Claims:

1. A method of decoding a coded video bitstream implemented by a video decoder, the method comprising:

obtaining a reference picture list structure for a current slice represented in the coded video bitstream, wherein the reference picture list structure contains the number of entries;

constructing a reference picture list for the current slice based on the reference picture list structure such that the number of entries in the reference picture list is the same as the number of entries in the reference picture list structure, wherein the reference picture list contains a plurality of active entries and a plurality of inactive entries; and

obtaining, based on at least one active entry from the plurality of active entries in the reference picture list, at least one reconstructed block of the current slice;

wherein the reference picture list structure is present in an SPS or in a slice header, and wherein if the reference picture list structure is present in a slice header, the reference picture list structure specifies a reference picture list index of the current picture, otherwise, the reference picture list structure specifies a candidate for a reference picture list index.

2. The method of claim 1, wherein an order of entries in the reference picture list structure is the same as an order of corresponding reference pictures in the reference picture list, wherein each entry in the reference picture list structure describes a corresponding reference picture in the reference picture list.

3. The method of claim 1 or 2, wherein the reference picture list for the current slice is constructed without using a reference picture list initialization process or a reference picture list modification process.

4. The method of any of one of claims 1 to 3, wherein the at least one reconstructed block is used to generate an image displayed on a display of an electronic device.

5. The method of any of one of claims 1 to 4, wherein the reference picture list comprises a list of reference pictures used for inter prediction of the at least one reconstructed block.

6. The method of any of one of claims 1 to 5, wherein the current slice is a P slice or for a B slice.

7. A method of encoding a coded video bitstream implemented by a video encoder, the method comprising:

constructing a reference picture list for the current slice, wherein the reference picture list contains a plurality of active entries and a plurality of inactive entries; and

obtaining, based on at least one active entry from the plurality of active entries in the reference picture list, at least one reconstructed block of the current slice;

encoding a reference picture list structure for the current slice into the coded video bitstream, wherein the reference picture list structure contains the number of entries used to derive the entries in the reference picture list, and the number of entries in the reference picture list is the same as the number of entries in the reference picture list structure;

wherein the reference picture list structure is present in an SPS or in a slice header, and wherein if the reference picture list structure is present in a slice header, the reference picture list structure specifies a reference picture list index of the current picture, otherwise, the reference picture list structure specifies a candidate for a reference picture list index.

8. The method of claim 7, wherein an order of entries in the reference picture list structure is the same as an order of corresponding reference pictures in the reference picture list, wherein each entry in the reference picture list structure describes a corresponding reference picture in the reference picture list.

9. An encoding device, comprising:

a memory coupled to the receiver, the memory storing instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to cause the processor to:

construct a reference picture list for the current slice, wherein the reference picture list contains a plurality of active entries and a plurality of inactive entries; and

obtain, based on at least one active entry from the plurality of active entries in the reference picture list, at least one reconstructed block of the current slice;

encode a reference picture list structure for the current slice into the coded video bitstream, wherein the reference picture list structure contains the number of entries used to derive the entries in the reference picture list, and the number of entries in the reference picture list is the same as the number of entries in the reference picture list structure;

wherein the reference picture list structure is present in an SPS or in a slice header, and wherein if the reference picture list structure is present in a slice header, the reference picture list structure specifies a reference picture list index of the current picture, otherwise, the reference picture list structure specifies a candidate for a reference picture list index.

10. A decoding device, comprising:

a receiver configured to receive a coded video bitstream;

a memory coupled to the receiver, the memory storing instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to cause the processor to:

obtain a reference picture list structure for a current slice represented in the coded video bitstream, wherein the reference picture list structure contains the number of entries;

construct a reference picture list for the current slice based on the reference picture list structure such that the number of entries in the reference picture list is the same as the number of entries in the reference picture list structure, wherein the reference picture list contains a number of active entries and a number of inactive entries; and

obtain, based on at least one active entry of the reference picture list, at least one reconstructed block of the current slice;

wherein the reference picture list structure is present in an SPS or in a slice header, and wherein if the reference picture list structure is present in a slice header, the reference picture list structure specifies a reference picture list index of the current picture, otherwise, the reference picture list structure specifies a candidate for a reference picture list index.

11. The decoding device of claim 10, further comprising a display configured to display an image based on the at least one reconstructed block.

12. A system, comprising:

an encoder, wherein the encoder includes the encoding device or the coding apparatus of claim 9; and

a decoder in communication with the encoder, wherein the decoder includes the decoding device or the coding apparatus of claim 10.

13. A means for coding, comprising:

receiving means configured to receive a bitstream to decode;

transmission means coupled to the receiving means, the transmission means configured to transmit a decoded image to a display means;

storage means coupled to at least one of the receiving means or the transmission means, the storage means configured to store instructions; and

processing means coupled to the storage means, the processing means configured to execute the instructions stored in the storage means to perform the method in any one of claims 1 to 8.

14. An encoder comprising processing circuitry for carrying out the method according to claim 7 or 8.

15. A decoder comprising processing circuitry for carrying out the method according to any one of claims 1 to 6.

16. A computer program product comprising program code for performing the method according to any one of claims 1 to 6 when executed on a computer or a processor.

17. A computer program product comprising program code for performing the method according to claim 7 or 8 when executed on a computer or a processor.

18. A non-transitory computer-readable medium carrying a program code which, when executed by a computer device, causes the computer device to perform the method of any one of claims 1 to 6.

19. A non-transitory computer-readable medium carrying a program code which, when executed by a computer device, causes the computer device to perform the method of claim 7 or 8.

20. A non-transitory storage medium which includes an encoded bitstream, the bitstream being generated by a method according to claim 7 or 8.

CLAIMS

What is claimed is:

1. A method of decoding a coded video bitstream implemented by a video decoder, the method comprising:

obtaining a reference picture list structure for a current slice represented in the coded video bitstream;

constructing a reference picture list for the current slice based on the reference picture list structure such that a number of entries in the reference picture list and an order of the entries in the reference picture list are both the same as in the reference picture list structure, wherein the reference picture list contains a plurality of active entries and a plurality of inactive entries; and

obtaining, based on at least one active entry from the plurality of active entries in the reference picture list, at least one reconstructed block of the current slice.

2. The method of claim 1, wherein an order of entries in the reference picture list structure is the same as an order of corresponding reference pictures in the reference picture list.

3. The method of any of claims 1 to 2, wherein the order is from zero to an indicated value.

4. The method of claim 3, wherein the indicated value is from zero to a value indicated by sps_max_dec_pic_buffering_minus1.

5. The method of any of claims 1 to 4, wherein the reference picture list for the current slice is constructed without using a reference picture list initialization process or a reference picture list modification process.

6. The method of any of claims 1 to 5, wherein the reference picture list is designated RefPictList[0].

7. The method of any of claims 1 to 5, wherein the reference picture list is designated RefPictList[1].

8. The method of any of claims 1 to 7, wherein the at least one reconstructed block is used to generate an image displayed on a display of an electronic device.

9. The method of any of claims 1 to 8, wherein the reference picture list comprises a list of reference pictures used for inter prediction.

10. The method of any of claims 1 to 9, wherein the inter prediction is for a P slice or for a B slice.

11. The method of any of claims 1 to 10, wherein the slice header contains a reference picture list sequence parameter set (SPS) flag designated ref_pic_list_sps_flag[i].

12. The method of any of claims 1 to 11, wherein the slice header contains a number reference index active override flag designated by num_ref_idx_active_override_flag.

13. The method of any of claims 8 to 12, wherein the reference picture list is designated RefPictList[0] or RefPictList[1], and an order of entries in the reference picture list structure is the same as an order of corresponding reference pictures in the reference picture list.

14. A decoding device, comprising:

a receiver configured to receive a coded video bitstream;

a memory coupled to the receiver, the memory storing instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to cause the processor to:

obtain a reference picture list structure for a current slice represented in the coded video bitstream;

construct a reference picture list for the current slice based on the reference picture list structure such that a number of entries in the reference picture list and an order of the entries in the reference picture list are both the same as in the reference picture list structure, wherein the reference picture list contains a number of active entries and a number of inactive entries; and

obtain, based on at least one active entry of the reference picture list, at least one reconstructed block of the current slice.

15. The decoding device of claim 14, further comprising a display configured to display an image based on the at least one reconstructed block.

16. A coding apparatus, comprising:

a receiver configured to receive a bitstream to decode;

a transmitter coupled to the receiver, the transmitter configured to transmit a decoded image to a display;

a memory coupled to at least one of the receiver or the transmitter, the memory configured to store instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to perform the method in any of claims 1 to 13.

17. A system, comprising:

an encoder; and

a decoder in communication with the encoder, wherein the decoder includes the decoding device or the coding apparatus of any of claims 14 to 16.

18. A means for coding, comprising:

receiving means configured to receive a bitstream to decode;

transmission means coupled to the receiving means, the transmission means configured to transmit a decoded image to a display means;

storage means coupled to at least one of the receiving means or the transmission means, the storage means configured to store instructions; and

processing means coupled to the storage means, the processing means configured to execute the instructions stored in the storage means to perform the method in any of claims 1 to 13.