

ETSI TS 125 133 V18.0.0 (2024-05)



Universal Mobile Telecommunications System (UMTS); Requirements for support of radio resource management (FDD) (3GPP TS 25.133 version 18.0.0 Release 18)

[ETSI TS 125 133 V18.0.0 \(2024-05\)](https://standards.iteh.ai/catalog/standards/etsi/ba164152-35c3-411e-8949-f5df67e8d50c/etsi-ts-125-133-v18-0-0-2024-05)

<https://standards.iteh.ai/catalog/standards/etsi/ba164152-35c3-411e-8949-f5df67e8d50c/etsi-ts-125-133-v18-0-0-2024-05>



Reference

RTS/TSGR-0425133vi00

Keywords

UMTS

ETSI

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

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

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<https://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our

Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables. (2024-05)

The cross reference between 3GPP and ETSI identities can be found under <https://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	18
1 Scope	19
2 References	19
3 Definitions, symbols and abbreviations	20
3.1 Definitions	20
3.2 Symbols.....	21
3.3 Abbreviations	22
3.4 Test tolerances	23
3.5 Additional notation.....	24
3.5.1 Groups of E-UTRA bands	24
4 Idle Mode Tasks	25
4.1 Cell Selection	25
4.1.1 Introduction.....	25
4.2 Cell Re-selection	25
4.2.1 Introduction.....	25
4.2.2 Requirements	25
4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell	26
4.2.2.2 Measurements of intra-frequency cells	26
4.2.2.3 Measurements of inter-frequency FDD cells	27
4.2.2.4 Measurements of inter-frequency TDD cells	28
4.2.2.5 Measurements of inter-RAT GSM cells	29
4.2.2.5.1 Cell reselection based on cell ranking	29
4.2.2.5.2 Cell reselection based on priority information	29
4.2.2.5a Measurements of inter-RAT E-UTRA cells.....	30
4.2.2.6 Evaluation of cell re-selection criteria.....	32
4.2.2.7 Maximum interruption in paging reception.....	32
4.2.2.8 Number of cells in cell lists.....	33
4.2.2.8a Number of cells in cell lists (Increased UE carrier monitoring).....	33
4.2.2.9 Additional requirements for measurement of inter-frequency and inter-RAT cells when MBMS reception is active.....	34
4.2.2.10 MTCH Interruption time	34
4.2.2.11 Reselection to CSG cells	34
4.2.2.11.1 Reselection from a non CSG to an inter-frequency CSG cell.....	35
4.2.2.11.2 Reselection from a non CSG to an inter-RAT E-UTRA CSG cell	35
4.3 MBSFN cluster selection.....	36
4.3.1 Introduction.....	36
4.4 MBSFN cluster reselection.....	36
4.4.1 Introduction.....	36
4.5 Minimization of Drive Tests (MDT)	37
4.5.1 Introduction.....	37
4.5.2 Measurements	37
4.5.2.1 Requirements	37
4.5.3 Relative Time Stamp Accuracy	37
4.5.3.1 Requirements	37
4.5.4 Relative Time Stamp Accuracy for RRC Connection Establishment Failure Log Reporting	37
4.5.4.1 Requirements	38
5 UTRAN Connected mode mobility.....	38
5.1 FDD/FDD Soft Handover	38
5.1.1 Introduction.....	38
5.1.2 Requirements	38

5.1.2.1	Active set dimension	38
5.1.2.2	Active set update delay	38
5.1.2.3	Interruption Time	39
5.2	FDD/FDD Hard Handover	39
5.2.1	Introduction.....	39
5.2.2	Requirements	39
5.2.2.1	Hard handover delay	39
5.2.2.2	Interruption time	39
5.3	FDD/TDD Handover	40
5.3.1	Introduction.....	40
5.3.2	Requirements	41
5.3.2.1	FDD/TDD handover delay	41
5.3.2.2	Interruption time	41
5.4	FDD/GSM Handover	42
5.4.1	Introduction.....	42
5.4.2	Requirements	42
5.4.2.1	Handover delay	42
5.4.2.2	Interruption time	42
5.4a	FDD to E-UTRAN FDD Handover.....	43
5.4a.1	Introduction.....	43
5.4a.2	Requirements	43
5.4a.2.1	Handover delay	43
5.4a.2.2	Interruption time	43
5.4b	FDD to E-UTRAN TDD Handover	44
5.4b.1	Introduction.....	44
5.4b.2	Requirements	44
5.4b.2.1	Handover delay	44
5.4b.2.2	Interruption time	44
5.5	Cell Re-selection in CELL_FACH.....	44
5.5.1	Introduction.....	44
5.5.2	Requirements	45
5.5.2.1	Cell re-selection delay.....	45
5.5.2.1.1	Intra frequency cell reselection.....	45
5.5.2.1.2	Inter frequency cell reselection.....	45
5.5.2.1.3	FDD-TDD cell reselection.....	46
5.5.2.1.4	FDD-GSM Cell Reselection.....	46
5.5.2.1.5	FDD-E-UTRAN Cell Reselection	47
5.5.2.1.6	Void.....	47
5.5.2.1A	Cell reselection delay to CSG cells	47
5.5.2.1A.1	Reselection from a non CSG FDD to an inter-frequency FDD CSG cell.....	48
5.5.2.1A.2	Reselection from a non CSG FDD to an inter-RAT E-UTRA CSG cell	48
5.5.2.2	Interruption time	49
5.5.2.2.1	FDD-FDD cell reselection.....	49
5.5.2.2.2	FDD-TDD cell reselection.....	50
5.5.2.2.3	FDD-GSM cell reselection	50
5.5.2.3	Measurement and evaluation of cell selection criteria S of serving cell	51
5.5.2.2.4	FDD-E-UTRA Cell Reselection	51
5.6	Cell Re-selection in CELL_PCH.....	51
5.6.1	Introduction.....	51
5.6.2	Requirements	51
5.7	Cell Re-selection in URA_PCH	52
5.7.1	Introduction.....	52
5.7.2	Requirements	52
5.8	RACH reporting	52
5.8.1	Introduction.....	52
5.8.2	Requirements	52
5.9	Inter-RAT cell change order from UTRAN in CELL_DCH and CELL_FACH.....	52
5.9.1	Introduction.....	52
5.9.2	Requirements	53
5.9.2.1	Delay	53
5.9.2.2	Interruption time	53
5.10	Serving HS-DSCH cell change	54

5.10.3	Introduction.....	54
5.10.2	Requirements	54
5.10.2.1	Serving HS-DSCH cell change delay.....	54
5.10.2.2	Interruption time	54
5.11	Enhanced Serving HS-DSCH cell change.....	54
5.11.1	Introduction.....	54
5.11.2	Requirements	55
5.12	Interruption on Primary Uplink Frequency in DC-HSUPA	55
5.12.1	Introduction.....	55
5.12.2	Requirements	55
5.13	System information acquisition for CSG cell.....	55
5.13.1	Introduction.....	55
5.13.2	CSG SI acquisition delay	55
5.13.3	Interfrequency CSG decoding interruption.....	56
5.13.4	CSG reporting delay	56
5.14	System information acquisition for inter-RAT E-UTRA cell	56
5.14.1	Identification of a new CGI of inter-RAT E-UTRA FDD cell with autonomous gaps.....	56
5.14.2	Identification of a new CGI of inter-RAT E-UTRA TDD cell with autonomous gaps	57
5.14.3	ECGI reporting delay.....	57
5.15	Packet Loss Rate on Serving HS-DSCH Cells in Multi-Carrier HSDPA.....	57
5.15.1	Introduction.....	57
5.15.2	Requirements	57
6	RRC Connection Control	58
6.1	RRC Re-establishment	58
6.1.1	Introduction.....	58
6.1.2	Requirements	58
6.1.2.1	UE Re-establishment delay requirement.....	58
6.2	(void).....	59
6.3	Random Access	59
6.3.1	Introduction.....	59
6.3.2	Requirements	59
6.3.2.1	Correct behaviour when receiving an ACK	59
6.3.2.2	Correct behaviour when receiving an NACK	59
6.3.2.3	Correct behaviour at Time-out	59
6.3.2.4	Correct behaviour when reaching maximum transmit power	59
6.3.2.5	Correct behaviour when selecting 2 or 10msec TTI length for Enhanced Uplink in CELL_FACH state and idle mode.....	59
6.4	Transport format combination selection in UE	60
6.4.1	Introduction.....	60
6.4.2	Requirements	60
6.5	Maximum allowed UL TX Power.....	64
6.6	(void).....	66
6.7	CSG Proximity Indication for E-UTRAN and UTRAN.....	66
6.7.1	Introduction	66
6.7.2	Requirements.....	66
6.8	10ms Mode/20ms Mode switching in DCH	66
6.8.1	Introduction.....	66
6.8.2	Requirements	66
7	Timing and Signalling characteristics	67
7.1	UE Transmit Timing	67
7.1.1	Introduction.....	67
7.1.2	Requirements	67
7.2	UE Receive - Transmit Time Difference.....	67
7.2.1	Introduction.....	67
7.2.2	Requirements	68
7.3	UE timer accuracy	68
7.3.1	Introduction.....	68
7.3.2	Requirements	68
7.4	PRACH Burst timing accuracy	68
7.4.1	Introduction.....	68

7.4.2	Requirements	68
8	UE Measurements Procedures.....	69
8.1	General Measurement Requirements in CELL_DCH State	69
8.1.1	Introduction.....	69
8.1.2	Requirements	69
8.1.2.1	UE Measurement Capability	69
8.1.2.1a	UE Measurement Capability (Increased UE carrier monitoring)	71
8.1.2.2	FDD intra frequency measurements.....	71
8.1.2.2.1	Identification of a new cell	71
8.1.2.2.1.1	Identification of a new cell using IPDL gaps	72
8.1.2.2.2	UE CPICH measurement capability	72
8.1.2.2.2.1	Capabilities for measurements during IPDL gaps.....	73
8.1.2.2.3	Periodic Reporting.....	73
8.1.2.2.4	Event-triggered Periodic Reporting	73
8.1.2.2.5	Event Triggered Reporting	73
8.1.2.3	FDD inter frequency measurements.....	74
8.1.2.3.1	Identification of a new cell	74
8.1.2.3.2	UE CPICH measurement capability	76
8.1.2.3.3	Periodic Reporting.....	79
8.1.2.3.4	Event Triggered Reporting	79
8.1.2.4	TDD measurements.....	79
8.1.2.4.1	Identification of a new cell	80
8.1.2.4.1.1	3.84 Mcps TDD Option	80
8.1.2.4.1.2	1.28 Mcps TDD Option	80
8.1.2.4.2	P-CCPCH RSCP measurement period	81
8.1.2.4.3	Periodic Reporting.....	81
8.1.2.4.4	Event Triggered Reporting	81
8.1.2.5	GSM measurements	82
8.1.2.5.1	GSM carrier RSSI.....	82
8.1.2.5.2	BSIC verification.....	83
8.1.2.5.2.1	Initial BSIC identification.....	85
8.1.2.5.2.2	BSIC re-confirmation.....	85
8.1.2.5.3	Periodic Reporting.....	86
8.1.2.5.4	Event Triggered Reporting	86
8.1.2.6	E-UTRAN measurements	86
8.1.2.6.1	Identification of a new cell	87
8.1.2.6.2	E-UTRAN RSRP and RSRQ measurement period	87
8.1.2.6.3	Periodic reporting	88
8.1.2.6.4	Void	88
8.1.2.6.5	Event Triggered reporting	88
8.2	Measurements in CELL_DCH State with special requirements.....	88
8.2.1	Introduction.....	88
8.2.2	Requirements	88
8.3	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_DCH state.....	89
8.3.1	Introduction.....	89
8.3.2	Requirements	89
8.4	Measurements in CELL_FACH State when HS-DSCH discontinuous reception is not ongoing	90
8.4.1	Introduction.....	90
8.4.2	Requirements	90
8.4.2.1	UE Measurement Capability when HS-DSCH discontinuous reception is not ongoing	90
8.4.2.1a	UE Measurement Capability when HS-DSCH discontinuous reception is not ongoing (Increased UE carrier monitoring).....	92
8.4.2.2	FDD intra frequency measurements when HS-DSCH discontinuous reception is not ongoing.....	92
8.4.2.2.1	Identification of a new cell	92
8.4.2.2.1.1	Identification of a new cell using IPDL gaps	93
8.4.2.2.2	UE CPICH measurement capability	93
8.4.2.2.2.1	Capabilities for measurements during IPDL gaps.....	93
8.4.2.2.3	RACH reporting	94
8.4.2.3	FDD inter frequency measurements when HS-DSCH discontinuous reception is not ongoing.....	94
8.4.2.3.1	Identification of a new cell	94
8.4.2.3.2	UE CPICH measurement capability	94

8.4.2.4	TDD measurements when HS-DSCH discontinuous reception is not ongoing	95
8.4.2.4.1	Identification of a new cell	95
8.4.2.4.2	P-CCPCH RSCP measurement period	96
8.4.2.5	GSM measurements when HS-DSCH discontinuous reception is not ongoing	97
8.4.2.5.1	GSM carrier RSSI	97
8.4.2.5.2	BSIC verification	98
8.4.2.5.2.1	Initial BSIC identification	99
8.4.2.5.2.2	BSIC re-confirmation	99
8.4.2.6	E-UTRAN measurements when HS-DSCH discontinuous reception is not ongoing	100
8.4.2.6.1	Identification of a new cell	100
8.4.2.6.2	UE RSRP and RSRQ measurement capability	101
8.4.2.6.3	E-UTRA measurements reporting	101
8.4a	Measurements in CELL_FACH State when HS-DSCH discontinuous reception is ongoing	102
8.4a.1	Introduction	102
8.4a.2	Requirements	102
8.4a.2.1	UE Measurement Capability	102
8.4a.2.2	FDD intra frequency measurements when HS-DSCH discontinuous reception is ongoing	102
8.4a.2.2.1	Identification of a new cell	102
8.4a.2.2.2	UE CPICH measurement capability	103
8.4a.2.2.3	RACH reporting	103
8.4a.2.3	FDD inter frequency measurements	103
8.4a.2.3.1	Identification of a new cell	103
8.4a.2.3.2	UE CPICH measurement capability	104
8.4a.2.4	TDD measurements when HS-DSCH discontinuous reception is ongoing	105
8.4a.2.4.1	Identification of a new cell	105
8.4a.2.4.1.2	1.28 Mcps TDD Option	106
8.4a.2.4.2	P-CCPCH RSCP measurement period	107
8.4a.2.5	GSM measurements when HS-DSCH discontinuous reception is ongoing	107
8.4a.2.5.1	GSM carrier RSSI	107
8.4a.2.5.2	BSIC verification	107
8.4a.2.5.2.1	Initial BSIC identification	108
8.4a.2.5.2.2	BSIC re-confirmation	108
8.4a.2.6	E-UTRA measurements when HS-DSCH discontinuous reception is ongoing	108
8.4a.2.6.1	Identification of a new cell	109
8.4a.2.6.2	UE RSRP and RSRQ measurement capability	110
8.4a.2.6.3	E-UTRA measurements reporting	110
8.5	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_FACH state	111
8.5.1	Introduction	111
8.5.2	Requirements	111
9	Measurements Performance Requirements	111
9.1	Measurement Performance for UE	111
9.1.1	CPICH RSCP	112
9.1.1.1	Intra frequency measurements accuracy	112
9.1.1.1.1	Absolute accuracy requirement	112
9.1.1.1.2	Relative accuracy requirement	112
9.1.1.2	Inter frequency measurement accuracy	113
9.1.1.2.1	Relative accuracy requirement	113
9.1.1.3	CPICH RSCP measurement report mapping	113
9.1.2	CPICH Ec/Io	114
9.1.2.1	Intra frequency measurements accuracy	114
9.1.2.1.1	Absolute accuracy requirement	114
9.1.2.1.2	Relative accuracy requirement	114
9.1.2.2	Inter frequency measurement accuracy	115
9.1.2.2.1	Absolute accuracy requirement	115
9.1.2.2.2	Relative accuracy requirement	116
9.1.2.3	CPICH Ec/Io measurement report mapping	116
9.1.3	UTRA Carrier RSSI	116
9.1.3.1	Absolute accuracy requirement	117
9.1.3.2	Relative accuracy requirement	117
9.1.3.3	UTRA Carrier RSSI measurement report mapping	117
9.1.4	GSM carrier RSSI	118

9.1.4a	E-UTRAN RSRP	118
9.1.4b	E-UTRAN RSRQ	118
9.1.4c	E-UTRAN WB-RSRQ.....	119
9.1.5	Transport channel BLER	119
9.1.5.1	BLER measurement requirement	119
9.1.5.2	Transport channel BLER measurement report mapping	119
9.1.6	UE transmitted power	119
9.1.6.1	Accuracy requirement	119
9.1.6.2	UE transmitted power measurement report mapping	120
9.1.7	SFN-CFN observed time difference	120
9.1.7.1	Intra frequency measurement requirement	120
9.1.7.2	Inter frequency measurement requirement	121
9.1.7.3	SFN-CFN observed time difference measurement report mapping	122
9.1.8	SFN-SFN observed time difference	122
9.1.8.1	SFN-SFN observed time difference type 1	122
9.1.8.1.1	Measurement requirement	122
9.1.8.1.2	SFN-SFN observed time difference type 1 measurement report mapping	123
9.1.8.2	SFN-SFN observed time difference type 2	123
9.1.8.2.1	Intra frequency measurement requirement accuracy without IPDL period active.....	123
9.1.8.2.2	Intra frequency measurement requirement accuracy with IPDL period active.....	124
9.1.8.2.3	Inter frequency measurement requirement accuracy	125
9.1.8.2.4	SFN-SFN observed time difference type 2 measurement report mapping	125
9.1.9	UE Rx-Tx time difference	125
9.1.9.1	UE Rx-Tx time difference type 1	125
9.1.9.1.1	Measurement requirement	126
9.1.9.1.2	UE Rx-Tx time difference type 1 measurement report mapping	126
9.1.9.2	UE Rx-Tx time difference type 2	126
9.1.9.2.1	Measurement requirement	126
9.1.9.2.2	UE Rx-Tx time difference type 2 measurement report mapping	127
9.1.10	(void)	127
9.1.11	P-CCPCH RSCP	127
9.1.11.1	Absolute accuracy requirements	127
9.1.11.1.1	3,84 Mcps TDD Option	127
9.1.11.1.2	1.28 Mcps TDD Option	127
9.1.11.2	P-CCPCH RSCP measurement report mapping	128
9.1.12	UE GPS Timing of Cell Frames for UE positioning.....	128
9.1.12.1	UE GPS timing of Cell Frames for UE positioning measurement report mapping.....	128
9.1.13	UE transmission power headroom	129
9.1.13.1	Delay requirement	129
9.1.13.2	Measurement period requirement.....	129
9.1.13.3	UE transmission power headroom measurement report mapping	129
9.1.13.4	UE transmission power headroom measurement report accuracy.....	130
9.1.14	IEEE 802.11 Measurements.....	131
9.1.14.1	Introduction	131
9.1.14.2	IEEE 802.11 Beacon RSSI.....	131
9.1.14.2.1	Accuracy requirement	131
9.2	Measurements Performance for UTRAN	131
9.2.1	Received total wideband power	132
9.2.1.1	Absolute accuracy requirement	132
9.2.1.2	Relative accuracy requirement	132
9.2.1.3	Received total wideband power measurement report mapping	132
9.2.2	SIR	133
9.2.2.1	Accuracy requirement	133
9.2.2.2	SIR measurement report mapping	133
9.2.3	SIR _{error}	133
9.2.3.1	Accuracy requirement	133
9.2.3.2	SIR _{error} measurement report mapping	133
9.2.4	Transmitted carrier power.....	134
9.2.4.1	Accuracy requirement	134
9.2.4.2	Transmitted carrier power measurement report mapping.....	134
9.2.5	Transmitted code power.....	134
9.2.5.1	Absolute accuracy requirement	134

9.2.5.2	Relative accuracy requirement	135
9.2.5.3	Transmitted code power measurement report mapping	135
9.2.6	(void)	135
9.2.7	Physical channel BER.....	135
9.2.7.1	Accuracy requirement	135
9.2.7.2	Physical channel BER measurement report mapping	135
9.2.8	Round trip time	136
9.2.8.1	Absolute accuracy requirement.....	136
9.2.8.1.1	Minimum requirement.....	136
9.2.8.1.2	Requirement for extended round trip time.....	136
9.2.8.2	Round trip time measurement report mapping.....	136
9.2.8.2.1	Minimum requirement.....	136
9.2.8.2.2	Requirement for extended round trip time.....	137
9.2.9	Transport Channel BER.....	137
9.2.9.1	Accuracy requirement	137
9.2.9.2	Transport channel BER measurement report mapping	137
9.2.10	UTRAN GPS Timing of Cell Frames for UE positioning	138
9.2.10.1	Accuracy requirement	138
9.2.10.2	UTRAN GPS timing of Cell Frames for UE positioning measurement report mapping	138
9.2.11	PRACH Propagation delay	139
9.2.11.1	Accuracy requirement	139
9.2.11.1.1	PRACH Propagation delay.....	139
9.2.11.1.2	(void).....	139
9.2.11.2	PRACH Propagation delay measurement report mapping	139
9.2.11.2.1	Minimum requirement.....	139
9.2.11.2.2	Requirement for extended PRACH propagation delay.....	139
9.2.12	Acknowledged PRACH preambles.....	140
9.2.12.1	Acknowledged PRACH preambles measurement report mapping	140
9.2.13	(void)	140
9.2.14	(void)	140
9.2.15	SFN-SFN observed time difference.....	140
9.2.15.1	Accuracy requirement	140
9.2.15.1.1	Accuracy requirement without IPDL.....	140
9.2.15.1.2	Accuracy requirement with IPDL.....	141
9.2.15.2	SFN-SFN observed time difference measurement report mapping.....	141
9.2.16	Transmitted carrier power of all codes not used for HS-PDSCH, HS-SCCH, E-AGCH, E-RGCH or E-HICH transmission.....	141
9.2.16.1	Accuracy requirement	141
9.2.16.2	Measurement report mapping for transmitted carrier power of all codes not used for HS-PDSCH, HS-SCCH, E-AGCH, E-RGCH or E-HICH transmission	142
9.2.17	DL Transmission Branch Load.....	142
9.2.17.1	Accuracy requirement	142
9.2.17.2	DL Transmission Branch Load measurement report mapping.....	142
9.2.18	Received scheduled E-DCH power share (RSEPS).....	143
9.2.18.1	Accuracy requirement	143
9.2.18.2	Received scheduled E-DCH power share measurement report mapping	143

Annex A (normative): Test Cases144

A.1	Purpose of Annex	144
A.2	Requirement classification for statistical testing.....	144
A.2.1	Types of requirements in TS 25.133	144
A.3	RRM test configurations	145
A.3.1	UE with single antenna connector.....	145
A.3.2	UE with multiple antenna connectors.....	145
A.4	Idle Mode	145
A.4.1	(void).....	145
A.4.2	Cell Re-Selection.....	145
A.4.2.1	Scenario 1: Single carrier case.....	146
A.4.2.1.1	Test Purpose and Environment	146

A.4.2.1.2	Test Requirements.....	147
A.4.2.2	Scenario 2: Multi carrier case	147
A.4.2.2.1	Test Purpose and Environment	147
A.4.2.2.2	Test Requirements.....	148
A.4.2.3	Idle mode interfrequency reselection with an increased number of carriers.....	149
A.4.2.3.1	Test Purpose and Environment	149
A.4.2.3.2	Test Requirements.....	152
A.4.2.4	Scenario 4: Single carrier case with extended DRX	153
A.4.2.4.1	Test Purpose and Environment	153
A.4.2.1.2	Test Requirements.....	154
A.4.2.4	Scenario 5: Idle mode interfrequency reselection with extended DRX.....	154
A.4.2.2.2	Test Requirements.....	155
A.4.3	UTRAN to GSM Cell Re-Selection	156
A.4.3.1	Scenario 1	156
A.4.3.1.1	Test Purpose and Environment	156
A.4.3.1.2	Test Requirements.....	157
A.4.3.2	Scenario 2	157
A.4.3.2.1	Test Purpose and Environment	157
A.4.3.2.2	Test Requirements.....	158
A.4.3.3	Scenario 3	159
A.4.3.3.1	Test Purpose and Environment	159
A.4.3.3.2	Test Requirements.....	160
A.4.4	FDD/TDD Cell Re-selection	160
A.4.4.1	Test Purpose and Environment	160
A.4.4.1.1	3,84 Mcps TDD Option.....	160
A.4.4.1.2	1.28 Mcps TDD Option.....	162
A.4.4.2	Test Requirements	163
A.4.5	UTRAN to E-UTRA Cell Reselection	164
A.4.5.1	E-UTRA FDD is of higher priority.....	164
A.4.5.1.1	Test Purpose and Environment	164
A.4.5.1.2	Test Requirements.....	167
A.4.5.2	E-UTRA FDD is of lower priority.....	167
A.4.5.2.1	Test Purpose and Environment	167
A.4.5.2.2	Test Requirements.....	169
A.4.5.3	RSRQ based reselection when E-UTRA FDD is of higher priority.....	170
A.4.5.3.1	Test Purpose and Environment	170
A.4.5.3.2	Test Requirements.....	172
A.4.5.4	E-UTRA FDD is of higher priority (Increased UE carrier monitoring).....	173
A.4.5.4.1	Test Purpose and Environment	173
A.4.5.4.2	Test Requirements.....	178
A.4.5A	UTRAN to E-UTRA TDD Cell Reselection with Increased Carrier Monitoring.....	179
A.4.5A.1	Test Purpose and Environment	179
A.4.5A.2	Test Requirements.....	182
A.5	UTRAN Connected Mode Mobility.....	183
A.5.1	FDD/FDD Soft Handover	183
A.5.1.1	Test Purpose and Environment	183
A.5.1.1.1	Test procedure.....	184
A.5.1.2	Test Requirements	184
A.5.2	FDD/FDD Hard Handover	184
A.5.2.1	Handover to intra-frequency cell	184
A.5.2.1.1	Test Purpose and Environment	184
A.5.2.1.2	Test Requirements.....	185
A.5.2.2	Handover to inter-frequency cell	185
A.5.2.2.1	Test Purpose and Environment	185
A.5.2.2.2	Test Requirements.....	186
A.5.3	(void).....	187
A.5.4	Inter-system Handover from UTRAN FDD to GSM	187
A.5.4.1	Test Purpose and Environment	187
A.5.4.2	Test Requirements.....	189
A.5.4a	Inter-system Handover from UTRAN FDD to E-UTRAN FDD	189
A.5.4a.1	Test Purpose and Environment	189

A.5.4a.2	Test Requirements	192
A.5.4b	Inter-system Handover from UTRAN FDD to E-UTRAN TDD	192
A.5.4b.1	Test Purpose and Environment	192
A.5.4b.2	Test Requirements	195
A.5.4c	Inter-system Handover from UTRAN FDD to E-UTRAN FDD; Unknown Target Cell.....	195
A.5.4c.1	Test Purpose and Environment	195
A.5.4c.2	Test Requirements	196
A.5.4d	Inter-system Handover from UTRAN FDD to E-UTRAN TDD; Unknown Target Cell.....	197
A.5.4d.1	Test Purpose and Environment	197
A.5.4d.2	Test Requirements	198
A.5.5	Cell Re-selection in CELL_FACH.....	199
A.5.5.1	One frequency present in neighbour list and FACH measurement occasions configured	199
A.5.5.1.1	Test Purpose and Environment	199
A.5.5.1.2	Test Requirements.....	200
A.5.5.1A	One frequency present in neighbour list and HS-DSCH DRX configured	201
A.5.5.1A.1	Test Purpose and Environment	201
A.5.5.1A.2	Test Requirements.....	202
A.5.5.1B	One frequency present in neighbour list and HS-DSCH 2 nd DRX configured	203
A.5.5.1B.1	Test Purpose and Environment	203
A.5.5.1B.2	Test Requirements.....	204
A.5.5.1C	One frequency present in neighbour list and FACH measurement occasions configured, secondary BCH in use.....	205
A.5.5.1C.1	Test Purpose and Environment	205
A.5.5.1C.2	Test Requirements.....	206
A.5.5.2	Two frequencies present in the neighbour list and FACH measurement occasions configured	207
A.5.5.2.1	Test Purpose and Environment	207
A.5.5.2.2	Test Requirements.....	208
A.5.5.2A	Two frequencies present in the neighbour list and HS-DSCH DRX configured (Absolute priority levels not configured)	209
A.5.5.2A.1	Test Purpose and Environment	209
A.5.5.2A.2	Test Requirements.....	210
A.5.5.2B	Two frequencies present in the neighbour list and HS-DSCH DRX configured (Absolute priority levels configured)	211
A.5.5.2B.1	Test Purpose and Environment	211
A.5.5.2B.2	Test Requirements.....	212
A.5.5.2C	Two frequencies present in the neighbour list and HS-DSCH 2 nd DRX configured (Absolute priority levels not configured)	213
A.5.5.2C.1	Test Purpose and Environment	213
A.5.5.2C.2	Test Requirements.....	214
A.5.5.2D	Two frequencies present in the neighbour list and HS-DSCH 2 nd DRX configured (Absolute priority levels configured)	215
A.5.5.2D.1	Test Purpose and Environment	215
A.5.5.2D.2	Test Requirements.....	216
A.5.5.2E	Five frequencies present in the neighbour list and FACH measurement occasions configured for Increased Carrier Monitoring.....	217
A.5.5.2E.1	Test Purpose and Environment	217
A.5.5.2E.2	Test Requirements.....	220
A.5.5.3	Cell Reselection to GSM	221
A.5.5.3.1	Test Purpose and Environment	221
A.5.5.3.2	Test Requirements.....	223
A.5.5.3A	Cell Reselection to GSM in DRX	223
A.5.5.3A.1	Test Purpose and Environment.....	223
A.5.5.3.2	Test Requirements.....	226
A.5.5.4	Cell Reselection during an MBMS session, two frequencies present in neighbour list.....	226
A.5.5.4.1	Test Purpose and Environment	226
A.5.5.4.2	Test Requirements.....	228
A.5.5.5	UTRAN to E-UTRA Cell Reselection.....	229
A.5.5.5.1	Reselection to E-UTRA FDD when HS-DSCH DRX is configured (E-UTRA has higher priority) ..	229
A.5.5.5.1.1	Test Purpose and Environment.....	229
A.5.5.5.1.2	Test Requirements.....	232
A.5.5.5.2	Reselection to E-UTRA FDD when HS-DSCH DRX is configured (E-UTRA has lower priority) ...	232
A.5.5.5.2.1	Test Purpose and Environment.....	232

A.5.5.5.2.2	Test Requirements	235
A.5.5.5.3	Reselection to E-UTRA FDD when HS-DSCH 2 nd DRX is configured (E-UTRA has higher priority)	235
A.5.5.5.3.1	Test Purpose and Environment	235
A.5.5.5.3.2	Test Requirements	238
A.5.5.5.4	Reselection to E-UTRA TDD when HS-DSCH DRX is configured (E-UTRA has higher priority) ..	238
A.5.5.5.4.1	Test Purpose and Environment	238
A.5.5.5.4.2	Test Requirements	241
A.5.5.5.5	Reselection to E-UTRA TDD when HS-DSCH DRX is configured (E-UTRA has lower priority) ..	241
A.5.5.5.5.1	Test Purpose and Environment	241
A.5.5.5.5.2	Test Requirements	244
A.5.5.5.6	Reselection to E-UTRA TDD when HS-DSCH 2 nd DRX is configured configured (E-UTRA has higher priority)	244
A.5.5.5.6.1	Test Purpose and Environment	244
A.5.5.5.6.2	Test Requirements	247
A.5.5.5.7	Reselection to E-UTRA FDD with FACH measurement occasions configured	247
A.5.5.5.7.1	Test Purpose and Environment	247
A.5.5.5.7.2	Test Requirements	250
A.5.5.5.8	Reselection to E-UTRA TDD with FACH measurement occasions configured	250
A.5.5.5.8.1	Test Purpose and Environment	250
A.5.5.5.8.2	Test Requirements	253
A.5.6	Cell Re-selection in CELL_PCH	253
A.5.6.1	One frequency present in the neighbour list	253
A.5.6.1.1	Test Purpose and Environment	253
A.5.6.1.2	Test Requirements	254
A.5.6.2	Two frequencies present in the neighbour list	255
A.5.6.2.1	Test Purpose and Environment	255
A.5.6.2.2	Test Requirements	256
A.5.6.3	Cell re-selection during an MBMS session, one UTRAN inter-frequency and 2 GSM cells present in the neighbour list	256
A.5.6.3.1	Test Purpose and Environment	256
A.5.6.3.2	Test Requirements	258
A.5.7	Cell Re-selection in URA_PCH	259
A.5.7.1	One frequency present in the neighbour list	259
A.5.7.1.1	Test Purpose and Environment	259
A.5.7.1.2	Test Requirements	260
A.5.7.2	Two frequencies present in the neighbour list	260
A.5.7.2.1	Test Purpose and Environment	260
A.5.7.2.2	Test Requirements	261
A.5.8	Serving HS-DSCH cell change	262
A.5.8.1	Test Purpose and Environment	262
A.5.8.1.1	Test procedure	263
A.5.8.2	Test Requirements	263
A.5.9	Enhanced Serving HS-DSCH cell change	263
A.5.9.1	Test Purpose and Environment	263
A.5.9.1.1	Test procedure	265
A.5.9.2	Test Requirements	265
A.5.10	Intrafrequency System information acquisition for CSG cell	265
A.5.10.1	Test Purpose and Environment	265
A.5.10.2	Test Requirements	266
A.5.11	Interfrequency System information acquisition for CSG cell	267
A.5.11.1	Test Purpose and Environment	267
A.5.11.2	Test Requirements	268
A.6	RRC Connection Control	269
A.6.1	RRC Re-establishment delay	269
A.6.1.1	Test Purpose and Environment	269
A.6.1.1.1	TEST 1	269
A.6.1.1.2	TEST 2	270
A.6.1.2	Test Requirements	271
A.6.1.2.1	Test 1	271
A.6.1.2.2	Test 2	271

A.6.2	Random Access	272
A.6.2.1	Test Purpose and Environment	272
A.6.2.2	Test Requirements	273
A.6.2.2.1	Correct behaviour when receiving an ACK	273
A.6.2.2.2	Correct behaviour when receiving an NACK	273
A.6.2.2.3	Correct behaviour at Time-out	274
A.6.2.2.4	Correct behaviour when reaching maximum transmit power	274
A.6.2.2.5	Correct behaviour when selecting 2 or 10msec TTI length for Enhanced Uplink in CELL_FACH state and idle mode.....	274
A.6.3	(void).....	274
A.6.4	Transport format combination selection in UE	274
A.6.4.1	Test Purpose and Environment	274
A.6.4.1.1	Interactive or Background, PS, UL: 64 kbps.....	275
A.6.4.1.2	Interactive or Background, PS, UL: 64 kbps + Conversational / speech, CS, UL: 12.2kbps.....	276
A.6.4.2	Test Requirements	278
A.6.4.2.1	Interactive or Background, PS, UL: 64 kbps.....	278
A.6.4.2.2	Interactive or Background, PS, UL: 64 kbps + Conversational / speech, CS, UL: 12.2kbps.....	279
A.6.5	(void).....	279
A.6.6	E-TFC restriction in UE	279
A.6.6.1	Test Purpose and Environment	279
A.6.6.1.1	10ms TTI E-DCH E-TFC restriction testcase	279
A.6.6.1.1.1	Test Requirements	281
A.6.6.1.2	2ms TTI E-DCH E-TFC restriction testcase	282
A.6.6.1.2.1	Test Requirements	284
A.7	Timing and Signalling Characteristics	285
A.7.1	UE Transmit Timing	285
A.7.1.1	Test Purpose and Environment	285
A.7.1.2	Test Requirements	286
A.8	UE Measurements Procedures.....	287
A.8.1	FDD intra frequency measurements	287
A.8.1.1	Event triggered reporting in AWGN propagation conditions	287
A.8.1.1.1	Test Purpose and Environment	287
A.8.1.1.2	Test Requirements.....	288
A.8.1.2	Event triggered reporting of multiple neighbours in AWGN propagation condition.....	288
A.8.1.2.1	Test Purpose and Environment	288
A.8.1.2.2	Test Requirements.....	289
A.8.1.3	Event triggered reporting of two detectable neighbours in AWGN propagation condition.....	290
A.8.1.3.1	Test Purpose and Environment	290
A.8.1.3.2	Test Requirements.....	291
A.8.1.4	Correct reporting of neighbours in fading propagation condition.....	291
A.8.1.4.1	Test Purpose and Environment	291
A.8.1.4.2	Test Requirements.....	292
A.8.1.5	Event triggered reporting of multiple neighbour cells in Case 1 fading condition	292
A.8.1.5.1	Test Purpose and Environment	292
A.8.1.5.2	Test Requirements.....	293
A.8.1.6	Event triggered reporting of multiple neighbour cells in Case 3 fading condition	294
A.8.1.6.1	Test Purpose and Environment	294
A.8.1.6.2	Test Requirements.....	295
A.8.1.7	Event triggered reporting in AWGN propagation conditions	295
A.8.1.7.1	Test Purpose and Environment.....	295
A.8.1.7.2	Test Requirements	297
A.8.2	FDD inter frequency measurements	297
A.8.2.1	Correct reporting of neighbours in AWGN propagation condition	297
A.8.2.1.1	Test Purpose and Environment	297
A.8.2.1.2	Test Requirements.....	298
A.8.2.2	Correct reporting of neighbours in Fading propagation condition.....	299
A.8.2.2.1	Test Purpose and Environment	299
A.8.2.2.2	Test Requirements.....	299
A.8.2.3	Correct reporting of neighbours in fading propagation condition using TGL1=14	300
A.8.2.3.1	Test Purpose and Environment	300