Amended Set of Claims 1 to 49

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

determining a plurality of candidate motion vectors for a current block of the video data so as to perform a motion vector prediction process;

scaling one or more of the plurality of candidate motion vectors determined for the current block of the video data to generate one or more scaled candidate motion vectors;

modifying the scaled candidate motion vectors to be within a specified range, the specified range being [−32768, 32767] in quarter pixel units;

selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data; and

coding the current block of video data based on motion vector predictor.

2. The method of claim 1, wherein modifying the scaled candidate motion vectors comprises modifying the scaled candidate motion vectors without modifying any of the other candidate motion vectors that have not been scaled.

3. The method of claim 1, wherein modifying the scaled candidate motion vectors comprises clipping the scaled candidate motion vectors prior to selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data.

4. The method of claim 1, wherein the motion vector prediction process is one of a merge mode and an advanced motion vector prediction mode.

5. The method of claim 1, wherein the specified range is defined by a video coding profile or level.

6. The method of claim 1, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

7. (Cancelled)

8. The method of claim 1, wherein modifying the scaled motion vectors includes:

clipping a vertical component of the scaled candidate motion vectors to be within a vertical specified range; and

clipping a horizontal component of the scaled candidate motion vectors to be within a horizontal specified range.

9. The method of claim 1,

wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit,

wherein the scaled candidate motion vectors extends beyond the vertical displacement limit, and

wherein modifying the scaled candidate motion vectors further comprises clipping a vertical component of the scaled candidate motion vectors such that the vertical component of the scaled candidate motion vectors is within the vertical displacement limit.

10. The method of claim 1,

wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit,

wherein the scaled candidate motion vectors extends beyond the horizontal displacement limit, and

wherein modifying the scaled candidate motion vectors further comprises clipping a horizontal component of the scaled candidate motion vectors such that the horizontal component of the scaled candidate motion vectors is within the horizontal displacement limit.

11. The method of claim 1, wherein modifying the scaled candidate motion vectors comprises scaling the scaled candidate motion vectors such that the scaled candidate motion vectors is bounded by the one or more motion vector displacement limits.

12. The method of claim 1, further comprising determining a motion vector for the current block of video data based on the selected one of the plurality of candidate motion vectors for the current block of video data, wherein the determined motion vector identifies a prediction block of video data,

wherein coding the current block of video data comprises decoding the current block of video data with respect to the prediction block of video data.

13. The method of claim 1, further comprising determining a motion vector for the current block of video data based on the selected one of the plurality of candidate motion vectors for the current block of video data, wherein the determined motion vector identifies a prediction block of video data and,

wherein coding the current block of video data comprises encoding the current block of video data with respect to the prediction block of video data.

14. The method of claim 1, further comprising:

decoding a motion vector predictor index to identify the selected one of the plurality of candidate motion vectors for the current block of video data so as to perform an advanced motion vector prediction mode of the motion vector prediction process; and

decoding a motion vector difference between the selected one of the plurality of candidate motion vectors and a motion vector for the current block of video data to determine a motion vector for the current block of video data,

wherein coding the current block of video data comprises decoding the current block of video data using the determined motion vector for the current block of video data.

15. The method of claim 1, further comprising:

decoding an index to identify the selected one of the plurality of candidate motion vectors for the current block of video data so as to perform a merge mode of the motion vector prediction process; and

determining a motion vector for the current block of video data to be equivalent to the selected one of the plurality of candidate motion vectors,

wherein coding the current block of video data comprises decoding the current block of video data using the determined motion vector for the current block of the video data.

16. A video coding device configured to perform a motion vector prediction process to code video data, the video coding device comprising:

a processor configured to determine a plurality of candidate motion vectors for a current block of the video data so as to perform the motion vector prediction process, scale one or more of the plurality of candidate motion vectors determined for the current block of the video data to generate one or more scaled candidate motion vectors, modify the scaled candidate motion vectors to be within a specified range, the specified range being [−32768, 32767] in quarter pixel units, select one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data and code the current block of video data based on motion vector predictor.

17. The video coding device of claim 16, wherein the processor is further configured to, when modifying the scaled candidate motion vectors, modify the scaled candidate motion vectors without modifying any of the other candidate motion vectors that have not been scaled.

18. The video coding device of claim 16, wherein the processor is further configured to, when modifying the scaled candidate motion vectors, clip the scaled candidate motion vectors prior to selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data.

19. The video coding device of claim 16, wherein the motion vector prediction process is one of a merge mode and an advanced motion vector prediction mode.

20. The video coding device of claim 16, wherein the specified range is defined by a video coding profile or level.

21. The video coding device of claim 16, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

22. (Cancelled)

23. The video coding device of claim 16, wherein the processor is further configured to, when modifying the scaled motion vectors, clip a vertical component of the scaled candidate motion vectors to be within a vertical specified range and clip a horizontal

component of the scaled candidate motion vectors to be within a horizontal specified range.

24. The video coding device of claim 16,

wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit,

wherein the scaled candidate motion vectors extends beyond the vertical displacement limit, and

wherein the processor is further configured to, when modifying the scaled candidate motion vectors, clip a vertical component of the scaled candidate motion vectors such that the vertical component of the scaled candidate motion vectors is within the vertical displacement limit.

25. The video coding device of claim 16,

wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit,

wherein the scaled candidate motion vectors extends beyond the horizontal displacement limit, and

wherein the processor is further configured to, when modifying the scaled candidate motion vectors, clip a horizontal component of the scaled candidate motion vectors such that the horizontal component of the scaled candidate motion vectors is within the horizontal displacement limit.

26. The video coding device of claim 16, wherein the processor is further configured to, when modifying the scaled candidate motion vectors, scale the scaled candidate motion vectors such that the scaled candidate motion vectors is bounded by the one or more motion vector displacement limits.

27. The video coding device of claim 16,

wherein the processor is further configured to determine a motion vector for the current block of video data based on the selected one of the plurality of candidate motion vectors for the current block of video data,

wherein the determined motion vector identifies a prediction block of video data and

wherein the processor is further configured to, when coding the current block of video data, decode the current block of video data with respect to the prediction block of video data.

28. The video coding device of claim 16,

wherein the processor is further configured to determine a motion vector for the current block of video data based on the selected one of the plurality of candidate motion vectors for the current block of video data,

wherein the determined motion vector identifies a prediction block of video data and;

wherein the processor is further configured to, when coding the current block of video data, encode the current block of video data with respect to the prediction block of video data.

29. The video coding device of claim 16, wherein the processor is further configured to decode a motion vector predictor index to identify the selected one of the plurality of candidate motion vectors for the current block of video data so as to perform an advanced motion vector prediction mode of the motion vector prediction process, decode a motion vector difference between the selected one of the plurality of candidate motion vectors and a motion vector for the current block of video data to determine a motion vector for the current block of video data, and, when coding the current block of video data, decode the current block of video data using the determined motion vector for the current block of video data.

30. The video coding device of claim 16, wherein the processor is further configured to decode an index to identify the selected one of the plurality of candidate motion vectors for the current block of video data so as to perform a merge mode of the motion vector prediction process, determine a motion vector for the current block of video data to be equivalent to the selected one of the plurality of candidate motion vectors, and, when coding the current block of video data, decoding the current block of video data using the determined motion vector for the current block of the video data.

31. A video coding device configured to perform a motion vector prediction process to code video data, the video coding device comprising:

means for determining a plurality of candidate motion vectors for a current block of the video data so as to perform the motion vector prediction process;

means for scaling one or more of the plurality of candidate motion vectors determined for the current block of the video data to generate one or more scaled candidate motion vectors;

means for modifying the scaled candidate motion vectors to be within a specified range, the specified range being [−32768, 32767] in quarter pixel units;

means for selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data; and

means for coding the current block of video data based on motion vector predictor.

32. The video coding device of claim 31, wherein the means for modifying the scaled candidate motion vectors means for comprises modifying the scaled candidate motion vectors without modifying any of the other candidate motion vectors that have not been scaled.

33. The video coding device of claim 31, wherein the means for modifying the scaled candidate motion vectors comprises means for clipping the scaled candidate motion vectors prior to selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data.

34. The video coding device of claim 31, wherein the specified range is defined by a video coding profile or level.

35. The video coding device of claim 31, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

36. (Cancelled)

37. The video coding device of claim 31, wherein the means for modifying the scaled motion vectors includes:

means for clipping a vertical component of the scaled candidate motion vectors to be within a vertical specified range; and

means for clipping a horizontal component of the scaled candidate motion vectors to be within a horizontal specified range.

38. The video coding device of claim 31,

wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit,

wherein the scaled candidate motion vectors extends beyond the vertical displacement limit, and

wherein the means for modifying the scaled candidate motion vectors further comprises means for clipping a vertical component of the scaled candidate motion vectors such that the vertical component of the scaled candidate motion vectors is within the vertical displacement limit.

39. The video coding device of claim 31,

wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit,

wherein the scaled candidate motion vectors extends beyond the horizontal displacement limit, and

wherein the means for modifying the scaled candidate motion vectors further comprises means for clipping a horizontal component of the scaled candidate motion vectors such that the horizontal component of the scaled candidate motion vectors is within the horizontal displacement limit.

40. A non-transitory computer-readable storage medium having instruction stored thereon that, when executed, cause one or more processors to:

determine a plurality of candidate motion vectors for a current block of the video data so as to perform a motion vector prediction process;

scale one or more of the plurality of candidate motion vectors determined for the current block of the video data to generate one or more scaled candidate motion vectors;

modify the scaled candidate motion vectors to be within a specified range, the specified range being [−32768, 32767] in quarter pixel units;

select one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data; and

code the current block of video data based on motion vector predictor.

41. The non-transitory computer-readable storage medium of claim 40, wherein the instructions, when executed, cause the one or more processors to, when modifying the scaled candidate motion vectors, modify the scaled candidate motion vectors without modifying any of the other candidate motion vectors that have not been scaled.

42. The non-transitory computer-readable storage medium of claim 40, wherein the instructions, when executed, cause the one or more processors to, when modifying the scaled candidate motion vectors, clip the scaled candidate motion vectors prior to selecting one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data.

43. The non-transitory computer-readable storage medium of claim 40, further having stored thereon instructions that, when executed cause the one or more processors to:

select one of the plurality of candidate motion vectors as a motion vector predictor for the current block of the video data; and

code the current block of video data based on motion vector predictor.

44. The non-transitory computer-readable storage medium of claim 40, wherein the specified range is defined by a video coding profile or level.

45. The non-transitory computer-readable storage medium of claim 40, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

46. (Cancelled)

47. The non-transitory computer-readable storage medium of claim 40, wherein the instructions, when executed, cause the one or more processors, when modifying the scaled motion vectors, to:

clip a vertical component of the scaled candidate motion vectors to be within a vertical specified range; and

clip a horizontal component of the scaled candidate motion vectors to be within a horizontal specified range.

48. The non-transitory computer-readable storage medium of claim 40,

wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit,

wherein the scaled candidate motion vectors extends beyond the vertical displacement limit, and

wherein the instructions, when executed, cause the one or more processors to, when modifying the scaled candidate motion vectors, clip a vertical component of the scaled candidate motion vectors such that the vertical component of the scaled candidate motion vectors is within the vertical displacement limit.

49. The non-transitory computer-readable storage medium of claim 40,

wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit,

wherein the scaled candidate motion vectors extends beyond the horizontal displacement limit, and

wherein the instructions, when executed, cause the one or more processors to, when modifying the scaled candidate motion vectors, clip a horizontal component of the scaled candidate motion vectors such that the horizontal component of the scaled candidate motion vectors is within the horizontal displacement limit.

CLAIMS

1. An invention not claimed in any divisional application.