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IEEE Standard for Advanced Mobile Speech and Audio

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IEEE Std 1857.5™-2015

IEEE Standard for Advanced Mobile Speech and Audio

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Abstract: A set of tools to support specific audio coding functions including ACELP/TVC compression, bandwidth extension, stereo coding, frame erasure concealment, etc. is defined in this standard. The tool set defined in this standard provides high quality and efficient coding tool sets for compression, decompression, processing, and representation of speech, music or mixed audio signals to save transmission bandwidth and storage space.

The target applications and services include but not limited to mobile communication, wireless broadband multimedia communications, internet broadband streaming media service and applications.

Keywords: ACELP, bandwidth extension, IEEE 1857.5™, mobile speech and audio, TVC, vector quantization

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Introduction

This introduction is not part of IEEE Std 1857.5-2015, IEEE Standard for Advanced Mobile Speech and Audio.

This standard provides regular high quality and efficient coding tool sets for compression, decompression, and packaging of the multimedia data to save bandwidth and storage usage.

Contents

IEEE Standard for Advanced Mobile Speech and Audio

1. Overview

1.1 Scope

This standard describes a set of speech and audio compression, decompression and packaging tools and mechanism. It is applicable to the following areas:

— Mobile communication

— Wireless broadband multimedia communication

— Internet broadband streaming media business

1.2 Purpose

This standard provides regular low-bit rate speech and audio-coding tool sets for wireless and mobile speech and audio compression and decompression. It provides error masking ability, supports stereo effect, supports wideband audio quality and saves bandwidth for wireless transmission and mobile communication and memory space for storage.

1.3 Audio-coding tools

In this standard, a set of audio coding tools are defined for encoding, transmitting and decoding of recorded speech, music, and other audio signals.

The coding standard describes the detailed mapping from input blocks of monophonic or stereophonic audio samples with sampling rates of 8 kHz, 16 kHz, 24 kHz, 32 kHz, 48 kHz, 11.025 kHz, 22.05 kHz, and 44.1 kHz in 16 bit uniform PCM format to encode blocks and from encoded blocks to output blocks of reconstructed monophonic or stereophonic audio samples. The available mono bitrates are from 10.4 kb/s to 24 kb/s and stereo bitrates are from 12.4 kb/s to 32 kb/s.

1.4 Document structure

The structure of this document is as follows: