Claims

1. A decoding apparatus comprising:

a selector configured to select, based on a parameter from a bitstream including at least one of an encoded audio signal and an encoded speech signal, one of a first decoding module and a second decoding module;

the first decoding module, implemented by a processor, configured to decode the bitstream, without inter-frame prediction, for reconstruction of audio or speech; and

the second decoding module configured to decode the bitstream, with inter-frame prediction, for reconstruction of audio or speech,

wherein the first decoding module comprises a trellis-structured de-quantizer with block constraints and an intra-frame predictor,

wherein both the first decoding module and the second decoding module are configured to perform decoding by using an identical number of bits per frame, and

wherein both the first decoding module and the second decoding module are configured to perform decoding of the bitstream which is obtained based on a voiced coding mode from among a plurality of coding modes.

2. The apparatus of claim 1, wherein the second decoding module comprises a trellis-structured de-quantizer with block constraints, an intra-frame predictor and an inter-frame predictor.

3. A decoding apparatus comprising:

a selector configured to select, based on a parameter from a bitstream including at least one of an encoded audio signal and an encoded speech signal, one of a first decoding module and a second decoding module;

the first decoding module, implemented by a processor, configured to decode the bitstream, without inter-frame prediction, for reconstruction of audio or speech; and

the second decoding module configured to decode the bitstream, with inter-frame prediction, for reconstruction of audio or speech,

wherein the first decoding module comprises a trellis-structured de-quantizer with block constraints, an intra-frame predictor and a vector de-quantizer,

wherein both the first decoding module and the second decoding module are configured to perform decoding by using an identical number of bits per frame, and

wherein both the first decoding module and the second decoding module are configured to perform decoding of the bitstream which is obtained based on a voiced coding mode from among a plurality of coding modes.

4. The apparatus of claim 3, wherein the second decoding module comprises a trellis-structured de-quantizer with block constraints, an intra-frame predictor, an inter-frame predictor and a vector de-quantizer.