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Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Mandatory speech codec speech processing functions
Adaptive Multi-Rate (AMR) speech codec;
Source controlled rate operation
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Contents

Foreword

This Technical Specification has been produced by the 3GPP.

The present document describes the operation of the Adaptive Multi Rate speech codec during Source Controlled Rate (SCR) operation within the 3GPP system.

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1 Scope

This document describes the Source Controlled Rate (SCR)operation of the Adaptive Multi-Rate speech Codec in Codec Types UMTS_AMR and UMTS_AMR2 for the UMTS system. The implementation of this SCR operation is mandatory in all UMTS equipment.

The description is structured according to the block diagram in figure 1. This structure of distributing the various functions between system entities is not mandatory for implementation, as long as the operation on the speech decoder output remains the same.

Annex A describes the Discontinuous Transmission (DTX) operation of the Adaptive Multi-Rate speech Codec in Codec Types FR_AMR, HR_AMR and OHR_AMR for GERAN. This annex is the former GSM 06.93 (Release 98).

Annexes B to E describe the SCR operation of the Adaptive Multi-Rate speech Codec in Codec Types GSM_EFR, TDMA_EFR, TDMA_US1 and PDC_EFR for the UMTS system.

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.
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[1] 3GPP TS 26.071 : "AMR Speech Codec; General description".

[2] 3GPP TS 26.073 : "AMR Speech Codec; ANSI-C code".

[3] 3GPP TS 26.074 : "AMR Speech Codec; Test sequences".

[4] 3GPP TS 26.090 : "AMR Speech Codec; Transcoding functions".

[5] 3GPP TS 26.091 : "AMR Speech Codec; Error concealment of lost frames".

[6] 3GPP TS 26.092 : "AMR Speech Codec; Comfort noise aspects".

[7] 3GPP TS 26.094 : "AMR Speech Codec; Voice Activity Detector (VAD)".

[8] 3GPP TS 26.101 : “AMR Speech Codec; Frame structure".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purpose of this document, the following definitions apply.

frame: Time interval of 20 ms, corresponding to the time segmentation of the Adaptive Multi Rate speech Codec, also used as a short term for a traffic frame.

traffic frame: Block of 95..244 information bits transmitted on the speech traffic channels.

SID frame: Frame that conveys information about the acoustic background noise.

speech frame: Traffic frame that has been classified as SPEECH_GOOD or SPEECH_BAD frame.