

3GPP TS 26.177 V11.0.0 (2012-09)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Speech Enabled Services (SES);
Distributed Speech Recognition (DSR) extended advanced
front-end test sequences
(Release 11)**



The present document has been developed within the 3rd 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, UMTS, codec, testing, LTE

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.

© 2012, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TTA, TTC).
All rights reserved.

UMTS™ is a Trade Mark of ETSI registered for the benefit of its members
3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners
LTE™ is a Trade Mark of ETSI currently being registered for the benefit of its Members and of the 3GPP Organizational Partners
GSM® and the GSM logo are registered and owned by the GSM Association

Contents

Foreword	4
1 Scope	5
2 References.....	5
3 Abbreviations	5
4 General.....	6
5 Test sequence format.....	6
5.1 File format	6
6 DSR test sequences.....	6
Annex A (informative): Change history.....	7

Foreword

This Technical Specification (TS) 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 specifies the digital test sequences for the DSR Extended Advanced Front-end speech codec. These sequences can be used to test for a bit exact implementation of the DSR Advanced Front-end codec and quantization (3GPP TS 26.243).

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 TS 26.243: "ANSI-C code for the Fixed-Point Distributed Speech Recognition Extended Advanced Front-end".
- [2] ETSI ES 202 050: "Speech Processing, Transmission and Quality Aspects (STQ); Distributed speech recognition; Advanced front-end feature extraction algorithm; Compression algorithms DSR advanced front end."
- [3] ETSI ES 202 212: "Speech Processing, Transmission and Quality Aspects (STQ); Distributed speech recognition; Extended advanced front-end feature extraction algorithm; Compression algorithms; Back-end speech reconstruction algorithm".
- [4] 3GPP TS 26.074: "AMR speech codec test sequences"
- [5] 3GPP TS 26.174: "Adaptive Multi-Rate (AMR) Wideband speech codec test sequences"

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AFE	Advanced Front-end
AMR	Adaptive Multi-Rate
AMR-NB	AMR Narrowband
AMR-WB	AMR Wideband
DSR	Distributed Speech Recognition
ETSI	European Telecommunications Standards Institute
GSM	Global System for Mobile communications
SES	Speech Enabled Services
VAD	Voice Activity Detector
X-AFE	eXtended Advanced Front-end

4 General

Digital test sequences are provided to test for a bit exact implementation of the Distributed Speech Recognition Extended Advanced Front-end (3GPP TS 26.243 [1]).

The test sequences may also be used to verify installations of the ANSI C code in 3GPP TS 26.243 [1].

Clause 5 describes the format of the files, which contain the digital test sequences.

5 Test sequence format

This clause provides information on the format of the digital test sequences for the DSR Extended Advanced Front-end (TS 26.243 [1]).

5.1 File format

The test sequence files in PC (little-endian) byte order are provided in archive files (ZIP format), which accompany the present document.

Following decompression, three types of file are provided:

- *.inp - Input to the speech encoder.
- *.cep – Cepstral output of the encoder, input to the quantizer.
- *.pitch – Pitch output of the encoder, input to the quantizer.
- *.class – Class output of the encoder, input to the quantizer.
- *.vad – VAD output of the encoder, input to the quantizer.
- *.bs – Output of the quantizer

Two test scripts are provided for exercising the Extended Advanced Front-end and quantizer functions.

All file formats are described in 3GPP TS 26.243 [1].

6 DSR test sequences

Forty-three encoder input sequences are provided, 22 with 8kHz sampling, 23 with 16kHz sampling.

8kHz sampling:

T00.INP - T21.INP as described in the AMR test sequences document TS 26.074 [4].

16kHz sampling:

T00.INP - T22.INP as described in the AMR WB test sequences document TS 26.174 [5].

Annex A (informative): Change history

Change history							
Date	TSG SA#	TSG Doc.	CR	Rev	Subject/Comment	Old	New
12-2004	26	SP-040833			Approved at TSG SA#26	1.0.0	6.0.0
06-2007	36				Version for Release 7	6.0.0	7.0.0
12-2008	42				Version for Release 8	7.0.0	8.0.0
12-2009	46				Version for Release 9	8.0.0	9.0.0
03-2011	51				Version for Release 10	9.0.0	10.0.0
09-2012	57				Version for Release 11	10.0.0	11.0.0