Amended Set of Claims 1 to 27

1. A method of decoding video data, the method comprising:

receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

identifying the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

using motion information of the two different neighboring video blocks to decode the current video block.

2. The method of claim 1, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

3. The method of claim 2, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

4. The method of claim 1, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the CU is defined relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, the method further comprising:

receiving LCU syntax data that defines the quadtree partitioning scheme; and

receiving mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

5. The method of claim 1, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

6. A method of encoding video data, the method comprising:

selecting a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in the uni- predictive modes; and

upon selecting the third candidate:

identifying the two different neighboring video blocks coded in the uni-predictive modes;

using motion information of the two different neighboring video blocks to encode the current video block; and

generating one or more syntax elements that identify the two different neighboring video blocks that are coded in uni- predictive modes to a video decoder.

7. The method of claim 6, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

8. The method of claim 7, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

9. The method of claim 6, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, the method further comprising:

defining the CU relative to a largest coding unit (LCU) according to a quadtree partitioning scheme;

generating an LCU syntax data that defines the quadtree partitioning scheme; and

generating mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

10. The method of claim 6, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

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11. A video decoding device that decodes video data, the video decoding device comprising:

a video decoder configured to:

receive one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

identify the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

use motion information of the two different neighboring video blocks to decode the current video block.

12. The video decoding device of claim 11, wherein the video decoder includes:

an entropy decoding unit configured to receive and decode the one or more syntax elements; and

a prediction unit configured to identify the two different neighboring video blocks, and use the motion information of the two different neighboring video blocks to decode the current video block.

13. The video decoding device of claim 11, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

14. The video decoding device of claim 13, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

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15. The video decoding device of claim 11, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the CU is defined relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, wherein the decoder:

receives LCU syntax data that defines the quadtree partitioning scheme; and

receives mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

16. The video decoding device of claim 11, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

17. The video decoding device of claim 11, wherein the video decoding device comprises one or more of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes a video encoder.

18. A video encoding device comprising:

a video encode configured to:

select a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

identify the two different neighboring video blocks coded in the uni-predictive modes;

uses motion information of the two different neighboring video blocks to encode the current video block; and

generates one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.

19. The video encoding device of claim 18, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

20. The video encoding device of claim 19, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

21. The video encoding device of claim 18, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the video encoder includes:

a quadtree partition unit configured to define the CU relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, and generate an LCU syntax data that defines the quadtree partitioning scheme; and

a prediction unit configured to generate mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

22. The video encoding device of claim 18, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

23. The video encoding device of claim 18, wherein the video encoding device comprises one or more of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes a video encoder.

24. A device for decoding video data, the device comprising:

means for receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

means for identifying two the different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

means for using motion information of the two different neighboring video blocks to decode the current video block.

25. A device for encoding video data, the device comprising:

means for selecting a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

means for identifying the two different neighboring video blocks coded in the uni-predictive modes;

means for using motion information of the two different neighboring video blocks to encode the current video block; and

means for generating one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.

26. A computer-readable medium comprising instructions that upon execution cause a processor to decode video data, wherein the instructions cause the processor to:

upon receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes,

when the one or more syntax elements define the third candidate,

identify the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

use motion information of the two different neighboring video blocks to decode the current video block.

27. A computer-readable medium comprising instructions that upon execution cause a processor to encode video data, wherein the instructions cause the processor to:

select a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

identify the two different neighboring video blocks coded in the uni-predictive modes;

use motion information of the two different neighboring video blocks to encode the current video block; and

generate one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.

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CLAIMS

1. A method of decoding video data, the method comprising:

receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

identifying the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

using motion information of the two different neighboring video blocks to decode the current video block.

2. The method of claim 1, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

3. The method of claim 2, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

4. The method of claim 1, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the CU is defined relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, the method further comprising:

receiving LCU syntax data that defines the quadtree partitioning scheme; and

receiving mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

5. The method of claim 1, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

6. A method of encoding video data, the method comprising:

selecting a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in the uni- predictive modes; and

upon selecting the third candidate:

identifying the two different neighboring video blocks coded in the uni-predictive modes;

using motion information of the two different neighboring video blocks to encode the current video block; and

generating one or more syntax elements that identify the two different neighboring video blocks that are coded in uni- predictive modes to a video decoder.

7. The method of claim 6, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

8. The method of claim 7, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

9. The method of claim 6, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, the method further comprising:

defining the CU relative to a largest coding unit (LCU) according to a quadtree partitioning scheme;

generating an LCU syntax data that defines the quadtree partitioning scheme; and

generating mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

10. The method of claim 6, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

11. A video decoding device that decodes video data, the video decoding device comprising:

a video decoder configured to:

receive one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

identify the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

use motion information of the two different neighboring video blocks to decode the current video block.

12. The video decoding device of claim 11, wherein the video decoder includes:

an entropy decoding unit configured to receive and decode the one or more syntax elements; and

a prediction unit configured to identify the two different neighboring video blocks, and use the motion information of the two different neighboring video blocks to decode the current video block.

13. The video decoding device of claim 11, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

14. The video decoding device of claim 13, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

15. The video decoding device of claim 11, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the CU is defined relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, wherein the decoder:

receives LCU syntax data that defines the quadtree partitioning scheme; and

receives mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

16. The video decoding device of claim 11, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

17. The video decoding device of claim 11, wherein the video decoding device comprises one or more of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes a video encoder.

18. A video encoding device comprising:

a video encode configured to:

select a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a

third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

identify the two different neighboring video blocks coded in the uni-predictive modes;

uses motion information of the two different neighboring video blocks to encode the current video block; and

generates one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.

19. The video encoding device of claim 18, wherein the motion information comprises two different uni-predictive motion vectors associated with the two different neighboring video blocks.

20. The video encoding device of claim 19, wherein the motion information further comprises at least two values associated with the two different uni-predictive motion vectors, wherein the values identify one or more lists of predictive data associated with the two different uni-predictive motion vectors.

21. The video encoding device of claim 18, wherein the current video block comprises a coding unit (CU) defined according to a high efficiency video coding (HEVC) standard, wherein the video encoder includes:

a quadtree partition unit configured to define the CU relative to a largest coding unit (LCU) according to a quadtree partitioning scheme, and generate an LCU syntax data that defines the quadtree partitioning scheme; and

a prediction unit configured to generate mode information for the CU that defines the bi-predictive merge mode candidate, wherein the one or more syntax elements are included in the mode information for the CU.

22. The video encoding device of claim 18, wherein the current video block comprises a prediction unit (PU) of a coding unit (CU) that is defined according to a high efficiency video coding (HEVC) standard.

23. The video encoding device of claim 18, wherein the video encoding device comprises one or more of:

an integrated circuit;

a microprocessor; and

a wireless communication device that includes a video encoder.

24. A device for decoding video data, the device comprising:

means for receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

when the one or more syntax elements define the third candidate,

means for identifying two the different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

means for using motion information of the two different neighboring video blocks to decode the current video block.

25. A device for encoding video data, the device comprising:

means for selecting a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

means for identifying the two different neighboring video blocks coded in the uni-predictive modes;

means for using motion information of the two different neighboring video blocks to encode the current video block; and

means for generating one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.

26. A computer-readable medium comprising instructions that upon execution cause a processor to decode video data, wherein the instructions cause the processor to:

upon receiving one or more syntax elements for a current video block, wherein the one or more syntax elements define one or more merge mode candidates from a set of candidates to be used to code the current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes,

when the one or more syntax elements define the third candidate,

identify the two different neighboring video blocks coded in the uni-predictive modes based on the one or more syntax elements; and

use motion information of the two different neighboring video blocks to decode the current video block.

27. A computer-readable medium comprising instructions that upon execution cause a processor to encode video data, wherein the instructions cause the processor to:

select a candidate from a set of candidates for encoding a current video block according to a merge mode, wherein a first candidate in the set of candidates is a left candidate, a second candidate in the set of candidates is a temporal candidate, and a third candidate in the set of candidates is a bi-predictive merge mode candidate defined according to two different neighboring video blocks that are coded in uni- predictive modes; and

upon selecting the third candidate:

identify the two different neighboring video blocks coded in the uni-predictive modes;

use motion information of the two different neighboring video blocks to encode the current video block; and

generate one or more syntax elements that identify the two different neighboring video blocks that are coded in the uni- predictive modes to a video decoder.