

ETSI TS 126 103 V13.3.0 (2016-10)



**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
Speech codec list for GSM and UMTS
(3GPP TS 26.103 version 13.3.0 Release 13)**



Reference

RTS/TSGS-0426103vd30

Keywords

GSM,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/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 2016.
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 (<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 Normative references	5
3 Definitions and Abbreviations.....	7
3.1 Definitions	7
3.2 Abbreviations	7
4 General	8
5 3GPP Codec List for OoBTC in a BICC-based Circuit Switched Core Network and for AoIP.....	10
5.1 GSM Full Rate Codec Type (GSM FR)	10
5.2 GSM Half Rate Codec Type (GSM HR).....	10
5.3 GSM Enhanced Full Rate Codec Type (GSM EFR).....	10
5.4 Five Adaptive Multi-Rate Codec Types (FR AMR, HR AMR, UMTS AMR, UMTS AMR2, OHR AMR)	11
5.5 TDMA Enhanced Full Rate Codec Type (TDMA EFR).....	14
5.6 PDC Enhanced Full Rate Codec Type (PDC_EFR).....	14
5.7 Four Adaptive Multi-Rate Wideband Codec Types (FR AMR-WB, UMTS AMR-WB, OFR AMR-WB, OHR AMR-WB)	14
5.7A EVS Codec Type (UMTS_EVS).....	17
5.8 MuMe Dummy Codec (3G.324M).....	19
5.9 MuMe2 Dummy Codec (3G.324M2).....	20
5.10 Codec Extension.....	20
5.11 CSData Dummy Codec (AoIP)	20
6 Codec List for the Call Control Protocol.....	21
6.1 System Identifiers for GSM and UMTS.....	21
6.2 Codec Bitmap	21
6.3 Selected Codec Type	21
7 3GPP Codecs for OoBTC in a SIP-I -based Circuit Switched Core Network	23
7.1 Overview	23
7.2 AMR.....	23
7.3 AMR-WB	24
7.4 GSM_EFR.....	24
7.5 GSM_FR	24
7.6 GSM_HR.....	24
7.7 PCM	25
7.8 Telephone-Event	25
7.9 EVS	25
Annex A (informative): Example Supported Codec List for UMTS	26
Annex B (informative): Change history	28
History	29

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 Technical Specification outlines the Codec Lists in 3GPP including both systems, GSM and UMTS, to be used by the Out of Band Transcoder Control (OoBTC) protocol to set up a call or modify a call in **Transcoder Free Operation (TrFO)** and in "transcoder at the edge" scenarios.

The TS also specifies the SDP description of 3GPP Codecs to be used within a SIP-I -based circuit switched core network as specifies in 3GPP TS 23.231 [14].

The TS further specifies the coding of the Supported Codec List Information Elements for the UMTS radio access technology.

The TS further reserves the Code Point for the CSData (dummy) Codec Type for the negotiation of A-Interface Type and the RTP redundancy for CS Data and Fax services, see 3GPP TS 48.008 [23].

The Supported Codec List IE includes Codec_Types from the TDMA and PDC systems, to support TFO or TrFO between UMTS and TDMA, or UMTS and PDC.

2 Normative 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 TS 26.090: "AMR Speech Codec; Speech Transcoding Functions".
- [2] 3GPP TS 26.093: "AMR Speech Codec; Source Controlled Rate Operation".
- [3] 3GPP TS 26.101: "Mandatory Speech Codec Speech Processing Functions; AMR Speech Codec Frame Structure".
- [4] 3GPP 46.0xx: "Enhanced Full Rate Codec Recommendations".
- [5] 3GPP 26.0xx: "Adaptive Multi-Rate Codec Recommendations".
- [6] "ITU Q.765.5: "Use of Application Transport Mechanism for Bearer Independent Call Control"
- [7] 3GPP TS 28.062: "In-band Tandem Free Operation (TFO) of Speech Codecs, Stage 3 - Service Description".
- [8] 3GPP TS 23.153: "Out of Band Transcoder Control - Stage 2".
- [9] 3GPP TS 24.008: "Mobile radio interface layer 3 specifications, Core Network Protocols"
- [10] 3GPP TS 26.190: "AMR Wideband Speech Codec; Speech Transcoding Functions".
- [11] 3GPP TS 26.193: "AMR Wideband Speech Codec; Source Controlled Rate Operation".
- [12] 3GPP TS 26.201: "Mandatory Speech Codec Speech Processing Functions; AMR Wideband Speech Codec Frame Structure".
- [13] 3GPP TS 23.172: "CS multimedia service UDI/RDI fallback and service modification; Stage 2".
- [14] 3GPP TS 23.231: "SIP-I based circuit-switched core network; Stage 2".