CLAIMS

1. A method of coding video data, the method comprising: determining, to perform a motion vector prediction process, a plurality of candidate motion vectors for a current block in a current picture of the video data based on motion vectors determined for spatially neighboring blocks and a temporally co-located block to the current block; scaling, based on a picture order count value associated with the current picture, 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; clipping the one or more scaled candidate motion vectors to be within a specified range, the specified range being in quarter pixel units, and the plurality of candidate motion vectors including the clipped scaled candidate motion vectors; selecting, after clipping the one or more scaled candidate motion vectors, 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 clipping the one or more scaled candidate motion vectors comprises clipping the one or more scaled candidate motion vectors without clipping any of the other candidate motion vectors that have not been scaled.

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

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

5. 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.

6. The method of claim 1, wherein clipping the one or more scaled motion vectors includes: clipping a vertical component of the one or more scaled candidate motion vectors to be within a vertical specified range; and clipping a horizontal component of the one or more scaled candidate motion vectors to be within a horizontal specified range.

7. 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 clipping the one or more scaled candidate motion vectors further comprises clipping a vertical component of the one or more scaled candidate motion vectors such that the vertical component of the one or more scaled candidate motion vectors is within the vertical displacement limit.

8. 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 clipping the one or more scaled candidate motion vectors further comprises clipping a horizontal component of the one or more scaled candidate motion vectors such that the horizontal component of the one or more scaled candidate motion vectors is within the horizontal displacement limit.

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

10. 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.

11. 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.

12. 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.

13. 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.

14. A video coding device configured to perform a motion vector prediction process to code video data, the video coding device comprising: a memory configured to store a current block of the video data; and a processor configured to: determine, to perform a motion vector prediction process, a plurality of candidate motion vectors for the current block in a current picture of the video data based on motion vectors determined for spatially neighboring blocks and a temporally co-located block to the current block; scale, based on a picture order count value associated with the current picture, 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; clip the one or more scaled candidate motion vectors to be within a specified range, the specified range being in quarter pixel units, and the plurality of candidate motion vectors including the clipped scaled candidate motion vectors; select, after clipping the one or more scaled candidate motion vectors, 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.

15. The video coding device of claim 14, wherein the processor is configured to clip the one or more scaled candidate motion vectors without clipping any of the other candidate motion vectors that have not been scaled.

16. The video coding device of claim 14, wherein the motion vector prediction process is one of a merge mode and an advanced motion vector prediction mode.

17. The video coding device of claim 14, wherein the specified range is defined by a video coding profile or level.

18. The video coding device of claim 14, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

19. The video coding device of claim 14, wherein the processor is configured to clip a vertical component of the one or more scaled candidate motion vectors to be within a vertical specified range and clip a horizontal component of the one or more scaled candidate motion vectors to be within a horizontal specified range.

20. The video coding device of claim 14, wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the vertical displacement limit, and wherein the processor is further configured to clip a vertical component of the one or more scaled candidate motion vectors such that the vertical component of the one or more scaled candidate motion vectors is within the vertical displacement limit.

21. The video coding device of claim 14, wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the horizontal displacement limit, and wherein the processor is configured to clip a horizontal component of the one or more scaled candidate motion vectors such that the horizontal component of the one or more scaled candidate motion vectors is within the horizontal displacement limit.

22. The video coding device of claim 14, wherein the processor is configured to scale the one or more scaled candidate motion vectors such that the one or more scaled candidate motion vectors is bounded by the one or more motion vector displacement limits.

23. The video coding device of claim 14, 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.

24. The video coding device of claim 14, 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.

25. The video coding device of claim 14, 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.

26. The video coding device of claim 14, 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.

27. A video coding device configured to perform a motion vector prediction process to code video data, the video coding device comprising: means for determining, to perform a motion vector prediction process, a plurality of candidate motion vectors for a current block in a current picture of the video data based on motion vectors determined for spatially neighboring blocks and a temporally co-located block to the current block; means for scaling, based on a picture order count value associated with the current picture, 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 clipping the one or more scaled candidate motion vectors to be within a specified range, the specified range being in quarter pixel units, and the plurality of candidate motion vectors including the clipped scaled candidate motion vectors; means for selecting, after clipping the one or more scaled candidate motion vectors, 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.

28. The video coding device of claim 27, wherein the means for clipping the one or more scaled candidate motion vectors comprising means for clipping the one or more scaled candidate motion vectors without clipping any of the other candidate motion vectors that have not been scaled.

29. The video coding device of claim 27, wherein the specified range is defined by a video coding profile or level.

30. The video coding device of claim 27, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

31. The video coding device of claim 27, wherein the means for clipping the one or more scaled motion vectors includes: means for clipping a vertical component of the one or more scaled candidate

motion vectors to be within a vertical specified range; and means for clipping a horizontal component of the one or more scaled candidate motion vectors to be within a horizontal specified range.

32. The video coding device of claim 27, wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the vertical displacement limit, and wherein the means for clipping the one or more scaled candidate motion vectors further comprises means for clipping a vertical component of the one or more scaled candidate motion vectors such that the vertical component of the one or more scaled candidate motion vectors is within the vertical displacement limit.

33. The video coding device of claim 27, wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the horizontal displacement limit, and wherein the means for clipping the one or more scaled candidate motion vectors further comprises means for clipping a horizontal component of the one or more scaled candidate motion vectors such that the horizontal component of the one or more scaled candidate motion vectors is within the horizontal displacement limit.

34. A non-transitory computer-readable storage medium having instruction stored thereon that, when executed, cause one or more processors to: determine, to perform a motion vector prediction process, a plurality of candidate motion vectors for a current block in a current picture of the video data based on motion vectors determined for spatially neighboring blocks and a temporally co-located block to the current block; scale, based on a picture order count value associated with the current picture, 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; clip the one or more scaled candidate motion vectors to be within a specified range, the specified range being in quarter pixel units, and the plurality of candidate motion vectors including the clipped scaled candidate motion vectors; select, after clipping the one or more scaled candidate motion vectors, 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.

35. The non-transitory computer-readable storage medium of claim 34, wherein the instructions, when executed, cause the one or more processors to clip the one or more scaled candidate motion vectors without modifying any of the other candidate motion vectors that have not been scaled.

36. The non-transitory computer-readable storage medium of claim 34, wherein the specified range is defined by a video coding profile or level.

37. The non-transitory computer-readable storage medium of claim 34, wherein the specified range is fixed and hard-coded in one or more of a video decoder and a video encoder.

38. The non-transitory computer-readable storage medium of claim 34, wherein the instructions, when executed, cause the one or more processors to: clip a vertical component of the one or more scaled candidate motion vectors to be within a vertical specified range; and clip a horizontal component of the one or more scaled candidate motion vectors to be within a horizontal specified range.

39. The non-transitory computer-readable storage medium of claim 34, wherein the specified range specifies a motion vector displacement limit that includes a vertical displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the vertical displacement limit, and wherein the instructions, when executed, cause the one or more processors to clip a vertical component of the one or more scaled candidate motion vectors such that the vertical component of the one or more scaled candidate motion vectors is within the vertical displacement limit.

40. The non-transitory computer-readable storage medium of claim 34, wherein the specified range specifies a motion vector displacement limit that includes a horizontal displacement limit, wherein the one or more scaled candidate motion vectors extends beyond the horizontal displacement limit, and wherein the instructions, when executed, cause the one or more processors to clip a horizontal component of the one or more scaled candidate motion vectors such that the horizontal component of the one or more scaled candidate motion vectors is within the horizontal displacement limit.