Channel Request supported / CCCH case .....	4409
53	Test of EGPRS Radio Link Control (RLC) Protocol .....	4411
53.1	Acknowledged Mode.....	4411
53.1.1	Acknowledged Mode/ Uplink TBF .....	4411
53.1.1.1	Acknowledged Mode/ Uplink TBF/ Send State Variable V(S) .....	4411
53.1.1.2	Acknowledged Mode/ Uplink TBF/ Acknowledge State Variable V(A) .....	4412
53.1.1.3	Acknowledged Mode/ Uplink TBF/ Window Size/ Default Value .....	4415
53.1.1.4	Acknowledged Mode/ Uplink TBF/ Window Size/ Assigned Value .....	4417
53.1.1.5	Acknowledged mode/ Uplink TBF/ Invalid Negative Acknowledgement .....	4419
53.1.1.6	Acknowledged Mode/ Uplink TBF/ Countdown Value .....	4421

53.1.1.7	Acknowledged Mode/ Uplink TBF/ Interpretation of Receive Block Bitmap .....	4423
53.1.1.8	Acknowledged Mode/ Uplink TBF/ Pre-emptive Transmission/ Default Mode .....	4425
53.1.1.9	Acknowledged Mode/ Uplink TBF/ Pre-emptive Transmission Bit Set to '1' .....	4427
53.1.1.10	Acknowledged Mode/ Uplink TBF/ Pre-emptive Transmission Bit Set to '0'/ PENDING_ACK Blocks .....	4430
53.1.1.11	Acknowledged Mode/ Uplink TBF/ Pre-emptive Transmission Bit Set to '0'/ Negative Acknowledgement .....	4431
53.1.1.12	Acknowledged Mode/ Uplink TBF/ Retransmission/ Split RLC Data Block .....	4434
53.1.1.13	Acknowledged Mode/ Uplink TBF/ Calculation of BSN2 .....	4435
53.1.1.14	Acknowledged Mode/ Uplink TBF/ Verification of Coding Schemes .....	4437
53.1.1.15	Acknowledged Mode/ Uplink TBF/ Recalculation of CV on MCS change .....	4440
53.1.1.16	Acknowledged Mode/ Uplink TBF/ Retransmission/ Padding in the Data Field .....	4443
53.1.1.17	Acknowledged Mode/ Uplink TBF/ Retransmission/ Puncturing Scheme Cycle .....	4445
53.1.1.18	EGPRS Acknowledged mode / Uplink TBF / Link Adaptation Procedure for retransmission .....	4448
53.1.1.19	EGPRS Acknowledged mode / Uplink TBF / Link Adaptation Procedure for initial transmission .....	4454
53.1.1.20	Acknowledged Mode/ Uplink TBF/ Retransmission/ MCS Selection without Re-segmentation .....	4456
53.1.1.21	Acknowledged Mode/ Uplink TBF/ Initial Puncturing Scheme After MCS Switching .....	4462
53.1.1.22	Acknowledged Mode/ Uplink TBF/ Recalculation of CV on TBC change .....	4463
53.1.1.23	Acknowledged Mode/ Uplink TBF/ Interpretation of Compressed Bitmap .....	4466
53.1.1.24	Acknowledged Mode/ Uplink TBF/ Interpretation of PBSN .....	4467
53.1.1.25	Acknowledged Mode/ Uplink TBF/ TBF Reallocation/Window Size .....	4471
53.1.2	Acknowledged Mode/ Downlink TBF .....	4475
53.1.2.1	Acknowledged Mode/ Downlink TBF/ Receive State Variable V(R) .....	4475
53.1.2.2	Acknowledged Mode/ Downlink TBF/ Receive Window State Variable V(Q) .....	4476
53.1.2.3	Acknowledged Mode/ Downlink TBF/ Window Size/ Default Value .....	4478
53.1.2.4	Acknowledged Mode/ Downlink TBF/ Window Size/ Assigned Value .....	4482
53.1.2.5	Acknowledged Mode/ Downlink TBF/ BOW .....	4484
53.1.2.6	Acknowledged Mode/ Downlink TBF/ EOW .....	4485
53.1.2.7	Acknowledged Mode/ Downlink TBF/ Measurement Report .....	4487
53.1.2.8	Acknowledged Mode/ Downlink TBF/ Generation of Bitmap .....	4488
53.1.2.9	Acknowledged Mode/ Downlink TBF/ Interpretation of BSN2 .....	4489
53.1.2.10	Acknowledged Mode/ Downlink TBF/ Split RLC Data Block .....	4491
53.1.2.11	Acknowledged Mode/ Downlink TBF/ First Partial Bitmap and Next Partial Bitmap .....	4492
53.1.2.12	Acknowledged Mode/ Downlink TBF/ Decoding of Coding Schemes .....	4493
53.1.2.13	Void .....	4495
53.1.2.14	Acknowledged Mode/ Downlink TBF/ Received Bitmap/ Compressed .....	4495
53.1.2.15	Acknowledged Mode/ Downlink TBF/ Received Bitmap/ Uncompressed .....	4496
53.1.2.16	Acknowledged Mode/ Downlink TBF/ Received Block Bitmap/ Compressed Bitmap Starting Colour Code .....	4498
53.1.2.17	Acknowledged Mode/ Downlink TBF/ Received Block Bitmap/ Terminating Code and Make-up Code .....	4499
53.1.2.18	Acknowledged Mode/ Downlink TBF/ Retransmission/ Padding .....	4500
53.1.2.19	Acknowledged Mode/ Downlink TBF/ TBF Reallocation/Window Size .....	4502
53.2	Unacknowledged Mode .....	4504
53.2.1	Unacknowledged Mode/ Uplink TBF .....	4504
53.2.1.1	Unacknowledged Mode/ Uplink TBF/ Stall Indicator .....	4504
53.2.1.2	Unacknowledged Mode/ Uplink TBF/ RBB and SSN .....	4506
53.2.2	Unacknowledged Mode/ Downlink TBF .....	4507
53.2.2.1	Unacknowledged Mode/ Downlink TBF/ V(R) and V(Q) .....	4507
53.3	Default Message Contents and Macros .....	4508
53.3.1	Message Contents .....	4508
53.3.2	Macros .....	4509
53.3.2.1	Macro for uplink dynamic allocation two phase access .....	4509
53.3.2.2	Macro for downlink TBF establishment (PBCCH not present) .....	4509
53.3.2.3	Macro for downlink TBF establishment using ACCESS TYPE = "signalling" (PBCCH not present) .....	4510
54 to 56	Void .....	4511
57	EGPRS Dual Transfer Mode .....	4511
57.1	Reallocation of CS resources .....	4511
57.1.1	Void .....	4511

57.1.2	Void .....	4511
57.1.3	Intra frequency reallocation of CS resources / DTM Assignment Command .....	4511
57.1.4	Inter frequency reallocation of CS resources / DTM Assignment Command .....	4513
57.2	Release of CS resources .....	4515
57.2.1	Network originating CS release.....	4515
58	Void.....	4517
58a	Latency reductions .....	4517
58a.1	FANR Fast Ack/Nack reporting .....	4517
58a.1.1	Uplink TBF, SSN based PAN Format .....	4517
58a.1.2	Uplink TBF, SSN based PAN Format, with Concurrent Downlink TBF .....	4520
58a.1.3	Uplink TBF, Time based PAN Format.....	4524
58a.1.4	Uplink TBF, Time based PAN Format, with Concurrent Downlink TBF .....	4529
58a.1.5	Concurrent Uplink and Downlink TBFs, Discrimination of PAN Information from Different PDCH or PDCH Pairs .....	4532
58a.1.6	Concurrent Uplink and Downlink TBFs, Mobile Coding and Puncturing Schemes .....	4536
58a.1.7	Concurrent Uplink and Downlink TBFs, Choice of MCS for Uplink Data Block Re -Transmission with PAN Field Present.....	4541
58a.1.8	Uplink TBF, Handling of Erroneous PAN Fields,SSN Based Format .....	4545
58a.1.9	Uplink TBF, Handling of Erroneous PAN Fields,Time Based Format .....	4548
58a.1.10	Downlink TBF, with Concurrent Uplink TBF, Polled FANR .....	4552
58a.1.11	Downlink TBF, with Concurrent Uplink TBF, Event Based FANR, Out of Sequence Condition .....	4554
58a.1.12	Downlink TBF, with Concurrent Uplink TBF, Event Based FANR, Corrupted RLC Data Part with Event-based Fast Ack/Nack reporting .....	4557
58a.1.13	Downlink TBF, with Concurrent Uplink TBF, Event Based and Polled FANR Combined .....	4559
58a.1.14	Downlink TBF, with and without Concurrent Uplink TBF, CES/P Polling Response.....	4562
58a.1.15	Downlink TBF, with Concurrent Uplink TBF, Transmission of Other Messages in Response to Polling for PAN, PACKET CS REQUEST .....	4566
58a.1.16	Downlink TBF, with Concurrent Uplink TBF, Transmission of Other Messages in Response to Polling for PAN, PACKET CELL CHANGE NOTIFICATION .....	4569
58a.1.17	Downlink TBF, with and without Concurrent Uplink TBF, PAN Reaction Time, Polled PANR Polled Fast Ack/Nack reporting.....	4573
58a.1.18	Downlink TBF, with Concurrent Uplink TBF, PAN Reaction Time, Event Based FANR .....	4576
58a.1.19	Concurrent Uplink and Downlink TBFs, FANR/PAN, RLC Unacknowledged Mode .....	4579
58a.2	EGPRS test cases for RTTI Configuration .....	4582
58a.2.1	Uplink RTTI TBF/ Default PDCH pair configuration/ Dynamic Allocation / BTTI USF Mode .....	4582
58a.2.2	Uplink RTTI TBF/ default PDCH pair configuration/Dynamic Allocation/ RTTI USF Mode .....	4584
58a.2.3	Uplink RTTI TBF/default PDCH pair configuration/Extended Dynamic Allocation /BTTI USF .....	4589
58a.2.4	Uplink RTTI TBF/default PDCH pair configuration/Extended Dynamic Allocation /RTTI USF .....	4592
58a.2.5	Uplink RTTI TBF/Default PDCH pair configuration/Dynamic Allocation/USF Mode reconfiguration.....	4597
58a.2.6	Uplink RTTI TBF / One Phase Access Request by Reduced Latency MS / CCCH Case / Contention Resolution.....	4600
58a.2.7	Concurrent RTTI TBF / Channel Quality Reporting .....	4603
58a.2.8	Downlink RTTI TBF / default PDCH pair configuration/CCCH case .....	4606
58a.2.9	Concurrent RTTI TBFs / Explicit PDCH Pair Configuration .....	4607
58a.2.10	Concurrent RTTI TBF / Change in TTI configuration .....	4611
58a.2.11	Concurrent RTTI TBF / Downlink Dual Carrier configuration .....	4614
58a.2.12	Concurrent RTTI TBF / Dual Transfer Mode .....	4618
58b	Downlink Dual Carrier .....	4623
58b.1	Downlink Dual Carrier Reconfiguration .....	4623
58b.1.1	Single Carrier Uplink TBF with no Downlink TBF/ DLDC TBF established / No change in Uplink TBF .....	4623
58b.1.2	Single Carrier concurrent TBF to DLDC TBF/ Uplink DLDC TBF (on both carrier 1 and carrier 2)/ Reconfigured back to single Carrier Concurrent TBF .....	4626
58b.1.3	Single Carrier Concurrent TBF/Downlink TBF reconfigured to DLDC configuration / Uplink single carrier TBF reallocated to Carrier 2/Uplink modified to Dual Carrier .....	4643
58b.1.4	Single Carrier Uplink TBF with no Downlink TBF / DLDC TBF established / Uplink DLDC TBF (on both carrier 1 and carrier 2)/ Uplink TBF Reconfigured to Single Carrier TBF .....	4646
58b.1.5	Single Carrier Downlink TBF with No Uplink TBF/ Downlink reconfigured to DLDC TBF/ Uplink TBF established.....	4652

58b.2	Concurrent Downlink Dual Carrier TBF.....	4656
58b.2.1	Concurrent Downlink Dual Carrier TBF/ Reconfigure Frequency Parameters .....	4656
58b.2.2	Concurrent Downlink Dual Carrier TBF/ Change in Modulation and Coding Schemes .....	4665
58b.2.3	Concurrent Downlink Dual Carrier TBF/ Frequency Hopping.....	4670
58b.2.4	Concurrent Downlink Dual Carrier TBF/ Downlink Dual Carrier Configuration / Channel Quality Reporting .....	4686
58b.2.5	Concurrent Downlink Dual Carrier TBF / Downlink Dual Carrier Configuration in Dual Transfer Mode.....	4691
58b.2.6	Concurrent Downlink Dual Carrier TBF/ Extended Dynamic Allocation .....	4693
58b.2.7	Concurrent Downlink Dual Carrier TBF / Downlink Dual Carrier Configuration/ Extended RLC/MAC control message segmentation .....	4697
58b.2.8	Concurrent Downlink Dual Carrier TBF/ Dual Carrier Uplink TBF/ USF granularity 4 .....	4702
58b.3	DLDC Configuration / Abnormal Case .....	4705
58b.3.1	DLDC Configuration / Abnormal Case / DLDC Assignment Multislot Class Violations .....	4705
58b.3.2	DLDC Configuration / Abnormal Case/ Frequencies not within same band/ Access Retry.....	4710
58b.3.3	DLDC Configuration / Abnormal case/ DLDC Configuration Supported / UL Single Carrier TBF / Frequency violations.....	4714
58c	EGPRS2.....	4719
58c.1	Concurrent EGPRS2 TBF .....	4719
58c.1.1a	Concurrent EGPRS2A TBF using RTTI Latency reduction .....	4719
58c.2.1a	Acknowledged Mode/ Uplink TBF/ Countdown Value, in EGPRS2A .....	4721
58c.2.2a	Acknowledged Mode/ Uplink TBF/ Retransmission/ Split RLC Data Block, in EGPRS2-A.....	4723
58c.2	Uplink EGPRS2 TBF .....	4725
58c.2.1 to 58c.2.4	Void .....	4725
58c.2.4a	Acknowledged Mode/ Uplink TBF/ Verification of new coding schemes for EGPRS2A .....	4725
58c.2.5a	Acknowledged Mode/ Uplink TBF/ Recalculation of CV on MCS change for EGPRS2A .....	4729
58c.2.6	Void 4733	
58c.2.7	Void .....	4733
58c.2.7a	EGPRS Acknowledged mode / Uplink TBF / Retransmission/ UAS or MCS Selection with Re-segmentation, in EGPRS2A .....	4733
58c.2.8	Void .....	4739
58c.2.8a	Acknowledged Mode/ Uplink TBF/ Link Adaptation Procedure for Initial Transmission in EGPRS2A .....	4739
58c.2.9	Void .....	4741
58c.2.9a	Acknowledged Mode/ Uplink TBF/ Retransmission/ MCS or UAS Selection without Re-segmentation, in EGPRS2A .....	4741
58c.2.10	Void .....	4747
58c.2.10a	Acknowledged Mode/ Uplink TBF/ Initial Puncturing Scheme After MCS Switching, in EGPRS2A ..	4747
58c.3	Downlink EGPRS2 TBF .....	4750
58c.3.1	Void .....	4750
58c.3.2	Void .....	4750
58c.3.2a	Acknowledged Mode/ Downlink TBF/ Split RLC Data Block, in EGPRS2A .....	4750
58c.3.3a	Acknowledged Mode / Downlink TBF / Decoding of Coding Schemes, in EGPRS2-A.....	4751
58c.3.4a	Acknowledged Mode / Downlink TBF / Retransmission / Padding in EGPRS2-A .....	4753
58c.3.5a	Acknowledged Mode / Downlink TBF / First Partial Bitmap and Next Partial Bitmap in EGPRS2-A..	4754
58d	EFTA .....	4758
58d.1	Concurrent EFTA TBF .....	4758
58d.1.1	EFTA / Extended Dynamic Allocation/Concurrent TBF .....	4758
58d.1.2	EFTA / Acknowledge mode/ Concurrent TBF/ pre-emptive retransmission .....	4761
58d.1.3	EFTA / Concurrent TBF / PAN Polling .....	4763
58d.1.4	EFTA / Concurrent TBF / Polling .....	4765
58d.1.5	EFTA/Downlink TBF/8 TS .....	4767
58e	DTR.....	4770
58e.1	DTR with Uplink TBF / PACKET UPLINK ACK/NAK message with DTR information / Resumption to normal operation .....	4770
58e.2	DTR with Downlink TBF / RLC data block with DTR information / Resumption to normal operation .....	4772
58e.3	DTR with Concurrent TBF / RLC data block with DTR information / Resumption to normal operation .....	4773
59	Void .....	4776
60	Inter-system hard handover from GSM to UTRAN.....	4776

60.1	Inter system handover to UTRAN/From GSM/Speech/Success .....	4779
60.1a	Inter system handover to UTRAN/From GSM/Speech/Success with A5/3 and UEA2/UIA2 ciphering .....	4786
60.1b	Inter system handover to UTRAN/From GSM/Speech/Success with A5/4 and UEA2/UIA2 ciphering .....	4786
60.2a	Inter system handover to UTRAN/From GSM/Data/Same data rate/Success .....	4787
60.2b	Inter system handover to UTRAN/From GSM/Data/Same data rate/Extended Rates/Success .....	4796
60.3a	Inter system handover to UTRAN/From GSM/Data/Data rate upgrading/Success .....	4798
60.3b	Inter system handover to UTRAN/From GSM/Data/Data rate upgrading/Extended Rates/Success .....	4800
60.4	Inter system handover to UTRAN/From GSM/SDCCH/CC Establishment/Success .....	4802
60.5	Inter system handover to UTRAN/From GSM/Speech/Blind HO/Success .....	4807
60.6	Inter system handover to UTRAN/From GSM/Speech/Failure .....	4808
60.7	Inter system handover to UTRAN/From GSM/Failure/Cause: Frequency not implemented .....	4810
60.8	Inter system handover to UTRAN/From GSM/Failure/Cause: UTRAN configuration unknown .....	4812
60.9	Inter system handover to UTRAN/From GSM/Failure/Cause: Protocol Error .....	4815
60.10	Inter system handover to UTRAN/From GSM/Integrity Protection Activation .....	4816
61-69	Void .....	4820
70	Location Services .....	4821
70.1	Default conditions during LCS tests .....	4821
70.1.1	Default conditions during EOTD tests .....	4821
70.1.2	Default conditions during A-GPS signalling tests .....	4821
70.1.3	Default conditions during A-GNSS signalling tests .....	4821
70.2	EOTD Network Induced Location Request .....	4821
70.2.1	LCS Network Induced Emergency Call on an SDCCH / idle, no IMSI for Mobiles supporting MS-Assisted EOTD .....	4821
70.2.2	Void .....	4825
70.2.3	Network Induced Location Request Emergency Call on an SDCCH for MS-Assisted EOTD Mobiles .....	4825
70.2.4	Emergency Call NI-LR while Voice is Through Connected for Mobiles supporting MS-Assisted EOTD .....	4828
70.3	Mobile Originating Location Request .....	4831
70.3.1	MO_LR Basic Self Location Request .....	4831
70.3.1.1	MO_LR Basic Self Location Request In Idle Mode (Normal Case) .....	4831
70.3.1.2	MO_LR Basic Self Location Request In Dedicated Mode (Normal case) .....	4834
70.3.2	MO_LR Transfer to 3 <sup>rd</sup> Party .....	4836
70.3.3	MO_LR Autonomous Location .....	4839
70.3.4	MO_LR Positioning Measurement .....	4841
70.3.4.1	MO_LR Positioning Measurement / Protocol Error .....	4841
70.3.4.2	MO_LR Positioning Measurement / Location Error .....	4844
70.3.4.3	MO_LR Positioning Measurement / Multiple RRLP REQUEST with same Reference Number .....	4847
70.3.4.4	MO_LR Positioning Measurement / Multiple RRLP REQUEST with different Reference Number .....	4849
70.3.4.5	MO_LR Positioning Measurement / RR Management Commands .....	4852
70.4	Mobile Terminated Location Request for Mobiles supporting MS-Assisted EOTD .....	4855
70.4.1	MT-LR Location Notification for MS-Assisted EOTD .....	4855
70.4.2	MT-LR Privacy Options for Mobiles supporting MS-Assisted EOTD .....	4857
70.4.2.1	MT-LR Privacy Options/ Verification – Location Allowed If No Response for mobiles supporting MS-Assisted EOTD .....	4858
70.4.2.2	MT-LR Privacy Options/ Verification – Location Not Allowed If No Response for Mobiles supporting MS-Assisted EOTD .....	4861
70.5	Void .....	4865
70.6	E-OTD Timing Measurement Accuracy .....	4865
70.6.1	E-OTD Accuracy, Sensitivity Performance Tests using GMSK Signals .....	4865
70.6.2	E-OTD Accuracy, Interference Performance Tests .....	4867
70.6.3	E-OTD Accuracy, Multipath Performance Test using GMSK Modulated Signals .....	4869
70.6.4	E-OTD Accuracy, Interference Performance Tests, 8PSK BCCH .....	4872
70.6.5	E-OTD Accuracy, Multipath Performance Test, 8PSK BCCH .....	4874
70.6.6	E-OTD Accuracy, Sensitivity Performance Tests for 8PSK Modulated signals .....	4877
70.7	Assisted GPS Network Induced Tests .....	4879
70.7.1	Void .....	4879
70.7.2	Void .....	4879
70.7.3	Void .....	4879
70.7.4	Network Induced Location Request Emergency Call on TCH Radio Channel .....	4879

70.7.4.1	Network Induced Location Request Emergency Call on TCH Radio Channel for Mobiles Supporting MS-Based GPS.....	4879
70.7.4.2	Network Induced Location Request Emergency Call on TCH Radio Channel for mobiles supporting MS-Assisted GPS .....	4884
70.7.4.3	Network Induced Location Request Emergency Call on TCH Radio Channel, no IMSI for Mobiles Supporting MS-Based GPS .....	4890
70.7.4.4	Network Induced Location Request Emergency Call on TCH Radio Channel, no IMSI for mobiles supporting MS-Assisted GPS .....	4895
70.8	Assisted GPS Mobile Originated Tests .....	4901
70.8.1	Basic Self Location .....	4901
70.8.2	Basic Self Location in Dedicated Mode.....	4907
70.8.3	Transfer to 3 <sup>rd</sup> Party .....	4912
70.8.4	MO-LR Positioning Measurement .....	4918
70.8.4.1	MO-LR Positioning Measurement / Protocol Error.....	4918
70.8.4.2	MO-LR Positioning Measurement / Location Error .....	4924
70.8.4.2.1	Location Error: Requested Method not Supported .....	4924
70.8.4.2.2	Location Error: GPS Assistance Data Missing.....	4930
70.8.4.3	MO-LR Positioning Measurement / Multiple RRLP Requests with Same Reference Number .....	4935
70.8.4.4	MO-LR Positioning Measurement / Multiple RRLP Requests with Different Reference Number ..	4940
70.8.4.5	MO-LR Positioning Measurement / RR Management Commands.....	4949
70.8.5	MO_LR Basic Self Location Request for MS-Based A-GPS .....	4957
70.8.5.1	MO_LR Basic Self Location Request in Idle Mode (Normal Case) .....	4957
70.8.5.2	MO_LR Basic Self Location Request in Dedicated Mode (Normal case) .....	4960
70.8.5.3	MO_LR Basic Self Location Request in Idle Mode (Alternative Case) .....	4963
70.8.5.4	MO_LR Basic Self Location Request in Dedicated Mode (Alternative Case).....	4970
70.8.6	MO-LR Transfer to 3 <sup>rd</sup> Party for MS-Based A-GPS .....	4976
70.9	Assisted GPS Mobile Terminated Tests .....	4982
70.9.1	MT-LR Location Notification.....	4982
70.9.1.1	MT-LR Location Notification for Mobiles Supporting MS-Based GPS .....	4982
70.9.1.2	MT-LR Location Notification for Mobiles Supporting MS-Assisted GPS .....	4984
70.9.2	MT-LR Privacy Options/Verification – Location Allowed If No Response .....	4987
70.9.2.1	MT-LR Privacy Options/Verification– Location Allowed If No Response for mobiles supporting MS-Based GPS .....	4987
70.9.2.2	MT-LR Privacy Options/Verification– Location Allowed If No Response for Mobiles Supporting MS-Assisted GPS .....	4991
70.9.3	MT-LR Privacy Options/Verification – Location Not Allowed If No Response .....	4995
70.9.3.1	MT-LR Privacy Options/Verification– Location Not Allowed If No Response for Mobiles Supporting MS-Based GPS.....	4995
70.9.3.2	MT-LR Privacy Options/Verification– Location Not Allowed If No Response for mobiles supporting MS-Assisted GPS .....	4999
70.9.4	MT-LR / RRLP Error Handling for MS-Based A-GPS .....	5003
70.9.4.1	RRLP Protocol Error .....	5003
70.9.4.2	RRLP Location Error – Requested Method Not Supported.....	5008
70.9.4.3	RRLP Location Error – GPS Assistance Data Missing .....	5013
70.9.4.4	Multiple RRLP Requests with same Reference Number .....	5017
70.9.4.5	Multiple RRLP Requests with different Reference Number.....	5023
70.9.4.6	RR Management Commands .....	5030
70.10	Conventional GPS Network Induced Tests.....	5038
70.10.1	Void .....	5038
70.10.2	Network Induced Location Request Emergency Call on TCH Radio Channel.....	5038
70.10.2.1	Network Induced Location Request Emergency Call on TCH Radio Channel for Mobiles Supporting Conventional GPS .....	5038
70.11	A-GPS Minimum Performance tests.....	5041
70.11.1	Abbreviations.....	5041
70.11.2	GPS test conditions .....	5042
70.11.3	GSM test conditions .....	5042
70.11.4	A-GPS test conditions .....	5042
70.11.5	Sensitivity .....	5045
70.11.5.1	Sensitivity Coarse Time Assistance.....	5045
70.11.5.2	Sensitivity Fine Time Assistance.....	5047
70.11.6	No nominal Accuracy .....	5050
70.11.7	Dynamic Range .....	5052

70.11.8	Multi-Path scenario.....	5054
70.12	Assisted GNSS General Procedures .....	5056
70.12.1	Positioning Capability Transfer procedure .....	5056
70.13	Assisted GNSS Network Induced Location Request (NI-LR) .....	5059
70.13.1	NI-LR / Emergency Call on TCH Radio Channel for Mobiles Supporting MS-Based GNSS .....	5059
70.13.2	NI-LR / Emergency Call on TCH Radio Channel for Mobiles Supporting MS-Assisted GNSS .....	5067
70.14	Assisted GNSS Mobile Originated Location Request (MO-LR).....	5074
70.14.1	MO-LR / Idle mode for Mobiles Supporting MS-Assisted GNSS .....	5074
70.14.2	MO-LR / Idle mode for Mobiles Supporting MS-Based GNSS / Assistance Data Request.....	5081
70.14.3	MO-LR / Idle mode for Mobiles Supporting MS-Based GNSS / Location Estimate Request.....	5085
70.14.4	MO-LR / Dedicated Mode for Mobiles Supporting MS-Assisted GNSS .....	5092
70.14.5	MO-LR / Dedicated Mode for Mobiles Supporting MS-Based GNSS / Assistance Data Request.....	5099
70.14.6	MO-LR / Dedicated Mode for Mobiles Supporting MS-Based GNSS / Location Estimate request.....	5104
70.14.7	5110	
70.14.8	MO-LR / Location Error .....	5110
70.14.8.1	MO-LR / Location Error / Requested Method not supported .....	5110
70.14.8.2	MO-LR / Location Error / GNSS Assistance Data Missing.....	5118
70.14.9	MO-LR / Multiple RRLP Requests with Same Reference Number and Extended Reference Number ..	5125
70.14.10	MO-LR / Multiple RRLP Requests with Different Reference Number .....	5133
70.14.11	MO-LR / Multiple RRLP Requests with Different Extended Reference Number .....	5143
70.14.12	MO-LR / RR Management Commands.....	5154
70.15	Assisted GNSS Mobile Terminated Location Request (MT-LR) .....	5165
70.15.1	MT-LR / Location Notification .....	5165
70.15.2	MT-LR / Notification and Verification / Location Allowed If No Response.....	5168
70.15.3	MT-LR / Notification and Verification / Location Not Allowed If No Response.....	5172
70.15.4	Void .....	5176
70.15.5	MT-LR / Location Error .....	5176
70.15.5.1	MT-LR / Location Error / Requested Method not Supported.....	5176
70.15.5.2	Location Error: GNSS Assistance Data Missing.....	5183
70.15.6	MT-LR / Multiple RRLP Requests with Same Reference Number and Extended Reference Number ..	5187
70.15.7	MT-LR / Multiple RRLP Requests with Different Reference Number .....	5195
70.15.8	MT-LR / Multiple RRLP Requests with Different Extended Reference Number .....	5205
70.15.9	MT-LR / RR Management Commands .....	5214
70.16	A-GNSS Minimum Performance tests.....	5223
70.16.1	Abbreviations.....	5224
70.16.2	GNSS test conditions.....	5224
70.16.3	GSM and other test conditions.....	5226
70.16.4	A-GNSS test conditions .....	5226
70.16.5	Sensitivity .....	5229
70.16.5.1	Sensitivity Coarse Time Assistance.....	5229
70.16.5.2	Sensitivity Fine Time Assistance.....	5233
70.16.6	No nominal Accuracy .....	5235
70.16.7	Dynamic Range .....	5238
70.16.8	Multi-Path scenario.....	5242
80	Generic Access default conditions, message contents and macros.....	5246
80.1	Default test conditions .....	5246
80.1.1	Unlicensed Radio Access.....	5246
80.1.1.1	IEEE 802.11 .....	5246
80.1.1.2	Bluetooth.....	5246
80.1.2	Protocol Settings .....	5246
80.1.2.1	Dynamic Host Configuration Protocol - DHCP .....	5246
80.1.2.2	Domain Name System – DNS .....	5246
80.1.2.2.1	Public DNS Server.....	5246
80.1.2.2.2	DNS associated with GANC .....	5247
80.1.2.3	Secure Gateway (SEGW) .....	5247
80.1.2.4	Generic Access Network Controller (GANC) .....	5247
80.1.2.5	Secure Internet Protocol - IPsec .....	5247
80.2	Default message contents .....	5247
80.3	Macros .....	5247
80.3.1	Overview .....	5247
80.3.1.1	Definition .....	5247

80.3.1.2	Syntax .....	5248
80.3.1.2.1	Message contents .....	5248
80.3.1.2.2	Message sequence.....	5248
80.3.2	Default message contents.....	5249
80.3.3	Macro message sequences.....	5249
80.3.3.1	Location Update Procedure .....	5249
80.3.3.1.1	GAN A/Gb Mode Location Update Procedure.....	5249
80.3.3.1.2	GAN Iu Mode Location Update Procedure .....	5249
80.4	Test PDP contexts .....	5250
81	GAN Discovery and Registration Procedures.....	5250
81.1	Discovery Procedure .....	5250
81.1.1	Discovery Procedure, Accepted.....	5250
81.1.1.1	Discovery Procedure, MS holds the IP address of the provisioning SEGW and FQDN of provisioning GANC, provisioning GANC and default GANC belong to the same SEGW .....	5250
81.1.1.2	Discovery procedure, the MS holds the FQDN of the provisioning SEGW and IP address of the provisioning GANC, provisioning GANC and default GANC belong to different SEGWs .....	5252
81.1.1.3	Discovery procedure, the MS is not provisioned with information about the provisioning GANC or its SEGW .....	5254
81.1.2	Discovery Procedure, Rejected .....	5256
81.1.2.1	Discovery Procedure, Discovery Reject, Network Congestion .....	5256
81.1.2.2	Discovery Procedure, Discovery Reject, IMSI not allowed .....	5257
81.1.2.3	Void .....	5259
81.1.3	Discovery Procedure, Abnormal Cases .....	5259
81.1.3.1	Discovery Procedure, TU3901/TU3903 Expires .....	5259
81.1.3.2	Void .....	5261
81.1.3.3	Void .....	5261
81.1.3.4	Void .....	5261
81.1.3.5	Void .....	5261
81.1.3.6	Void .....	5261
81.1.3.7	SEGW certificate checking, the MS holds the “invalid” FQDN of the provisioning SEGW .....	5261
81.2	Registration Procedure .....	5263
81.2.1	Registration Procedure, Accepted .....	5263
81.2.1.1	Registration Procedure, MS in GSM Coverage, Serving GANC for CGI Known .....	5263
81.2.1.2	Registration Procedure, MS in GSM Coverage, Serving GANC for CGI Not Known; MS not in GSM Coverage, Serving GANC for AP Known .....	5264
81.2.1.3	Void .....	5266
81.2.1.4	Registration Procedure, MS Holds The IP Address to The serving SEGW And The FQDN to The Serving GANC .....	5266
81.2.1.5	Registration Procedure, MS Holds The FQDN to The serving SEGW And The IP Address to The Serving GANC .....	5267
81.2.1.6	Registration Procedure, MS is capable of GAN A/Gb mode and GAN Iu mode, directed to operate in GAN A/Gb mode .....	5269
81.2.1.7	Registration Procedure, MS is capable of GAN A/Gb mode and GAN Iu mode, directed to operate in GAN Iu mode .....	5270
81.2.1.8	Registration Procedure, MS is capable of GAN A/Gb mode and GAN Iu mode, no GAN Mode Indicator IE in GA -RC REGISTER ACCEPT .....	5271
81.2.1.9	Registration Procedure, MS is capable of GAN Iu mode only, no GAN Mode Indicator IE in GA -RC REGISTER ACCEPT .....	5273
81.2.1.10	Registration Procedure, MS is capable of GAN Iu mode only, GAN Mode Indicator IE in GA - RC REGISTER ACCEPT indicates that MS shall use GAN A/Gb mode .....	5274
81.2.1.11	Registration Procedure, MS is capable of GAN Iu mode (only) is directed to operate in GAN Iu mode .....	5276
81.2.2	Registration Procedure, Redirected.....	5277
81.2.2.1	Registration Procedure, Redirected, Not Possible to Reuse Secure Connection .....	5277
81.2.2.2	Registration Procedure, Redirected, Current And Received GANC Belongs to The Same SEGW, IP Address Matches .....	5278
81.2.2.3	Registration Procedure, Redirected, Current And Received GANC Belongs to The Same SEGW, FQDN Matches .....	5280
81.2.3	Registration Procedure, Rejected .....	5281
81.2.3.1	Registration Procedure, Registration rejected, Network congestion .....	5281
81.2.3.2	Registration Procedure, Registration rejected, AP not allowed .....	5282

81.2.3.3	Registration Procedure, Registration rejected, Location not allowed .....	5284
81.2.3.4	Registration Procedure, Registration rejected, IMSI not allowed .....	5286
81.2.3.5	Void.....	5288
81.2.3.6	Registration Procedure, Registration rejected, invalid GANC .....	5288
81.2.3.7	Registration Procedure, Registration rejected, Geo location not known.....	5290
81.2.4	Registration Procedure, Abnormal Cases .....	5292
81.2.4.1	Registration Procedure, TU3904/TU3905 expiry, Serving GANC .....	5292
81.2.4.2	Registration Procedure, Registration Rejected, Network Congestion, Persistent Fault .....	5293
81.2.4.3	Void.....	5295
81.2.4.4	Void.....	5295
81.2.4.5	Void.....	5295
81.2.4.6	Void.....	5295
81.2.4.7	Void.....	5295
81.2.5	Registration Procedure, Register Update .....	5295
81.2.5.1	Registration Procedure, Register Update, Rejected .....	5295
81.2.5.2	Registration Procedure, Register Update, Redirection .....	5297
81.2.6	Registration Procedure, Deregister .....	5298
81.2.6.1	Registration Procedure, Deregister, Network Congestion, MS in State GA-CSR DEDICATED .....	5298
81.2.6.2	Registration Procedure, Deregister, AP Not Allowed, MS in State GA-RC REGISTERED .....	5299
81.2.6.3	Registration Procedure, Deregister, Location Not Allowed, MS in State GA-CSR IDLE .....	5300
81.2.6.4	Registration Procedure, Deregister, IMSI Not Allowed .....	5302
81.2.6.5	Registration Procedure, Deregister, Unspecified .....	5303
81.2.6.6	Registration Procedure, Deregister, Unspecified, Persistent Fault, Default GANC .....	5305
81.2.6.7	Registration Procedure, Deregister, Invalid GANC, Serving GANC .....	5307
81.2.6.8	Registration Procedure, Deregister, Geo Location Not Known .....	5308
81.2.6.9	Registration Procedure, Deregister, MS Initiated .....	5310
81.2.6.10	Registration Procedure, Deregister, Network Congestion, MS in State GA-RRC CONNECTED .....	5311
81.3	Lower Layer Faults .....	5312
81.3.1	TCP Reset.....	5312
81.3.1.1	TCP Reset, Successful Re-establishment, MS in State GA-CSR DEDICATED .....	5312
81.3.1.2	TCP Reset, Unsuccessful Re-establishment, MS in State GA-CSR IDLE.....	5313
81.3.1.3	TCP Reset, Successful Re-establishment, MS in State GA-RRC-CONNECTED (CS domain) .....	5314
81.3.1.4	TCP Reset, Successful Re-establishment, MS in State GA-RRC-CONNECTED (PS domain) .....	5315
81.3.1.5	TCP Reset, Unsuccessful Re-establishment, MS in State GA-RRC-IDLE (CS and PS domains)....	5316
81.3.2	Lower Layer Faults, MS is Registered .....	5317
81.3.2.1	IPSec Tunnel Failure, MS in State GA-CSR IDLE .....	5317
81.3.2.2	TCP Failure, MS in State GA-CSR DEDICATED .....	5319
81.3.2.3	IPSec Tunnel Failure, MS in State GA-RRC-IDLE (CS and PS domains) .....	5320
81.3.2.4	TCP Failure, MS in State GA-RRC-CONNECTED (CS domain) .....	5321
81.3.2.5	TCP Failure, MS in State GA-RRC-CONNECTED (PS domain) .....	5322
82	GAN CS Domain Procedures.....	5324
82.1	GA -CSR connection establishment.....	5324
82.1.1	GA-CSR connection establishment / successful case.....	5324
82.1.1.1	GA-CSR connection establishment, Upper Layer Message Transmission and GA-CRS connection release by GANC .....	5324
82.1.2	GA -CSR connection establishment / negative cases .....	5325
82.1.2.1	GA-CSR REQUEST rejected .....	5325
82.1.2.2	MS receives GA-CSR REQUEST ACCEPT message after TU3908 expiry .....	5327
82.2	Upper layer message transmission .....	5329
82.2.1	Upper layer message transmission / successful cases .....	5329
82.2.1.1	Void .....	5329
82.2.2	Upper layer message transmission / negative cases .....	5329
82.2.2.1	MS receives GA-CSR DOWNLINK DIRECT TRANSFER message when not in GA-CSR-DEDICATED state .....	5329
82.3	Paging for CS domain .....	5330
82.3.1	Paging for CS domain / successful case .....	5330
82.3.1.1	Paging for CS domain .....	5330
82.3.2	Paging for CS domain / negative cases .....	5331
82.3.2.1	Void .....	5331
82.3.2.2	MS receives GA-CSR PAGING REQUEST when TU3908 is active .....	5331
82.3.2.3	MS receives GA-CSR PAGING REQUEST when in GA -CSR DEDICATED state .....	5333

82.3.2.4	MS receives GA-CSR PAGING REQUEST when in GA -RC REGISTERED state .....	5334
82.4	Traffic Channel assignment .....	5335
82.4.1	Traffic Channel assignment / successful cases .....	5335
82.4.1.1	Traffic Channel assignment .....	5335
82.4.1.1	Traffic Channel assignment and Release .....	5335
82.4.2	Traffic Channel assignment / negative cases.....	5337
82.4.2.1	MS fails to establish the traffic channel.....	5337
82.5	Release of GA-CSR .....	5338
82.5.1	Release of GA-CSR.....	5338
82.5.1.1	Void.....	5338
82.5.1.2	Void.....	5338
82.6	Classmark Indication .....	5338
82.6.1	Classmark Indication Procedure .....	5338
82.6.1.1	Classmark Indication, Initiation of Classmark Interrogation by MS .....	5338
82.7	Handover to GAN .....	5339
82.7.1	Handover to GAN / successful cases .....	5339
82.7.1.1	Handover from GERAN to GAN.....	5339
82.7.1.2	Handover from GERAN to GAN signalling case.....	5341
82.7.1.3	Handover from UTRAN to GAN.....	5342
82.7.2	Handover to GAN / negative cases.....	5345
82.7.2.1	Void.....	5345
82.7.2.2	TU3920 expires during handover procedure.....	5345
82.8	Handover from GAN .....	5347
82.8.1	Handover from GAN / successful cases.....	5347
82.8.1.1	Handover from GAN to GERAN.....	5347
82.8.1.2	Handover from GAN to UTRAN.....	5349
82.8.2	Handover from GAN / negative cases .....	5351
82.8.2.1	Connection establishment fails on GERAN cell .....	5351
82.8.2.2	Handover command with non-supported configuration.....	5353
82.9	Ciphering Configuration Procedure .....	5354
82.9.1	Ciphering Configuration Procedure, Normal cases .....	5354
82.9.1.1	Ciphering Configuration Procedure.....	5354
82.9.1.2	Void .....	5356
82.9.2	Ciphering Configuration Procedure, Abnormal cases .....	5356
82.9.2.1	Ciphering Configuration Procedure, Invalid Ciphering Mode Command .....	5356
82.10	Channel mode modify procedure.....	5357
82.10.1	Channel mode modify procedure / successful cases .....	5357
82.10.1.1	Channel mode modify / successful case .....	5357
82.10.2	Channel mode modify procedure / negative cases .....	5358
82.10.2.1	Channel mode modify indicates non-supported mode .....	5358
83	GAN PS Domain Procedures .....	5359
83.1	GA -PSR Transport Channel Activation & Deactivation Procedures .....	5359
83.1.1	GA-PSR Transport Channel Activation & Deactivation Procedures , Normal Cases .....	5359
83.1.1.1	MS Initiated GA-PSR TC Activation.....	5359
83.1.2	GA-PSR Transport Channel Activation & Deactivation Procedures, Abnormal Cases .....	5361
83.1.2.1	GA -PSR TC Activation Collision .....	5361
83.1.2.2	GANC Rejects GA-PSR TC Activation .....	5362
83.1.3	Network Initiated GA -PSR Transport Channel Activation, Normal Case .....	5363
83.1.3.1	Processing of the GA-PSR TC Activation Request by the MS .....	5363
83.1.4	Network Initiated GA -PSR Transport Channel Activation, Abnormal Cases .....	5365
83.1.4.1	Void .....	5365
83.1.4.2	MS Rejects GA-PSR TC Activation when the GPRS Service is suspended.....	5365
83.1.4.3	MS Receives GA-PSR TC Activation Request while GA -PSR TC active.....	5366
83.1.5	MS Initiated Deactivation of GA-PSR Transport Channel, Normal Case .....	5368
83.1.5.1	GA-PSR TC Deactivation Initiation by the MS .....	5368
83.1.6	MS Initiated Deactivation of GA-PSR Transport Channel, Abnormal Cases .....	5369
83.1.6.1	Uplink User Data Transfer is initiated while GA -PSR TC Deactivation is in Progress.....	5369
83.1.6.2	Downlink User Data Transfer is received while the GA-PSR TC Deactivation is in Progress .....	5371
83.1.6.3	Unexpected GA-PSR-DEACTIVATE-UTC-ACK response.....	5372
83.1.6.4	Unexpected GA-PSR-ACTIVATE-UTC-REQ .....	5373
83.1.7	GANC Initiated Deactivation of GA -PSR Transport Channel, Normal Case .....	5374

83.1.7.1	GA-PSR TC Deactivation Initiation by the GANC .....	5374
83.1.8	Void .....	5376
83.2	GA-PSR GPRS User Data Transport .....	5376
83.2.1	GA-PSR GPRS User Data Transport , Normal Cases .....	5376
83.2.1.1	MS Initiates Uplink GPRS User Data Transfer .....	5376
83.2.2	GA-PSR GPRS User Data Transport , Abnormal Cases .....	5377
83.2.2.1	Void .....	5377
83.2.2.2	Void .....	5377
83.2.2.3	MS Receives a Downlink Message to Initiate Uplink GPRS User Data Transfer while the GA-PSR TC activation Procedure is in progress .....	5377
83.3	Packet paging for packet service .....	5378
83.3.1	PS Paging Request Processed by the MS, Normal Case .....	5378
83.3.1.1	PS Paging Request Processed by the MS .....	5378
83.4	GPRS Suspend Procedure .....	5379
83.4.1	GPRS Suspension Initiation by the MS, normal Case .....	5379
83.4.1.1	GPRS Suspension Initiation by the MS .....	5379
83.5	Downlink Flow Control .....	5381
83.5.1	Initiation of the Downlink Flow Control and Processing of the TU4003 Timer Expiry by the MS, Normal Case .....	5381
83.5.1.1	Initiation of the Downlink Flow Control and Processing of the TU4003 Timer Expiry by the MS .....	5381
83.6	Uplink Flow Control .....	5382
83.6.1	Processing of the Uplink Flow Control Request by the MS, Normal Case .....	5382
83.6.1.1	Processing of the Uplink Flow Control Request by the MS .....	5382
83.6.2	Processing of the Uplink Flow Control Request by the MS, Abnormal Cases .....	5383
83.6.2.1	GA-PSR TC in not Active .....	5383
84	GAN Iu Mode Procedures .....	5385
84.1	Macros for GAN Iu mode .....	5385
84.2	GA-RRC connection establishment .....	5385
84.2.1	GA-RRC connection establishment / successful case .....	5385
84.2.1.1	GA-RRC connection establishment, Upper Layer Message Transmission and GA-RRC connection release by GANC (CS domain) .....	5385
84.2.1.2	GA-RRC connection establishment, Upper Layer Message Transmission and GA-RRC connection release by GANC (PS domain) .....	5387
84.2.2	GA-RRC connection establishment / negative cases .....	5389
84.2.2.1	GA-RRC REQUEST rejected (CS domain) .....	5389
84.2.2.2	MS receives GA-RRC REQUEST ACCEPT message after TU5908 expiry (CS domain) .....	5391
84.2.2.3	GA-RRC REQUEST rejected (PS domain) .....	5393
84.2.2.4	MS receives GA-RRC REQUEST ACCEPT message after TU5908 expiry (PS domain) .....	5395
84.3	Upper layer message transmission .....	5397
84.3.1	Upper layer message transmission / successful cases .....	5397
84.3.1.1	Void .....	5397
84.3.2	Upper layer message transmission / negative cases .....	5397
84.3.2.1	MS receives GA-RRC DOWLINK DIRECT TRANSFER message when not in GA-RRC-CONNECTED state (CS domain) .....	5397
84.3.2.2	MS receives GA-RRC DOWLINK DIRECT TRANSFER message when not in GA-RRC-CONNECTED state (PS domain) .....	5398
84.4	Paging .....	5399
84.4.1	Paging for CS domain / successful cases .....	5399
84.4.1.1	Paging for CS domain .....	5399
84.4.2	Paging for CS domain / negative cases .....	5401
84.4.2.1	Void .....	5401
84.4.2.2	Paging for CS domain / negative cases / MS receives GA-RRC PAGING REQUEST when TU5908 is active .....	5401
84.4.2.3	Paging for CS domain / negative cases / MS receives GA-RRC PAGING REQUEST when in GA-RRC-CONNECTED state .....	5403
84.4.2.4	Paging for CS domain / negative cases / MS receives GA-RRC PAGING REQUEST when in GA-RRC REGISTERED state .....	5404
84.4.3	Paging for PS domain / successful cases .....	5406
84.4.3.1	Paging for PS domain .....	5406
84.4.4	Paging for PS domain / negative cases .....	5407
84.4.4.1	Void .....	5407

84.4.4.2	Paging for PS domain / negative cases / MS receives GA-RRC PAGING REQUEST when TU5908 is active .....	5407
84.4.4.3	Paging for PS domain / negative cases / MS receives GA-RRC PAGING REQUEST when in GA-RRC-CONNECTED state .....	5409
84.4.4.4	Paging for PS domain / negative cases / MS receives GA-RRC PAGING REQUEST when in GA-RC REGISTERED state .....	5410
84.5	Traffic Channel assignment .....	5412
84.5.1	CS Traffic Channel assignment / successful cases .....	5412
84.5.1.1	CS Traffic Channel assignment and Release .....	5412
84.5.2	CS Traffic Channel assignment / negative cases .....	5414
84.5.2.1	MS fails to establish the CS traffic channel .....	5414
84.5.3	PS Traffic Channel assignment / successful cases .....	5416
84.5.3.1	PS Traffic Channel assignment and Release .....	5416
84.5.4	PS Traffic Channel assignment / negative cases .....	5418
84.5.4.1	MS fails to establish the PS traffic channel .....	5418
84.6	Release of GA-RRC .....	5420
84.7	Void .....	5420
84.8	Void .....	5420
84.9	Security Mode Control Procedure .....	5420
84.9.1	Security Mode Control Procedure / successful cases .....	5420
84.9.1.1	Security Mode Control Procedure (CS domain) .....	5420
84.9.1.2	Security Mode Control Procedure (PS domain) .....	5422
84.10	Channel modify procedure .....	5423
84.10.1	CS channel modify procedure / successful cases .....	5423
84.10.1.1	CS channel modify / successful case .....	5423
84.10.2	CS channel modify procedure / negative cases .....	5425
84.10.2.1	CS channel modify requests illegal change to parameter .....	5425
84.10.3	PS channel modify procedure / successful cases .....	5427
84.10.3.1	PS channel modify / successful case .....	5427
84.10.4	PS channel modify procedure / negative cases .....	5429
84.10.4.1	PS channel modify requests illegal change to parameter .....	5429
84.11	Deactivate channel procedure .....	5431
84.11.1	CS deactivate channel procedure / successful cases .....	5431
84.11.1.1	CS deactivate channel request from GANC .....	5431
84.11.1.2	CS deactivate channel request from MS .....	5432
84.11.2	CS deactivate channel procedure / negative cases .....	5434
84.11.2.1	TU5002 timer expires .....	5434
84.11.3	PS deactivate channel procedure / successful cases .....	5436
84.11.3.1	PS deactivate channel request from GANC .....	5436
84.11.3.2	PS deactivate channel request from MS .....	5437
84.11.4	PS deactivate channel procedure / negative cases .....	5439
84.11.4.1	TU5002 timer expires .....	5439
90	Text Telephony (TTY) Services .....	5441
90.1	Transmission of CTM Bearer Code .....	5441
90.1.1	Mobile Originated TTY Call .....	5441
90.1.2	Mobile Terminated TTY Call .....	5442
Annex 1 (normative):	Reference test methods .....	5444
A1.1	General Conditions (GC) .....	5444
A1.1.1	Outdoor test site and general arrangements for measurements involving the use of radiated fields (GC4) .....	5444
A1.1.2	Anechoic shielded chamber (GC5) .....	5444
A1.1.3	Temporary antenna connector (GC7) .....	5445
A1.1.4	Temporary antenna connector characteristics .....	5445
A1.1.5	Calibration of the temporary antenna connector .....	5446
A1.1.5.1	Antenna radiation pattern .....	5446
A1.1.5.2	Test range calibration .....	5448
A1.1.5.3	Temporary antenna connector coupling factor .....	5448
A1.1.6	Connection of devices with multiple antennae .....	5449
A1.1.6.1	DARP phase 2 MS .....	5449
A1.2	Normal and extreme Test Conditions (TC) .....	5449

A1.2.1	Power sources and ambient temperatures (TC2).....	5449
A1.2.2	Normal test conditions (TC2.1).....	5450
A1.2.3	Extreme test conditions (TC2.2).....	5450
A1.2.4	Vibration requirements (TC4).....	5451
Annex 2:	Void.....	5452
Annex 3:	Protocol implementation information .....	5453
A3.1	Protocol Implementation Conformance Statement (PICS).....	5453
A3.1.1	LAPDm protocol (3GPP TS 04.05 and 04.06).....	5453
A3.1.1.1	Simplified protocol - 3GPP TS 04.06 clause 6 .....	5453
A3.1.1.2	Management of SAPI = 3 - 3GPP TS 04.11 subclause 2.3.....	5453
A3.1.2	Mobility management .....	5453
A3.1.2.1	IMSI detach initiation by the MS - 3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.3.4.1 .....	5453
A3.1.2.2	IMSI detach completion by the MS - 3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.3.4.3 .....	5453
A3.1.2.3	MM specific procedures - 3GPP TS 04.08 / 3GPP TS 24.008 subclauses 4.4 and 4.5.1.1 .....	5453
A3.1.2.4	Receiving an MM STATUS message - 3GPP TS 04.08 / 3GPP TS 24.008 subclause 4.6.....	5453
A3.1.3	Call control .....	5454
A3.1.3.1	Status enquiry procedures - 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.5.3.1 .....	5454
A3.1.3.2	Receiving a STATUS message by a CC entity - 3GPP TS 04.08 / 3GPP TS 24.008 subclause 5.5.3.2	5454
A3.1.3.3	Called side compatibility checking - 3GPP TS 04.08 / 3GPP TS 24.008 clause B.3.....	5454
A3.1.3.4	Disconnect on incoming call .....	5454
A3.1.4	Layer 1 .....	5454
A3.1.4.1	Optional storage of BCCH carrier information - 3GPP TS 05.08 subclause 6.3 .....	5454
A3.1.5	Autocalling - (ref.: 3GPP TS 02.07, annex 1) .....	5454
A3.1.6	Transient states.....	5454
A3.2	Protocol Implementation Extra Information for Testing (PIXIT) .....	5455
A3.2.0	Introduction .....	5455
A3.2.1	Basic characteristics .....	5455
A3.2.1.1	Type of antenna.....	5455
A3.2.1.2	Power supply.....	5456
A3.2.1.3	Power class of the MS .....	5456
A3.2.1.4	Channel modes supported.....	5456
A3.2.1.5	Teleservices supported.....	5456
A3.2.1.6	Supplementary services supported.....	5456
A3.2.1.7	Bearer services supported.....	5456
A3.2.1.8	SIM removal .....	5457
A3.2.1.9	Classmark .....	5457
A3.2.1.10	Type of SIM/ME interface (ref. 3GPP TS 11.11 and 3GPP TS 11.12) .....	5458
A3.2.1.11	Multislot class .....	5458
A3.2.2	Man machine interface .....	5458
A3.2.2.1	Mobile station features.....	5458
A3.2.2.2	Short message service .....	5459
A3.2.2.3	Supplementary services .....	5459
A3.2.2.3.1	Call forwarding .....	5459
A3.2.2.3.2	Call restriction .....	5459
A3.2.2.3.3	Handling of (undefined) GSM supplementary services .....	5460
A3.2.3	Electrical Man Machine Interface (EMMI) .....	5460
A3.2.3.1	Methods supported for activation/deactivation of EMMI .....	5460
A3.2.3.2	Transmission rate supported by the ME on the EMMI .....	5460
A3.2.3.3	Layer 3 messages supported on the EMMI .....	5460
A3.2.3.4	Keystroke sequence messages .....	5460
A3.2.3.5	Internal malfunction detected messages.....	5460
A3.2.4	Digital Audio Interface (DAI) .....	5460
A3.2.5	Characteristics related to bearer services or teleservices .....	5461
A3.2.5.1	Access interface.....	5461
A3.2.5.2	Configuration of the MT .....	5461
A3.2.5.3	Capability information .....	5461
A3.2.5.4	Subaddress or DDI number .....	5461
A3.2.5.5	User to user signalling .....	5461
A3.2.5.6	Data call set-up and data call clearing .....	5461

A3.2.5.7	Characteristics of non-transparent data services.....	5462
A3.2.5.8	Possible ways of setting-up a call from either an external interface or internally .....	5462
A3.2.5.9	Application layer causing automatic call termination .....	5462
A3.2.5.10	Call re-establishment for MS not supporting speech.....	5462
A3.2.6	International mobile station equipment identity .....	5462
A3.2.7	Receiver intermediate frequencies.....	5462
A3.2.8	Artificial ear .....	5462
Annex 4:	Test SIM Parameters.....	5466
A4.1	Introduction .....	5466
A4.1.1	Definitions .....	5466
A4.1.2	Definition of the test algorithm for authentication .....	5466
A4.2	Default Parameters for the test SIM.....	5466
A4.3	Default settings for the Elementary Files (EFs) .....	5466
A4.3.1	EF <sub>ICCID</sub> (ICC Identification).....	5467
A4.3.2	EF <sub>LP</sub> (Language preference) .....	5467
A4.3.3	EF <sub>IMSI</sub> (IMSI).....	5467
A4.3.4	EF <sub>Kc</sub> (Ciphering key Kc) .....	5467
A4.3.5	EF <sub>PLMNsel</sub> (PLMN selector).....	5467
A4.3.6	EF <sub>HPLMN</sub> (HPLMN search period) .....	5468
A4.3.7	EF <sub>ACMmax</sub> (ACM maximum value) .....	5468
A4.3.8	EF <sub>SST</sub> (SIM service table).....	5468
A4.3.9	EF <sub>ACM</sub> (Accumulated call meter) .....	5469
A4.3.10	EF <sub>PUCT</sub> (Price per unit and currency table).....	5469
A4.3.11	EF <sub>CBMI</sub> (Cell broadcast Message Identifier Selection) .....	5469
A4.3.12	EF <sub>BCCH</sub> (Broadcast control channels).....	5469
A4.3.13	EF <sub>ACC</sub> (Access control class).....	5470
A4.3.14	EF <sub>FPLMN</sub> (Forbidden PLMNs) .....	5470
A4.3.15	EF <sub>LOCI</sub> (Location information) .....	5470
A4.3.16	EF <sub>AD</sub> (Administrative data).....	5471
A4.3.17	EF <sub>Phase</sub> (Phase identification) .....	5471
A4.3.18	EF <sub>ADN</sub> (Abbreviated dialling numbers).....	5471
A4.3.19	EF <sub>FDN</sub> (Fixed dialling numbers) .....	5471
A4.3.20	EF <sub>SMS</sub> (Short messages).....	5471
A4.3.21	EF <sub>CCP</sub> (Capability configuration parameters) .....	5471
A4.3.22	EF <sub>MSISDN</sub> (MSISDN) .....	5471
A4.3.23	EF <sub>SMSP</sub> (Short message service parameters).....	5471
A4.3.24	EF <sub>SMSS</sub> (SMS status).....	5471
A4.3.25	EF <sub>EXT1</sub> (Extension 1) .....	5472
A4.3.26	EF <sub>EXT2</sub> (Extension 2) .....	5472
A4.3.27	EF <sub>VGCS</sub> (Voice Group Call Service) .....	5472
A4.3.28	EF <sub>VGCSS</sub> (Voice Group Call Service Status).....	5473
A4.3.29	EF <sub>VBS</sub> (Voice Broadcast Service) .....	5473
A4.3.30	EF <sub>VBSS</sub> (Voice Broadcast Service Status).....	5474
A4.3.31	EF <sub>eMLPP</sub> (enhanced Multi Level Pre-emption and Priority) .....	5474
A4.3.32	EF <sub>AAeM</sub> (Automatic Answer for eMLPP Service) .....	5474
A4.3.33	EF <sub>KcGPRS</sub> (GPRS Ciphering key KcGPRS).....	5474
A4.3.34	EF <sub>LOCIGPRS</sub> (GPRS location information) .....	5475
Annex 4A:	Test USIM Parameters .....	5476
Annex 5:	Test equipment .....	5477
A5.1	Introduction .....	5477
A5.1.1	General .....	5477
A5.1.2	Test equipment terms .....	5477
A5.1.3	Confidence level .....	5477
A5.2	Standard test signals .....	5478
A5.3	SS functional requirements .....	5478

A5.3.1	Level setting range .....	5478
A5.3.2	Level Measurement / operation range .....	5478
A5.3.3	MS power supply interface .....	5479
A5.3.4	MS antenna interface .....	5479
A5.3.4.1	Uplink receiver error .....	5479
A5.3.4.2	Power and Power versus time measurements .....	5479
A5.3.4.3	Wideband selective power measurement .....	5482
A5.3.4.4	Inband selective power measurements .....	5482
A5.3.4.5	Modulation accuracy and frequency error measurements .....	5483
A5.3.4.6	RF delay measurements relative to nominal times .....	5483
A5.3.4.7	The wanted signal or traffic channel of serving cell .....	5483
A5.3.4.8	The first interfering signal or traffic channel of the first adjacent cell .....	5485
A5.3.4.9	The second interfering signal .....	5485
A5.3.4.10	BCCH carriers of serving and adjacent cells .....	5486
A5.3.4.11	The wide frequency range signal .....	5487
A5.3.4.12	The multipath fading function .....	5488
A5.3.5	MS audio interface and DAI .....	5488
A5.3.5.1	General uncertainties .....	5488
A5.3.5.2	Analogue single test tone .....	5488
A5.3.5.3	Delay measurement between Um and DAI .....	5488
A5.4	SIM simulator functional requirements .....	5488
A5.4.1	General .....	5488
A5.4.2	Contacts C1, C2, C6, C7 .....	5489
A5.4.2.1	Default measurement / setting uncertainties .....	5489
A5.4.2.2	Contact C1 .....	5489
A5.4.2.3	Contact C7 .....	5490
A5.4.3	Contact C3 .....	5491
A5.4.4	Definition of timing .....	5491
A5.5	A-GPS and A-GNSS Minimum Performance Test System requirements .....	5491
A5.5.1	Test System Uncertainty for A-GPS and A-GNSS Minimum Performance tests .....	5491
A5.5.2	Test Parameter Relaxations (This clause is informative) .....	5493
A5.5.3	Interpretation of measurement results .....	5494
A5.5.4	Derivation of Test Requirements (This clause is informative) .....	5495
Annex 6 (informative):	E-OTD Accuracy Measurement Test Environment .....	5498
A6.1	Recommended Timing Accuracy Test Environment (Unassisted) .....	5498
A6.2	Recommended Timing Accuracy Test Environment (Assisted) .....	5499
Annex 7 (informative):	General rules for statistical testing .....	5503
A7.1	Statistical testing of receiver performance .....	5503
A7.1.1	Basics .....	5503
A7.1.1.1	Definition of (error) events .....	5503
A7.1.1.2	Test Method .....	5503
A7.1.1.3	Test Criteria .....	5503
A7.1.1.4	Calculation assumptions .....	5504
A7.1.1.4.1	Statistical independence .....	5504
A7.1.1.4.2	Applied formulas .....	5504
A7.1.2	Definition of good pass fail decision .....	5505
A7.1.3	Implementation .....	5506
A7.1.3.1	Proceeding .....	5506
A7.1.3.2	Limit lines .....	5506
A7.1.4	Good balance between test time and statistical significance .....	5509
A7.1.5	Minimum and maximum expected duration of tests .....	5510
A7.2	Statistical testing of 2 D position error and TTFF for A-GPS and A-GNSS Minimum Performance test cases .....	5510
A7.2.1	Test Method .....	5510
A7.2.2	Error Ratio (ER) .....	5511
A7.2.3	Test Design .....	5511
A7.2.3.1	Confidence level .....	5511

A7.2.3.2	Introduction: Supplier Risk versus Customer Risk .....	5511
A7.2.3.3	Supplier Risk versus Customer Risk.....	5512
A7.2.3.4	Introduction: Standard test versus early decision concept .....	5512
A7.2.3.5	Standard test versus early decision concept.....	5513
A7.2.3.6	Selectivity .....	5513
A7.2.3.7	Design of the test.....	5514
A7.2.4	Pass fail decision .....	5515
A7.2.4.1	Numerical definition of the pass fail limits .....	5515
A7.2.4.2	Pass fail decision rules .....	5515
A7.2.4.3	Background information to the pass fail limits .....	5516
Annex 8:	Void.....	5517
Annex 9 (normative):	GAN certificate .....	5518
A9.1	Files relating to GAN certificate for testing .....	5518
A9.1.1	Overview and usage of certificate files.....	5518
A9.1.2	Privacy of private keys and usage of certificate .....	5518
Annex 10 (informative):	Repeated SACCH Layer 1 Test Method: .....	5519
A10.1	Details on Repeated SACCH Testing.....	5519
Annex B (informative):	Change history .....	5522