

ETSI TS 136 314 V14.0.0 (2017-04)



**LTE;
Evolved Universal Terrestrial Radio Access (E-UTRA);
Layer 2 - Measurements
(3GPP TS 36.314 version 14.0.0 Release 14)**



Reference

RTS/TSGR-0236314ve00

Keywords

LTE

ETSI

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

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

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://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 only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

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

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

<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/CommiteeSupportStaff.aspx>

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.

© European Telecommunications Standards Institute 2017.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is 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 IPR Policy, no investigation, 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.

Foreword

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, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://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
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope	5
2 References	5
3 Definitions, symbols and abbreviations	5
3.1 Definitions	5
3.2 Symbols.....	5
3.3 Abbreviations	5
4 Layer 2 measurements.....	6
4.1 E-UTRAN measurements performed by the eNB	6
4.1.1 PRB usage.....	6
4.1.1.1 Total PRB usage.....	6
4.1.1.2 PRB usage per traffic class	7
4.1.1.3 Void.....	8
4.1.1.4 Void.....	8
4.1.1.5 Void.....	8
4.1.2 Received Random Access Preambles	8
4.1.3 Number of active UEs.....	9
4.1.3.1 Number of Active UEs in the DL per QCI	9
4.1.3.2 Number of Active UEs in the UL per QCI	10
4.1.4 Packet Delay	11
4.1.4.1 Packet Delay in the DL per QCI.....	11
4.1.5 Data Loss	12
4.1.5.1 Packet Discard Rate in the DL per QCI	12
4.1.5.2 Packet Uu Loss Rate in the DL per QCI	13
4.1.5.3 Packet Loss Rate in the UL per QCI	14
4.1.6 Scheduled IP Throughput	15
4.1.6.1 Scheduled IP Throughput in DL	15
4.1.6.2 Scheduled IP Throughput in UL	16
4.1.7 Scheduled IP Throughput for MDT	16
4.1.7.1 Scheduled IP Throughput for MDT in DL	16
4.1.7.2 Scheduled IP Throughput for MDT in UL	17
4.1.8 Data Volume	18
4.1.8.1 Data volume in DL.....	18
4.1.8.2 Data Volume in UL.....	19
4.1.9 Data Volume for Shared Networks.....	19
4.1.9.1 Data volume for shared networks in DL	19
4.1.9.2 Data Volume for shared networks in UL	19
4.2 E-UTRAN measurements performed by the UE	19
4.2.1 Packet Delay	19
4.2.1.1 UL PDCP Packet Delay per QCI.....	19
4.2.1.1.1 Measurement report mapping for PDCP SDU queuing delay	20
Annex A (informative): Change history	24
History	25

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document contains the description and definition of the measurements performed by E-UTRAN or the UE that are transferred over the standardised interfaces in order to support E-UTRA radio link operations, radio resource management (RRM), network operations and maintenance (OAM), minimization of drive tests (MDT) and self-organising networks (SON).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 36.321: "Evolved Universal Terrestrial Radio Access (E-UTRA) Medium Access Control (MAC) protocol specification".
- [3] 3GPP TS 36.322: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Link Control (RLC) protocol specification".
- [4] 3GPP TS 36.323: "Evolved Universal Terrestrial Radio Access (E-UTRA); Packet Data Convergence Protocol (PDCP) specification".
- [5] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) Protocol specification".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

3.2 Symbols

For the purposes of the present document, symbols apply locally in the subclause where they are defined.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

DRB	Data Radio bearer
DCCH	Dedicated Control Channel
DTCH	Dedicated Traffic Channel
HARQ	Hybrid Automatic Repeat Request