Amended Set of Claims 1 to 36

1. A method of coding video data comprising:

determining a merge candidate set for a current prediction unit of a current coding unit, wherein the merge candidate set is determined without comparing motion information of a merge candidate in the merge candidate set to motion information of any other prediction units;

excluding merge candidates from the merge candidate set that are within another prediction unit of the current coding unit; and

performing a merge motion vector prediction process for the current prediction unit using the merge candidate set.

2. The method of claim 1, wherein excluding merge candidates comprises excluding merge candidates from the merge candidate set that are within another prediction unit for the current coding unit for all partition modes other than an NxN partition mode.

3. The method of claim 2, further comprising:

not excluding merge candidates from prediction units from the coding unit having the NxN partition mode.

4. The method of claim 1, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate.

5. The method of claim 4, wherein the current coding unit has a 2NxN, a 2NxnU or a 2NxnD partition type, including a prediction unit 0 positioned above a prediction unit 1, and wherein excluding merge candidates from the merge candidate set comprises excluding the above merge candidate from the merge candidate set for prediction unit 1.

6. The method of claim 4, wherein the current coding unit has an Nx2N, an nLx2N or an nRx2N partition type, including a prediction unit 0 positioned to the left of a prediction unit 1, and wherein excluding merge candidates from the merge candidate set

05.02.2013 21:46:40 - 05.02.2013 21:51:54. This page 21 of
Received at the EPO on Feb 05, 2013 21:51:54. Page 21 of 28

comprises excluding the left merge candidate from the merge candidate set for prediction unit 1.

7. The method of claim 1, wherein the current coding unit has an NxN partition type, including a prediction unit 0 positioned in a top left portion of the current coding unit, a prediction unit 1 positioned in a top right portion of the current coding unit, a prediction unit 2 positioned in a bottom left portion of the current coding unit, and a prediction unit 3 positioned in a bottom right portion of the current coding unit,

wherein excluding merge candidates from the merge candidate set comprises excluding the left merge candidate and the below left merge candidate from the merge candidate set for prediction unit 1,

wherein excluding merge candidates from the merge candidate set comprises excluding the above merge candidate and the right above merge candidate from the merge candidate set for prediction unit 2, and

wherein excluding merge candidates from the merge candidate set comprises excluding the above merge candidate, the left merge candidate, and the left above merge candidate from the merge candidate set for prediction unit 3.

8. The method of claim 1, wherein coding video comprises decoding video, and wherein the method further comprises:

receiving a syntax element indicating a selected merge candidate for the current prediction unit;

performing the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

decoding the current prediction unit using the determined motion vector.

9. The method of claim 1, wherein coding video comprises encoding video, and wherein the method further comprises:

performing the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

signaling a syntax element indicating the selected merge candidate in an encoded video bitstream.

10. An apparatus configured to code video data comprising:

a video coder configured to:

determine a merge candidate set for a current prediction unit of a current coding unit, wherein the merge candidate set is determined without comparing motion information of a merge candidate in the merge candidate set to motion information of any other prediction units;

exclude merge candidates from the merge candidate set that are within another prediction unit of the current coding unit; and

perform a merge motion vector prediction process for the current prediction unit using the merge candidate set.

11. The apparatus of claim 10, wherein the video coder is further configured to:

exclude merge candidates from the merge candidate set that are within another prediction unit for the current coding unit for all partition modes other than an NxN partition mode.

12. The apparatus of claim 11, wherein the video coder is further configured to:

not exclude merge candidates from prediction units from the coding unit having the NxN partition mode.

13. The apparatus of claim 10, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate.

14. The apparatus of claim 13, wherein the current coding unit has a 2NxN, a 2NxnU or a 2NxnD partition type, including a prediction unit 0 positioned above a prediction unit 1, and wherein the video coder is further configured to exclude the above merge candidate from the merge candidate set for prediction unit 1.

15. The apparatus of claim 13, wherein the current coding unit has an Nx2N, an nLx2N or an nRx2N partition type, including a prediction unit 0 positioned to the left of a prediction unit 1, and wherein the video coder is further configured to exclude the left merge candidate from the merge candidate set for prediction unit 1.

16. The apparatus of claim 13, wherein the current coding unit has an NxN partition type, including a prediction unit 0 positioned in a top left portion of the current coding unit, a prediction unit 1 positioned in a top right portion of the current coding unit, a prediction unit 2 positioned in a bottom left portion of the current coding unit, and a prediction unit 3 positioned in a bottom right portion of the current coding unit,

wherein the video coder is further configured to exclude the left merge candidate and the below left merge candidate from the merge candidate set for prediction unit 1,

wherein the video coder is further configured to exclude the above merge candidate and the right above merge candidate from the merge candidate set for prediction unit 2, and

wherein the video coder is further configured to exclude the above merge candidate, the left merge candidate, and the left above merge candidate from the merge candidate set for prediction unit 3.

17. The apparatus of claim 10, wherein the video coder is a video decoder, and wherein the video decoder is further configured to:

receive a syntax element indicating a selected merge candidate for the current prediction unit;

perform the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

decode the current prediction unit using the determined motion vector.

18. The apparatus of claim 10, wherein the video coder is a video encoder, and wherein the video encoder is further configured to:

perform the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

signal a syntax element indicating the selected merge candidate in an encoded video bitstream.

19. The apparatus of claim 10, wherein the video coder is part of a mobile device.

20. An apparatus configured to code video data comprising:

means for determining a merge candidate set for a current prediction unit of a current coding unit, wherein the merge candidate set is determined without comparing motion information of a merge candidate in the merge candidate set to motion information of any other prediction units;

means for excluding merge candidates from the merge candidate set that are within another prediction unit of the current coding unit; and

means for performing a merge motion vector prediction process for the current prediction unit using the merge candidate set.

21. The apparatus of claim 20, wherein the means for excluding merge candidates comprises means for excluding merge candidates from the merge candidate set that are within another prediction unit for the current coding unit for all partition modes other than an NxN partition mode.

22. The apparatus of claim 20, further comprising:

means for not excluding merge candidates from prediction units from the coding unit having the NxN partition mode.

23. The apparatus of claim 20, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate.

24. The apparatus of claim 23, wherein the current coding unit has a 2NxN, a 2NxnU or a 2NxnD partition type, including a prediction unit 0 positioned above a prediction unit 1, and wherein the means for excluding merge candidates from the merge candidate set comprises means for excluding the above merge candidate from the merge candidate set for prediction unit 1.

25. The apparatus of claim 23, wherein the current coding unit has an Nx2N, an nLx2N or an nRx2N partition type, including a prediction unit 0 positioned to the left of a prediction unit 1, and wherein the means for excluding merge candidates from the merge candidate set comprises means for excluding the left merge candidate from the merge candidate set for prediction unit 1.

26. The apparatus of claim 23, wherein the current coding unit has an NxN partition type, including a prediction unit 0 positioned in a top left portion of the current coding unit, a prediction unit 1 positioned in a top right portion of the current coding unit, a prediction unit 2 positioned in a bottom left portion of the current coding unit, and a prediction unit 3 positioned in a bottom right portion of the current coding unit,

wherein the means for excluding merge candidates from the merge candidate set comprises means for excluding the left merge candidate and the below left merge candidate from the merge candidate set for prediction unit 1,

wherein the means for excluding merge candidates from the merge candidate set comprises means for excluding the above merge candidate and the right above merge candidate from the merge candidate set for prediction unit 2, and

wherein the means for excluding merge candidates from the merge candidate set comprises means for excluding the above merge candidate, the left merge candidate, and the left above merge candidate from the merge candidate set for prediction unit 3.

27. The apparatus of claim 20, wherein the apparatus is configured to decode video, and wherein the apparatus further comprises:

means for receiving a syntax element indicating a selected merge candidate for the current prediction unit;

means for performing the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

means for decoding the current prediction unit using the determined motion vector.

28. The apparatus of claim 20, wherein the apparatus is configured to encode video, and wherein the apparatus further comprises:

means for performing the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

means for signaling a syntax element indicating the selected merge candidate in an encoded video bitstream.

on: 05.02.2013 21:46:40 - 05.02.2013 21:51:54. This page 26 of AMENDED SHEET 2013 21:51:33
ceived at the EPO on Feb 05, 2013 21:51:54. Page 26 of 28
05/02/2013

29. The apparatus of claim 20, wherein the apparatus is part of a mobile device.

30. A computer-readable storage medium having stored thereon instructions that when executed cause one or more processors configured to code video data to:

determine a merge candidate set for a current prediction unit of a current coding unit, wherein the merge candidate set is determined without comparing motion information of a merge candidate in the merge candidate set to motion information of any other prediction units;

exclude merge candidates from the merge candidate set that are within another prediction unit of the current coding unit; and

perform a merge motion vector prediction process for the current prediction unit using the merge candidate set.

31. The computer-readable storage medium of claim 30, wherein the instructions further cause the one or more processors to:

exclude merge candidates from the merge candidate set that are within another prediction unit for the current coding unit for all partition modes other than an NxN partition mode.

32. The computer-readable storage medium of claim 31, wherein the instructions further cause the one or more processors to:

not exclude merge candidates from prediction units from the coding unit having the NxN partition mode.

33. The computer-readable storage medium of claim 30, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate.

34. The computer-readable storage medium of claim 33, wherein the current coding unit has a 2NxN, a 2NxnU or a 2NxnD partition type, including a prediction unit 0 positioned above a prediction unit 1, and wherein the instructions further cause the one or more processors to exclude the above merge candidate from the merge candidate set for prediction unit 1.

35. The computer-readable storage medium of claim 33, wherein the current coding unit has an Nx2N, an nLx2N or an nRx2N partition type, including a prediction unit 0 positioned to the left of a prediction unit 1, and wherein the instructions further cause the one or more processors to exclude the left merge candidate from the merge candidate set for prediction unit 1.

36. The computer-readable storage medium of claim 33, wherein the current coding unit has an NxN partition type, including a prediction unit 0 positioned in a top left portion of the current coding unit, a prediction unit 1 positioned in a top right portion of the current coding unit, a prediction unit 2 positioned in a bottom left portion of the current coding unit, and a prediction unit 3 positioned in a bottom right portion of the current coding unit,

wherein the instructions further cause the one or more processors to exclude the left merge candidate and the below left merge candidate from the merge candidate set for prediction unit 1, wherein the instructions further cause the one or more processors to exclude the above merge candidate and the right above merge candidate from the merge candidate set for prediction unit 2, and

wherein the instructions further cause the one or more processors to exclude the above merge candidate, the left merge candidate, and the left above merge candidate from the merge candidate set for prediction unit 3.

CLAIMS

1. A method of coding video data comprising:

determining a merge candidate set for a current non-square prediction unit of a current coding unit, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate;

removing, from the merge candidate set, merge candidates that are within another prediction unit of the current coding unit based on the spatial locations of the merge candidates without comparing motion information of a respective merge candidate in the merge candidate set to motion information of any other prediction units; and

performing a merge motion vector prediction process for the current prediction unit using the merge candidate set.

2. The method of claim **1**, wherein the current coding unit has a 2N×N, a 2N×nU or a 2N×nD partition type, including a prediction unit **0** positioned above a prediction unit **1**, and wherein removing merge candidates from the merge candidate set comprises removing the above merge candidate from the merge candidate set for prediction unit **1**.

3. The method of claim **1**, wherein the current coding unit has an N×2N, an nL×2N or an nR×2N partition type, including a prediction unit **0** positioned to the left of a prediction unit **1**, and wherein removing merge candidates from the merge candidate set comprises removing the left merge candidate from the merge candidate set for prediction unit **1**.

4. The method of claim **1**, wherein coding video comprises decoding video, and wherein the method further comprises:

receiving a syntax element indicating a selected merge candidate for the current prediction unit;

performing the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

decoding the current prediction unit using the determined motion vector.

5. The method of claim **1**, wherein coding video comprises encoding video, and wherein the method further comprises:

performing the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

signaling a syntax element indicating the selected merge candidate in an encoded video bitstream.

6. An apparatus configured to code video data comprising:

a memory configured to store the video data; and

a video coder configured to:

determine a merge candidate set for a current non-square prediction unit of a current coding unit of the video data, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate;

remove, from the merge candidate set, merge candidates that are within another prediction unit of the current coding unit based on the spatial locations of the merge candidates without comparing motion information of a respective merge candidate in the merge candidate set to motion information of any other prediction units; and

perform a merge motion vector prediction process for the current prediction unit using the merge candidate set.

7. The apparatus of claim **6**, wherein the current coding unit has a 2N×N, a 2N×nU or a 2N×nD partition type, including a prediction unit **0** positioned above a prediction unit **1**, and wherein the video coder is further configured to remove the above merge candidate from the merge candidate set for prediction unit **1**.

8. The apparatus of claim **6**, wherein the current coding unit has an N×2N, an nL×2N or an nR×2N partition type, including a prediction unit **0** positioned to the left of a prediction unit **1**, and wherein the video coder is further configured to remove the left merge candidate from the merge candidate set for prediction unit **1**.

9. The apparatus of claim **6**, wherein the video coder is a video decoder, and wherein the video decoder is further configured to:

receive a syntax element indicating a selected merge candidate for the current prediction unit;

perform the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

decode the current prediction unit using the determined motion vector.

10. The apparatus of claim **6**, wherein the video coder is a video encoder, and wherein the video encoder is further configured to:

perform the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

signal a syntax element indicating the selected merge candidate in an encoded video bitstream.

11. The apparatus of claim **6**, wherein the video coder is part of a mobile device, and wherein the apparatus further comprises one or more of a camera configured to capture a picture that includes the current prediction unit or a display configured to display the picture that includes the current prediction unit.

12. An apparatus configured to code video data comprising:

means for determining a merge candidate set for a current non-square prediction unit of a current coding unit, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate;

means for removing, from the merge candidate set, merge candidates that are within another prediction unit of the current coding unit based on the spatial locations of the merge candidates without comparing motion informa-

tion of a respective merge candidate in the merge candidate set to motion information of any other prediction units; and

means for performing a merge motion vector prediction process for the current prediction unit using the merge candidate set.

13. The apparatus of claim **12**, wherein the current coding unit has a 2N×N, a 2N×nU or a 2N×nD partition type, including a prediction unit **0** positioned above a prediction unit **1**, and wherein the means for removing merge candidates from the merge candidate set comprises means for removing the above merge candidate from the merge candidate set for prediction unit **1**.

14. The apparatus of claim **12**, wherein the current coding unit has an N×2N, an nL×2N or an nR×2N partition type, including a prediction unit **0** positioned to the left of a prediction unit **1**, and wherein the means for removing merge candidates from the merge candidate set comprises means for removing the left merge candidate from the merge candidate set for prediction unit **1**.

15. The apparatus of claim **12**, wherein the apparatus is configured to decode video, and wherein the apparatus further comprises:

means for receiving a syntax element indicating a selected merge candidate for the current prediction unit;

means for performing the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

means for decoding the current prediction unit using the determined motion vector.

16. The apparatus of claim **12**, wherein the apparatus is configured to encode video, and wherein the apparatus further comprises:

means for performing the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

means for signaling a syntax element indicating the selected merge candidate in an encoded video bitstream.

17. The apparatus of claim **12**, wherein the apparatus is part of a mobile device.

18. A non-transitory computer-readable storage medium having stored thereon instructions that when executed cause one or more processors configured to code video data to:

determine a merge candidate set for a current non-square prediction unit of a current coding unit, wherein the merge candidate set includes a left above merge candidate, an above merge candidate, a right above merge candidate, a left merge candidate, a below left merge candidate, and a temporal merge candidate;

remove, from the merge candidate set, merge candidates that are within another prediction unit of the current coding unit based on the spatial locations of the merge candidates without comparing motion information of a respective merge candidate in the merge candidate set to motion information of any other prediction units; and

perform a merge motion vector prediction process for the current prediction unit using the merge candidate set.

19. The non-transitory computer-readable storage medium of claim **18**, wherein the current coding unit has a 2N×N, a 2N×nU or a 2N×nD partition type, including a prediction unit **0** positioned above a prediction unit **1**, and wherein the instructions further cause the one or more processors to remove the above merge candidate from the merge candidate set for prediction unit **1**.

20. The non-transitory computer-readable storage medium of claim **18**, wherein the current coding unit has an N×2N, an nL×2N or an nR×2N partition type, including a prediction unit **0** positioned to the left of a prediction unit **1**, and wherein the instructions further cause the one or more processors to remove the left merge candidate from the merge candidate set for prediction unit **1**.

21. The non-transitory computer-readable storage medium of claim **18**, wherein the one or more processors are configured to decode video data, and wherein the instructions further cause the one or more processors to:

receive a syntax element indicating a selected merge candidate for the current prediction unit;

perform the merge motion vector prediction process for the current prediction unit using the merge candidate set and the received syntax element to determine a motion vector for the current prediction unit; and

decode the current prediction unit using the determined motion vector.

22. The non-transitory computer-readable storage medium of claim **18**, wherein the one or more processors are configured to encode video data, and wherein the instructions further cause the one or more processors to:

perform the motion vector prediction process for the current prediction unit using the merge candidate set to determine a selected merge candidate for the current prediction unit; and

signal a syntax element indicating the selected merge candidate in an encoded video bitstream.