CLAIMS

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

coding a value of a motion vector difference for a current block of video data;

obtaining, from a motion vector buffer, a value of a motion vector predictor for the current block of video data;

obtaining a shift value that is based on a resolution of the value of the motion vector difference and based on a storage resolution shift amount for motion vectors;

rounding, based on the shift value, the value of the motion vector predictor obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference, wherein the rounding comprises:

right-shifting, by the shift value, a value representing a sum of the value of the motion vector predictor obtained from the motion vector buffer and a rounding offset; and

left-shifting, by the shift value, the right-shifted value representing the sum of the motion vector predictor and the rounding offset to obtain the rounded value of the motion vector predictor;

adding the rounded value of the motion vector predictor to the value of the motion vector difference to obtain a value of a motion vector for the current block;

obtaining, based on the value of the motion vector for the current block, samples of a predictor block for the current block; and

reconstructing samples of the current block based on the samples of the predictor block for the current block.

2. The method of claim 1, further comprising determining the rounding offset as one left-shifted by a difference of the shift value and 1.

3. The method of claim 1, wherein determining the shift value comprises adding a value that represents the resolution of the value of the motion vector difference to a value that represents the storage resolution shift amount to obtain the shift value.

4. The method of claim 3, wherein the value representing the storage resolution shift amount is 2.

5. The method of claim 4, wherein the value that represents the resolution of the value of the motion vector difference indicates whether the resolution of the value of the motion vector difference is one of quarter luma sample precision, integer luma sample precision, or four luma sample precision.

6. The method of claim 1, wherein rounding the value of the motion vector predictor obtained from the motion vector buffer comprises rounding towards zero.

7. The method of claim 1, wherein the motion vector predictor is a first motion vector predictor, the method further comprising:

obtaining, from the motion vector buffer, values of a plurality of candidate motion vector predictors for the current block of video data, wherein the plurality of candidate motion vector predictors includes the first motion vector predictor,

wherein rounding the value of the first motion vector predictor obtained from the motion vector buffer comprises rounding the values of the plurality of candidate motion vector predictors obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference; and

performing a pruning process on the rounded values of the candidate motion vector predictors to generate a motion vector predictor candidate list.

8. The method of claim 1, wherein the motion vector predictor is a first motion vector predictor, the method further comprising:

obtaining, from the motion vector buffer, values of a plurality of candidate motion vector predictors for the current block of video data, wherein the plurality of candidate motion vector predictors includes the first motion vector predictor;

performing a pruning process on the values of the plurality of candidate motion vector predictors obtained from the motion vector buffer to generate a candidate motion vector predictor candidate list, wherein the motion vector predictor candidate list includes the first motion vector predictor;

wherein rounding the value of the first motion vector predictor obtained from the motion vector buffer comprises rounding the values of the plurality of candidate motion vector

predictors included in the motion vector predictor candidate list directly to the resolution of the value of the motion vector difference.

9. The method of claim 1, wherein rounding the value of the motion vector predictor obtained from the motion vector buffer comprises rounding the value of the motion vector predictor obtained from the motion vector buffer in accordance with a unified rounding process for all motion vector rounding operations.

10. The method of claim 1, wherein coding comprises decoding, the method further comprising:

obtaining, from the coded video bitstream, residual values for the current block, wherein reconstructing the samples of the current block comprises adding the residual values for the current block to the samples of the predictor block.

11. The method of claim 1, wherein coding comprises encoding, the method further comprising:

encoding, in the coded video bitstream, residual values for the current block, wherein reconstructing the samples of the current block comprises adding the residual values for the current block to the samples of the predictor block.

12. The method of claim 1, wherein rounding the value of the motion vector predictor obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference comprises:

performing a single rounding operation to round the value of the motion vector predictor obtained from the motion vector buffer from a storage resolution to the resolution of the value of the motion vector difference.

13. A video coding device comprising:

a memory configured to store video data; and

one or more processing units implemented in circuitry and configured to:

code a value of a motion vector difference for a current block of video data;

obtain, from a motion vector buffer, a value of a motion vector predictor for the

current block of video data;

obtain a shift value that is based on a resolution of the value of the motion vector difference and based on a storage resolution shift amount for motion vectors;

round, based on the shift value, the value of the motion vector predictor obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference, wherein, to round the value of the motion vector predictor, the one or more processing units are configured to:

right-shift, by the shift value, a value representing a sum of the value of the motion vector predictor obtained from the motion vector buffer and a rounding offset; and

left-shift, by the shift value, the right-shifted value representing the sum of the motion vector predictor and the rounding offset to obtain the rounded value of the motion vector predictor;

add the rounded value of the motion vector predictor to the value of the motion vector difference to obtain a value of a motion vector for the current block;

obtain, based on the value of the motion vector for the current block, samples of a predictor block for the current block; and

reconstruct samples of the current block based on the samples of the predictor block for the current block.

14. The device of claim 13, wherein the one or more processing units are configured to determine the rounding offset as one left-shifted by a difference of the shift value and 1.

15. The device of claim 13, wherein, to determine the shift value, the one or more processing units are configured to add a value that represents the resolution of the value of the motion vector difference to a value that represents the storage resolution shift amount to obtain the shift value.

16. The device of claim 15, wherein the value representing the storage resolution shift amount is 2.

17. The device of claim 16, wherein the value that represents the resolution of the value of the motion vector difference indicates whether the resolution of the value of the motion vector

difference is one of quarter luma sample precision, integer luma sample precision, or four luma sample precision.

18. The device of claim 13, wherein, to round the value of the motion vector predictor obtained from the motion vector buffer, the one or more processing units are configured to round the value of the motion vector predictor obtained from the motion vector buffer towards zero.

19. The device of claim 13, wherein the motion vector predictor is a first motion vector predictor, the one or more processing units being configured to:

obtain, from the motion vector buffer, values of a plurality of candidate motion vector predictors for the current block of video data, wherein the plurality of candidate motion vector predictors includes the first motion vector predictor,

wherein, to round the value of the first motion vector predictor obtained from the motion vector buffer, the one or more processing units are configured to round the values of the plurality of candidate motion vector predictors obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference; and

perform a pruning process on the rounded values of the candidate motion vector predictors to generate a motion vector predictor candidate list.

20. The device of claim 13, wherein the motion vector predictor is a first motion vector predictor, the one or more processing units being configured to:

obtain, from the motion vector buffer, values of a plurality of candidate motion vector predictors for the current block of video data, wherein the plurality of candidate motion vector predictors includes the first motion vector predictor;

perform a pruning process on the values of the plurality of candidate motion vector predictors obtained from the motion vector buffer to generate a candidate motion vector predictor candidate list, wherein the motion vector predictor candidate list includes the first motion vector predictor;

wherein, to round the value of the first motion vector predictor obtained from the motion vector buffer, the one or more processing units are configured to round the values of the plurality of candidate motion vector predictors included in the motion vector predictor candidate list directly to the resolution of the value of the motion vector difference.

21. The device of claim 13, wherein, to round the value of the motion vector predictor obtained from the motion vector buffer, the one or more processing units are configured to round the value of the motion vector predictor obtained from the motion vector buffer in accordance with a unified rounding process for all motion vector rounding operations.

22. The device of claim 13, wherein the video coding device comprises a video decoding device, the one or more processing units being configured to:

obtain, from a coded video bitstream, residual values for the current block, wherein, to reconstruct the samples of the current block, the one or more processing units are configured to add the residual values for the current block to the samples of the predictor block.

23. The device of claim 22, further comprising a display configured to display the reconstructing the samples of the current block.

24. The device of claim 13, wherein the video coding device comprises a video encoding device, the one or more processing units being configured to:

encode, in a coded video bitstream, residual values for the current block, wherein, to reconstruct the samples of the current block, the one or more processing units are configured to add the residual values for the current block to the samples of the predictor block.

25. The device of claim 24, wherein the device is a wireless communication device, the device further comprising a camera configured to capture the video data.

26. The device of claim 13, wherein, to round the value of the motion vector predictor obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference, the one or more processing units are configured to:

perform a single rounding operation to round the value of the motion vector predictor obtained from the motion vector buffer from a storage resolution to the resolution of the value of the motion vector difference.

27. A non-transitory computer-readable storage medium storing instructions that, when executed, cause one or more processors to:

code a value of a motion vector difference for a current block of video data;

obtain, from a motion vector buffer, a value of a motion vector predictor for the current block of video data;

obtain a shift value that is based on a resolution of the value of the motion vector difference and based on a storage resolution shift amount for motion vectors;

round, based on the shift value, the value of the motion vector predictor obtained from the motion vector buffer directly to the resolution of the value of the motion vector difference, wherein the instructions that cause the one or more processors to round the value of the motion vector predictor comprise instructions that cause the one or more processors to:

right-shift, by the shift value, a value representing a sum of the value of the motion vector predictor obtained from the motion vector buffer and a rounding offset; and

left-shift, by the shift value, the right-shifted value representing the sum of the motion vector predictor and the rounding offset to obtain the rounded value of the motion vector predictor;

add the rounded value of the motion vector predictor to the value of the motion vector difference to obtain a value of a motion vector for the current block;

obtain, based on the value of the motion vector for the current block, samples of a predictor block for the current block; and

reconstruct samples of the current block based on the samples of the predictor block for the current block.