

ETSI TS 126 236 V12.0.0 (2014-10)



**Universal Mobile Telecommunications System (UMTS);
LTE;
Packet switched conversational multimedia applications;
Transport protocols
(3GPP TS 26.236 version 12.0.0 Release 12)**



ReferenceRTS/TSGS-0426236vc00

KeywordsLTE,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 - 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>

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

<http://portal.etsi.org/tb/status/status.asp>

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

http://portal.etsi.org/chaicor/ETSI_support.asp

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 2014.

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.

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 (<http://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**", "**may not**", "**need**", "**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
Introduction	4
1 Scope	5
2 References	5
3 Definitions and abbreviations.....	7
3.1 Definitions	7
3.2 Abbreviations	7
4 General	7
5 Media type requirements	8
5.1 Audio.....	8
5.1.1 RTP session description parameters	8
5.1.1.1 Parameter usage in an SDP offer.....	8
5.1.1.2 Construction of an SDP answer	9
5.1.2 RTP session description parameters for PoC.....	10
5.2 Video.....	10
5.3 Real time text	10
5.4 SES.....	10
6 Call control.....	10
7 Bearer control.....	10
7.1 Bandwidth	11
7.2 QoS negotiation.....	11
7.3 RTP receiver.....	11
7.4 RTP sender	11
Annex A (informative): Optional enhancements	13
A.1 Video enhancements.....	13
Annex B (informative): Mapping of SDP parameters to UMTS QoS parameters.....	14
Annex C (informative): Change history	20
History	21

Foreword

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

The present document specifies the codec specific RTP protocol details applying to packet switched conversational multimedia applications within the 3GPP IM Subsystem.

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.

Introduction

The present document contains a specification for required protocol usage within 3GPP specified Conversational Packet Switched Multimedia Services [5] which is based IP Multimedia Subsystem (IM Subsystem). IM Subsystem as a subsystem includes specifically the conversational IP multimedia services, whose service architecture, call control and media capability control procedures have been defined in 3GPP TS 24.229 [7], and are based on the 3GPP adopted version of IETF Session Initiated Protocol (SIP) [1].

In conversational packet switched multimedia service depends on IM Subsystem. The individual media types are independently encoded and packetized to appropriate separate Real Time Protocol (RTP) packets. These packets are then transported end-to-end inside UDP datagrams over real-time IP connections that have been negotiated and opened between the terminals during the SIP call as specified in 3GPP TS 24.229 [7].

The UEs operating within IM Subsystem need to provide encoding/decoding of the derived codecs, and perform corresponding packetization/depacketization functions. Logical bound between the media streams is handled in the SIP session layer, and inter-media synchronization in the receiver is handled with the use of RTP time stamps.

1 Scope

The present document introduces the required protocols for packet switched conversational multimedia applications within 3GPP IP Multimedia Subsystem. Visual and sound communications are specifically addressed. The intended applications are assumed to require low-delay, real-time functionality.

The present document describes the required protocol related elements for 3G PS multimedia terminal:

- required SDP signalling regarding the media type bit rate, packet size, packet transport frequency;
- usage of RTP payload for media types;
- bandwidth adaptation;
- QoS negotiation.

The present document is applicable, but not limited, to packet switched video telephony. All media handling, including codecs, for Multimedia Telephony Service for IMS (MTSI) service is defined in [35]. This specification does not apply to MTSI.

The applicability of the present document to GERAN is FFS.

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] IETF RFC 3261: "SIP: Session Initiation Protocol".
- [2] IETF RFC 4566: "SDP: Session Description Protocol".
- [3] IETF RFC 3550: "RTP: A Transport Protocol for Real-Time Applications", Schulzrinne H. et al, July 2003.
- [4] IETF RFC 3551: "RTP Profile for Audio and Video Conferences with Minimal Control", Schulzrinne H. and Casner S., July 2003.
- [5] 3GPP TS 26.235: "Packet switched conversational multimedia applications; Default codecs".
- [6] (void)
- [7] 3GPP TS 24.229: "IP multimedia call control protocol based on SIP and SDP".
- [8] 3GPP TS 23.228: "IP Multimedia Ssbsystem (IMS); Stage 2".
- [9] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".
- [10] 3GPP TS 23.207: "End to end quality of service concept and architecture".
- [11] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [12] 3GPP TS 26.071: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; General description".