CLAIMS

1. A method of decoding video data, the method comprising: generating a first prediction block for a current block of video data using a base inter-prediction mode, the first prediction block including first prediction samples for each sample of the current block; coding a merge mode syntax element for a second prediction block, the second prediction block representing an additional prediction hypothesis for the current block, wherein the merge mode syntax element indicates whether motion information for the second prediction block is coded using merge mode; coding motion information for the second prediction block according to the merge mode syntax element, including, when the merge mode syntax element indicates that the motion information for the second prediction block is coded using merge mode, forming a merge candidate list including one or more merge candidates, each of the merge candidates representing respective sets of uni-prediction motion information; generating the second prediction block for the current block of video data using the motion information, the second prediction block including second prediction samples for each sample of the current block; forming a multi-hypothesis prediction block for the current block as a combination of each of the first prediction samples of the first prediction block and each of the second prediction samples of the second prediction block; and decoding the current block using the multi-hypothesis prediction block.

2. The method of claim 1, wherein when the merge mode syntax element indicates that merge mode is used, coding the motion information for the second prediction block comprises coding a merge index indicating a merge candidate from which to inherit the motion information for the second prediction block.

3. The method of claim 1, wherein when the merge mode syntax element indicates that merge mode is not used, coding the motion information for the second prediction block comprises coding a reference picture list identifier, a reference picture index, a motion vector predictor index, and a motion vector difference for the second prediction block.

4. The method of claim 1, wherein forming the merge candidate list comprises: determining that a neighboring block to the second prediction block is bi-predicted using first motion information and second motion information; and forming at least one uni-prediction merge candidate from the neighboring block, including selecting only one of the first motion information or the second motion information for the at least one uni-prediction merge candidate.

5. The method of claim 4, wherein forming the merge candidate list comprises: forming a first uni-prediction merge candidate using the first motion information; and forming a second uni-prediction merge candidate using the second motion information.

6. The method of claim 1, wherein the second prediction block comprises one additional prediction hypothesis of a plurality of additional prediction hypotheses, the method further

comprising coding motion information for each of the additional prediction hypotheses using the same merge candidate list.

7. The method of claim 1, wherein forming the merge candidate list comprises forming the merge candidate list according to a merge candidate list construction process of geometric partitioning mode (GPM).

8. The method of claim 1, wherein the second prediction block comprises one additional prediction hypothesis of a plurality of additional prediction hypotheses, wherein coding the motion information for the second prediction block comprises: forming a merge candidate list including two or more merge candidates; selecting one of the merge candidates from the merge candidate list for the motion information for the second prediction block; and coding the motion information for the second prediction block using the one of the merge candidates, the method further comprising: removing the one of the merge candidates from the merge candidate list to form a reduced merge candidate list; and coding motion information for a third prediction candidate using one of the remaining merge candidates in the reduced merge candidate list.

9. The method of claim 8, further comprising: coding a first merge candidate index for the second prediction block, the merge candidate list having N merge candidates, N being a positive integer greater than 1, the first merge candidate index having a maximum possible truncated binary value of N; and coding a second merge candidate index for the third prediction candidate, the reduced merge candidate list having N−1 merge candidates, the second merge candidate index having a maximum possible truncated binary value of N−1.

10. The method of claim 1, wherein the merge mode syntax element comprises a merge mode syntax element for the base inter-prediction mode of the first prediction block.

11. The method of claim 1, wherein the merge mode syntax element comprises a second merge mode syntax element, the method further comprising coding a first merge mode syntax element for the base inter-prediction mode of the first prediction block, the second merge mode syntax element being different than the first merge mode syntax element.

12. The method of claim 11, wherein coding the first merge mode syntax element comprises coding the first merge mode syntax element using a first context adaptive binary arithmetic coding (CABAC) context, and wherein coding the second merge mode syntax element comprises coding the second merge mode syntax element using the first CABAC context in response to having coded the first merge mode syntax element using the first CABAC context.

13. The method of claim 12, the first CABAC context being a CABAC context used for merge mode.

14. The method of claim 12, the first CABAC context being different than a second CABAC context used for merge mode.

15. The method of claim 11, wherein coding the first merge mode syntax element comprises coding the first merge mode syntax element using a first context adaptive binary arithmetic coding (CABAC) context, and wherein coding the second merge mode syntax element comprises coding the second merge mode syntax element using a second CABAC context.

16. The method of claim 15, the second CABAC context being different than the first CABAC context.

17. The method of claim 1, further comprising: coding motion information of a third prediction block using advanced motion vector prediction (AMVP) mode, including coding a motion vector difference (MVD) value having half-luma-sample resolution, the third prediction block being a base inter-prediction block of a neighboring block to the current block; and coding a candidate index identifying the third prediction block as a motion information candidate for the second prediction block, wherein generating the second prediction block comprises interpolating half-pixel samples of a reference block for the second prediction block using a six-tap interpolation filter.

18. The method of claim 1, further comprising determining whether to apply local illumination compensation (LIC) to the second prediction block according to whether LIC was applied to the first prediction block.

19. The method of claim 18, wherein the base inter-prediction mode comprises one of uni-directional inter-prediction or bi-directional inter-prediction.

20. The method of claim 18, further comprising applying LIC to the first prediction block, wherein determining whether to apply LIC to the second prediction block comprises determining to apply LIC to the second prediction block in response to having applied LIC to the first prediction block.

21. The method of claim 18, further comprising: applying LIC to the first prediction block; and coding motion information for the second prediction block using advanced motion vector prediction (AMVP) mode, wherein determining whether to apply LIC to the second prediction block comprises determining to apply LIC to the second prediction block in response to applying LIC to the first prediction block and coding the motion information for the second prediction block using AMVP.

22. The method of claim 18, further comprising: applying LIC to the first prediction block; and coding motion information for the second prediction block using merge mode, wherein determining whether to apply LIC to the second prediction block comprises: coding a LIC flag for a merge candidate of the second prediction block; and determining whether to apply LIC to the second prediction block according to the value of the LIC flag for the merge candidate of the second prediction block.

23. The method of claim 1, further comprising encoding the current block prior to decoding the current block.

24. A device for decoding video data, the device comprising: a memory configured to store video data; and one or more processors implemented in circuitry and configured to: generate a first prediction block for a current block of video data using a base inter-prediction mode, the first prediction block including first prediction samples for each sample of the current block; code a merge mode syntax element for a second prediction block, the second prediction block representing an additional prediction hypothesis for the current block, wherein the merge mode syntax element indicates whether motion information for the second prediction block is coded using merge mode; code motion information for the second prediction block according to the merge mode syntax element, wherein to code the motion information, the one or more processors are configured to, when the merge mode syntax element indicates that the motion information for the second prediction block is coded using merge mode, form a merge candidate list including one or more merge candidates, each of the merge candidates representing respective sets of uni-prediction motion information; generate the second prediction block for the current block of video data using the motion information, the second prediction block including second prediction samples for each sample of the current block; form a multi-hypothesis prediction block for the current block as a combination of each of the first prediction samples of the first prediction block and each of the second prediction samples of the second prediction block; and decode the current block using the multi-hypothesis prediction block.

25. The device of claim 24, wherein to form the merge candidate list, the one or more processors are configured to: determine that a neighboring block to the second prediction block is bi-predicted using first motion information and second motion information; and form at least one uni-prediction merge candidate from the neighboring block, wherein the one or more processors are configured to select only one of the first motion information or the second motion information for the at least one uni-prediction merge candidate.

26. The device of claim 25, wherein to form the merge candidate list, the one or more processors are configured to: form a first uni-prediction merge candidate using the first motion information; and form a second uni-prediction merge candidate using the second motion information.

27. The device of claim 24, wherein the one or more processors are further configured to: code motion information of a third prediction block using advanced motion vector prediction (AMVP) mode, wherein to code the motion information of the third prediction block, the one or more processors are configured to code a motion vector difference (MVD) value having half-luma-sample resolution, the third prediction block being a base inter-prediction block of a neighboring block to the current block; and code a candidate index identifying the third prediction block as a motion information candidate for the second prediction block, wherein to generate the second prediction block, the one or more processors are configured to interpolate half-pixel samples of a reference block for the second prediction block using a six-tap interpolation filter.

28. The device of claim 24, wherein the one or more processors are further configured to determine whether to apply local illumination compensation (LIC) to the second prediction block according to whether LIC was applied to the first prediction block.

29. The device of claim 24, wherein the one or more processors are further configured to encode the current block prior to decoding the current block.

30. The device of claim 24, further comprising a display configured to display the decoded video data.

31. The device of claim 24, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

32. A non-transitory computer-readable storage medium having stored thereon instructions that, when executed, cause a processor to: generate a first prediction block for a current block of video data using a base inter-prediction mode, the first prediction block including first prediction samples for each sample of the current block; code a merge mode syntax element for a second prediction block, the second prediction block representing an additional prediction hypothesis for the current block, wherein the merge mode syntax element indicates whether motion information for the second prediction block is coded using merge mode; code motion information for the second prediction block according to the merge mode syntax element, including, when the merge mode syntax element indicates that the motion information for the second prediction block is coded using merge mode, forming a merge candidate list including one or more merge candidates, each of the merge candidates representing respective sets of uni-prediction motion information; generate the second prediction block for the current block of video data using the motion information, the second prediction block including second prediction samples for each sample of the current block; form a multi-hypothesis prediction block for the current block as a combination of each of the first prediction samples of the first prediction block and each of the second prediction samples of the second prediction block; and decode the current block using the multi-hypothesis prediction block.

33. The non-transitory computer-readable storage medium of claim 32, wherein the instructions that cause the processor to form the merge candidate list comprise instructions that cause the processor to: determine that a neighboring block to the second prediction block is bi-predicted using first motion information and second motion information; and form at least one uni-prediction merge candidate from the neighboring block, including instructions that cause the processor to select only one of the first motion information or the second motion information for the at least one uni-prediction merge candidate.

34. The non-transitory computer-readable storage medium of claim 33, wherein the instructions that cause the processor to form the merge candidate list comprise instructions that cause the processor to: form a first uni-prediction merge candidate using the first motion information; and form a second uni-prediction merge candidate using the second motion information.

35. The non-transitory computer-readable storage medium of claim 32, further comprising instructions that cause the processor to: code motion information of a third prediction block using advanced motion vector prediction (AMVP) mode, wherein the instructions that cause the processor to code the motion information of the third prediction block comprise instructions that cause the processor to code a motion vector difference (MVD) value having half-luma-sample resolution, the third prediction block being a base inter-prediction block of a neighboring block to the current block; and code a candidate index identifying the third prediction block as a motion information candidate for the second prediction block, wherein the instructions that cause the processor to generate the second prediction block comprise instructions that cause the processor to interpolate half-pixel samples of a reference block for the second prediction block using a six-tap interpolation filter.

36. The non-transitory computer-readable storage medium of claim 32, further comprising instructions that cause the processor to determine whether to apply local illumination compensation (LIC) to the second prediction block according to whether LIC was applied to the first prediction block.

37. The non-transitory computer-readable storage medium of claim 32, further comprising instructions that cause the processor to encode the current block prior to decoding the current block.

38. A device for decoding video data, the device comprising: means for generating a first prediction block for a current block of video data using a base inter-prediction mode, the first prediction block including first prediction samples for each sample of the current block; means for coding a merge mode syntax element for a second prediction block, the second prediction block representing an additional prediction hypothesis for the current block, wherein the merge mode syntax element indicates whether motion information for the second prediction block is coded using merge mode; means for coding motion information for the second prediction block according to the merge mode syntax element, including means for forming, when the merge mode syntax element indicates that the motion information for the second prediction block is coded using merge mode, a merge candidate list including one or more merge candidates, each of the merge candidates representing respective sets of uni-prediction motion information; means for generating the second prediction block for the current block of video data using the motion information, the second prediction block including second prediction samples for each sample of the current block; means for forming a multi-hypothesis prediction block for the current block as a combination of each of the first prediction samples of the first prediction block and each of the second prediction samples of the second prediction block; and means for decoding the current block using the multi-hypothesis prediction block.