

18

On-time sound delivery by high-quality telephones

- CLEAR: Low-delay near-lossless codec for audio transmission -

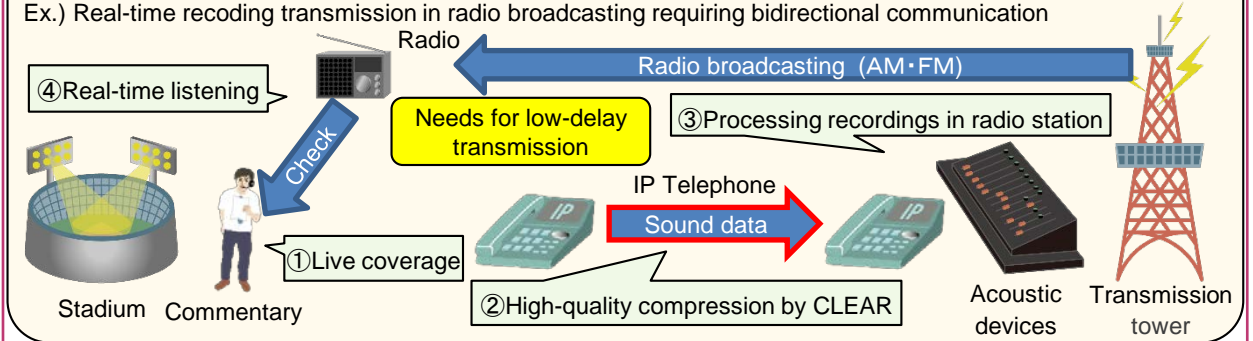
Abstract

A new audio coding scheme, Conditionally Lossless Encoding under Allowed Rates (CLEAR), is presented here. It is designed for fully utilizing the NTT's low-delay, high-reliability, and low-cost networks, compressing audio signals **losslessly as possible** within the networks' limitations of bit rate and delay. Based on the three new low-delay compression techniques, CLEAR enables real-time transmission of high quality speech and audio through Internet Protocol (IP) telephones, for example, in radio broadcasting. The near-lossless compression of CLEAR is expected to make the transmitted signals easier to mix or process compared to the signals degraded by the conventional compression. NTT labs. aim at enhancing the value of the network services by offering core techniques for speech and audio transmission which brings high presence.

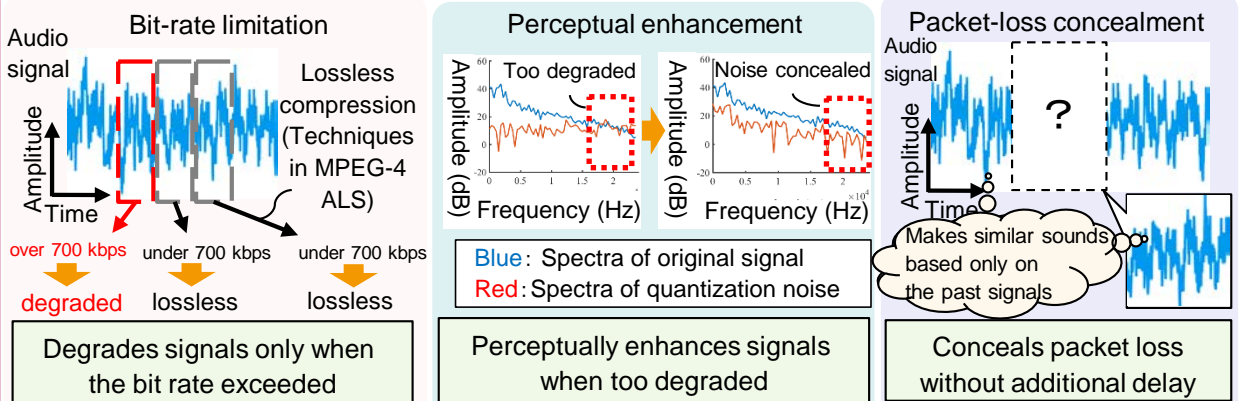
CLEAR (Conditionally Lossless Encoding under Allowed Rates)

- Low delay and high sound quality (16-bit depth, 48-kHz sampling rate, stereo, 700 kbps, 1.3-ms algorithmic delay)
- Compressing audio signals **losslessly as possible** within the designated bit rate

Ex.) Real-time recoding transmission in radio broadcasting requiring bidirectional communication



Three base techniques of CLEAR



※CLEAR has been developed through a collaborative research with NTT Service Evolution (EV) Labs.

Reference

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