CLAIMS

1. A method of decoding video data, the method comprising: storing sets of adaptive loop filter (ALF) parameters in a one-dimensional array having a predefined size of N memory elements, N being a positive integer value, wherein storing the sets of ALF parameters comprises storing, in one or more of the memory elements of the array, both corresponding ALF parameters and an identifier (ID) value indicating one or more parameter sets that are effective candidates for temporal prediction of the corresponding ALF parameters, the sets of ALF parameters defining ALF coefficients of respective ALF filters; decoding one or more blocks of video data, including, for at least one of the blocks of the one or more blocks: determining a reference picture in a decoded picture buffer to be used to decode the at least one of the blocks, the reference picture being separate from each of the one or more parameter sets and from the one-dimensional array having the predefined size of N memory elements; forming a prediction block for the at least one of the blocks from the reference picture; and combining a residual block for the at least one of the blocks with the prediction block to form a decoded block for the at least one of the blocks; and filtering the one or more blocks, including the at least one of the blocks, using the ALF parameters of the one-dimensional array.

2. The method of claim 1, wherein storing the sets of ALF parameters comprises storing the ALF parameters from at least one of a B-slice or a P-slice.

3. The method of claim 1, wherein storing the sets of ALF parameters comprises storing the sets of ALF parameters in a determined order.

4. The method of claim 3, wherein the determined order comprises a decoding order.

5. The method of claim 3, wherein when a new set of ALF parameters is received and all of the N memory elements are used, the method further comprises: removing one entry from one of the memory elements; and storing the new set of ALF parameters in the one of the memory elements.

6. The method of claim 5, wherein removing the one entry comprises selecting the one of the memory elements according to a first-in-first-out (FIFO) order.

7. The method of claim 5, wherein removing the one entry comprises selecting the one of the memory elements such that the one of the memory elements has a common ID value with an ID value of the new set of ALF parameters.

8. The method of claim 1, further comprising maintaining a previous index variable having a value representing which of the sets of the ALF parameters is to be used for the filtering.

9. The method of claim 8, wherein the previous index variable has a unary code format.

10. The method of claim 8, wherein the value of the previous index variable ranges from 0 to N−1.

11. The method of claim 8, wherein the one or more blocks are included in a picture having a current ID, and wherein filtering comprises filtering the one or more blocks using the ALF parameters included in the array having IDs equal to or smaller than the current ID.

12. The method of claim 8, further comprising coding a value representing an entry of the array according to an ID of a current picture being coded.

13. The method of claim 1, further comprising: detecting that a picture has been lost from a bitstream including the video data; and adding a preconfigured set of ALF parameters for the picture that has been lost.

14. The method of claim 1, wherein a first slice of the video data includes the one or more blocks, the method further comprising preventing removal of one or more of the stored sets of ALF parameters from the one-dimensional array until after decoding an intra-predicted slice (I-slice) of the video data subsequent to the first picture in decoding order.

15. The method of claim 1, further comprising encoding the one or more blocks prior to decoding the one or more blocks.

16. 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: store sets of adaptive loop filter (ALF) parameters in a one-dimensional array in the memory, the one-dimensional array having a predefined size of N memory elements, N being a positive integer value, wherein the one or more processors are configured to store, in one or more of the memory elements of the array, both corresponding ALF parameters and an identifier (ID) value indicating one or more parameter sets that are effective candidates for temporal prediction of the corresponding ALF parameters, the sets of ALF parameters defining ALF coefficients of respective ALF filters; decode one or more blocks of the video data, wherein to decode at least one of the blocks of the one or more blocks, the one or more processors are configured to: determine a reference picture in a decoded picture buffer to be used to decode the at least one of the blocks, the reference picture being separate from each of the one or more parameter sets and from the one-dimensional array having the predefined size of N memory elements; form a prediction block for the at least one of the blocks from the reference picture; and combine a residual block for the at least one of the blocks with the prediction block to form a decoded block for the at least one of the blocks; and filter the one or more blocks using the ALF parameters of the one-dimensional array.

17. The device of claim 16, wherein the one or more processors are configured to store the sets of ALF parameters in a decoding order.

18. The device of claim 17, wherein when a new set of ALF parameters is received and all of the N memory elements are used, the one or more processors are configured to: select one of the memory elements according to a first-in-first-out (FIFO) order; remove the selected one of the memory elements; and store the new set of ALF parameters in the selected one of the memory elements.

19. The device of claim 16, wherein the one or more processors are configured to maintain a previous index variable having a value representing which of the sets of the ALF parameters is to be used for the filtering.

20. The device of claim 19, wherein the one or more blocks are included in a picture having a current ID, and wherein the one or more processors are configured to filter the one or more blocks using the ALF parameters included in the array having IDs equal to or smaller than the current ID.

21. The device of claim 19, wherein the one or more processors are further configured to code a value representing an entry of the array according to an ID of a current picture being coded.

22. The device of claim 16, wherein the one or more processors are further configured to encode the one or more blocks prior to decoding the one or more blocks.

23. The device of claim 16, further comprising a display configured to display the video data.

24. The device of claim 16, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

25. A non-transitory computer-readable storage medium having stored thereon instructions that, when executed, cause a processor to: store sets of adaptive loop filter (ALF) parameters in a one-dimensional array having a predefined size of N memory elements, N being a positive integer value, wherein storing the sets of ALF parameters comprises storing, in one or more of the memory elements of the array, both corresponding ALF parameters and an identifier (ID) value indicating one or more parameter sets that are effective candidates for temporal prediction of the corresponding ALF parameters, the sets of ALF parameters defining ALF coefficients of respective ALF filters; decode one or more blocks of video data, wherein the instructions that cause the processor to decode the one or more blocks include instructions that cause the processor to decode at least one of the one or more blocks, including instructions that cause the processor to: determine a reference picture in a decoded picture buffer to be used to decode the at least one of the blocks, the reference picture being separate from each of the one or more parameter sets and from the one-dimensional array having the predefined size of N memory elements; form a prediction block for the at least one of the blocks from the reference picture; and combine a residual block for the at least one of the blocks with the prediction block to form a decoded block for the at least one of the blocks; and filter the one or more blocks using the ALF parameters of the one-dimensional array.

26. The non-transitory computer-readable storage medium of claim 25, further comprising instructions that cause the processor to store the sets of ALF parameters in a decoding order.

27. The non-transitory computer-readable storage medium of claim 25, further comprising instructions that cause the processor to maintain a previous index variable having a value representing which of the sets of the ALF parameters is to be used for the filtering.

28. The non-transitory computer-readable storage medium of claim 25, further comprising instructions that cause the processor to encode the one or more blocks prior to decoding the one or more blocks.

29. A device for decoding video data, the device comprising: means for storing sets of adaptive loop filter (ALF) parameters in a one-dimensional array having a predefined size of

N memory elements, N being a positive integer value, wherein storing the sets of ALF parameters comprises storing, in one or more of the memory elements of the array, both corresponding ALF parameters and an identifier (ID) value indicating one or more parameter sets that are effective candidates for temporal prediction of the corresponding ALF parameters, the sets of ALF parameters defining ALF coefficients of respective ALF filters; means for decoding one or more blocks of video data, including means for decoding at least one block of the one or more blocks, the means for decoding the at least one block including: means for determining a reference picture in a decoded picture buffer to be used to decode the at least one of the blocks, the reference picture being separate from each of the one or more parameter sets and from the one-dimensional array having the predefined size of N memory elements; means for forming a prediction block for the at least one of the blocks from the reference picture; and means for combining a residual block for the at least one of the blocks with the prediction block to form a decoded block for the at least one of the blocks; and means for filtering the one or more blocks using the ALF parameters of the one-dimensional array.

30. The device of claim 29, further comprising means for encoding the one or more blocks of video data prior to decoding the one or more blocks of video data.