CLAIMS

1. A method of coding video data, the method comprising: coding a block of video data to obtain a coded block of video data; generating padded samples using a mapping function and samples of the decoded block of video data; applying an adaptive loop filter defined by a filter support to samples of the coded block of video data, including using the padded samples for portions of the filter support that are outside of the block; and outputting the coded block of video data after applying adaptive loop filtering to the coded block of video data.

2. The method of claim 1, further comprising: generating the padded samples from samples of a reference picture pointed to by a motion vector associated with the block of video data.

3. The method of claim 1, further comprising: generating the padded samples from a first row or a last row of the coded block of video data.

4. The method of claim 1, further comprising: generating the padded samples by applying a linear function to samples of one or more reference pictures.

5. The method of claim 4, further comprising: identifying the samples of the one or more reference pictures using one or more motion vectors.

6. The method of claim 5, further comprising: rounding the one or more motion vectors to integer values.

7. The method of claim 5, further comprising: setting the one or more motion vector to zero motion vectors.

8. The method of claim 1, wherein the mapping function includes one or more of a swap function, a flipping function, or a rotation function.

9. The method of claim 1, further comprising: setting coefficients of the portions of the filter support of the adaptive loop filter that are outside the block of video data to zero.

10. The method of claim 1, further comprising: receiving a syntax element indicating the use of the padded samples for portions of the filter support that are outside of the block.

11. The method of claim 1, wherein coding is encoding.

12. The method of claim 1, wherein coding is decoding.

13. An apparatus configured to code video data, the apparatus comprising: a memory configured to store a block of video data; and one or more processors implemented in circuitry in

communication with the memory, the one or more processors configured to: code the block of video data to obtain a coded block of video data; generate padded samples using a mapping function and samples of the decoded block of video data; apply an adaptive loop filter defined by a filter support to samples of the coded block of video data, including using the padded samples for portions of the filter support that are outside of the block; and output the coded block of video data after applying adaptive loop filtering to the coded block of video data.

14. The apparatus of claim 13, wherein the one or more processors are further configured to: generate the padded samples from samples of a reference picture pointed to by a motion vector associated with the block of video data.

15. The apparatus of claim 13, wherein the one or more processors are further configured to: generate the padded samples from a first row or a last row of the coded block of video data.

16. The apparatus of claim 13, wherein the one or more processors are further configured to: generate the padded samples by applying a linear function to samples of one or more reference pictures.

17. The apparatus of claim 16, wherein the one or more processors are further configured to: identify the samples of the one or more reference pictures using one or more motion vectors.

18. The apparatus of claim 17, wherein the one or more processors are further configured to: round the one or more motion vectors to integer values.

19. The apparatus of claim 17, wherein the one or more processors are further configured to: set the one or more motion vector to zero motion vectors.

20. The apparatus of claim 13, wherein the mapping function includes one or more of a swap function, a flipping function, or a rotation function.

21. The apparatus of claim 13, wherein the one or more processors are further configured to: set coefficients of the portions of the filter support of the adaptive loop filter that are outside the block of video data to zero.

22. The apparatus of claim 13, wherein the one or more processors are further configured to: receive a syntax element indicating the use of the padded samples for portions of the filter support that are outside of the block.

23. The apparatus of claim 13, wherein to code the block of video data to obtain the coded block of video, the one or more processors are configured to encode the block of video data to obtain an encoded block of video.

24. The apparatus of claim 13, wherein to code the block of video data to obtain the coded block

of video, the one or more processors are configured to decode the block of video data to obtain a decoded block of video.

25. An apparatus configured to code video data, the apparatus comprising: means for coding a block of video data to obtain a coded block of video data; means for generating padded samples using a mapping function and samples of the decoded block of video data; means for applying an adaptive loop filter defined by a filter support to samples of the coded block of video data, including using the padded samples for portions of the filter support that are outside of the block; and means for outputting the coded block of video data after applying adaptive loop filtering to the coded block of video data.

26. The apparatus of claim 25, further comprising: means for generating the padded samples from samples of a reference picture pointed to by a motion vector associated with the block of video data.

27. A non-transitory computer-readable medium storing instructions that, when executed, cause one or more processors to: code a block of video data to obtain a coded block of video data; generate padded samples using a mapping function and samples of the decoded block of video data; apply an adaptive loop filter defined by a filter support to samples of the coded block of video data, including using the padded samples for portions of the filter support that are outside of the block; and output the coded block of video data after applying adaptive loop filtering to the coded block of video data.

28. The non-transitory computer-readable medium of claim 27, wherein the instructions further cause the one or more processors to: generate the padded samples from samples of a reference picture pointed to by a motion vector associated with the block of video data.