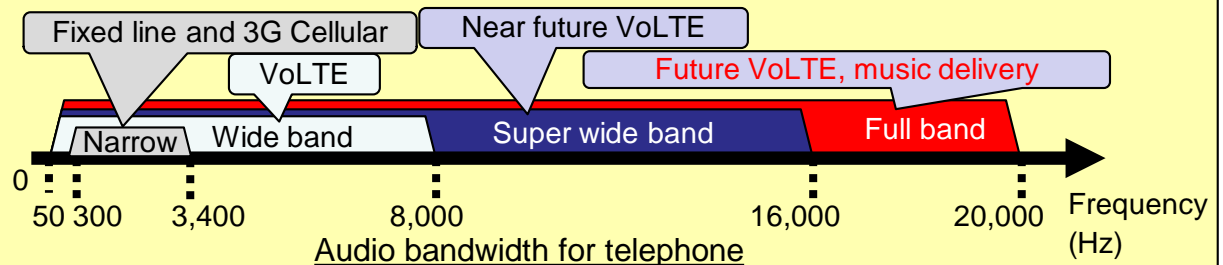


Abstract

Two of high compression speech and audio coding technologies are shown with real-time demonstration. Both are compliant with international standards which NTT Labs made technical contributions. Both are essential for making full use of radio wave bandwidth for cellular phones and broadcasting. One is low-bit-rate speech coding, 3GPP (3rd Generation Partnership Project) EVS (Enhanced Voice Services) which enhances audio bandwidth and audio quality for VoLTE (Voice over Long-Term Evolution). Enhanced VoLTE based on EVS will be available in the near future. The other is lossless audio coding, MPEG (Moving Picture Expert Group)-4 ALS (Audio Lossless) which can deliver identical waveform as in studio to home. High quality video on demand services or IPTV services based on the latest 4K video coding and ALS will be available in the near future.

For Cellular Phone (VoLTE*): 3GPP EVS**

- Low bit rate
- Low delay
- Interoperable to current VoLTE
- Full bandwidth (Up to 48 kHz sampling)
- High quality for music and noise

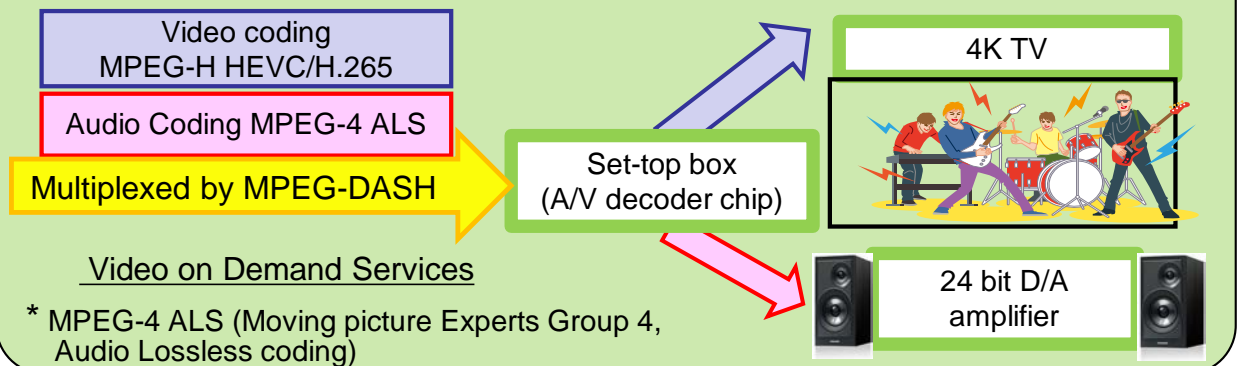


* VoLTE (Voice over Long Term Evolution)

** 3GPP EVS (3rd Generation Partnership Project Enhanced Voice Services)

For Broadcasting: MPEG-4 ALS*

- Lossless compression
- Defined for high quality audio services in 4K/8K (24bit amplitude, 48kHz sampling)



* MPEG-4 ALS (Moving picture Experts Group 4, Audio Lossless coding)

【Reference】

- [1] 3GPP Specifications: TS 26.445. "Codec for Enhanced Voice Services (EVS); Detailed algorithmic description," 2014.
- [2] N. Harada, T. Moriya, Y. Kamamoto, "MPEG-4 ALS: Performance, Application, and other related standardization activities," NTT Technical Review, Vol.5, No. 12, 2007.
- [3] Y. Kamamoto, T. Moriya, N. Harada, C. Kos, "Enhancement of MPEG-4 ALS lossless audio coding," NTT Technical Review Vol.5, No. 12, 2007.

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