CLAIMS

1. A method of processing video data, comprising:

performing a conversion between a current block of a current region of a video and a bitstream of the video, wherein the conversion comprises using an adaptive loop filter for the current block, and wherein the bitstream is configured to indicate the adaptive loop filter using multiple syntax elements including:

a first syntax element of the multiple syntax elements, the first syntax element being alf_use_aps_flag, and the first syntax element indicating whether a fixed filter set or a filter set from an adaptation parameter set (APS) is applied to the current block, and

a second syntax element of the multiple syntax elements, the second syntax element being alf_luma_prev_filter_idx, and the second syntax element indicative of an index of the filter set from the APS,

a third syntax element of the multiple syntax elements, the third syntax element being alf_luma_fixed_filter_idx, and the third syntax element indicative of an index of the fixed filter set,

wherein the bitstream comprises a fourth syntax element in a slice header, the fourth syntax element being num_alf_aps_ids_luma, and the fourth syntax element indicating a number of adaptive loop filter APSs used for the current region;

wherein the first syntax element is included in the bitstream when a value of the fourth syntax element in the slice header is greater than one and the first syntax element is included in the bitstream when the value of the fourth syntax element in the slice header is equal to one,

wherein the second syntax element indicative of the index of the filter set from the APS is included in the bitstream when a value of the first syntax element is equal to one and the value of the fourth syntax element in the slice header is greater than one, and

wherein the third syntax element is included in the bitstream when the value of the first syntax element is equal to zero.

2. The method of claim 1, wherein the first syntax element being zero indicating that the fixed filter set is applied to the current block.

3. The method of claim 1, wherein the first syntax element being one indicating that the filter set from the APS is applied to the current block.

4. The method of claim 1, wherein the bitstream excludes the first syntax element when the value of the fourth syntax element in the slice header is equal to zero, and wherein the first syntax element is inferred to indicate that the fixed filter set is applied to the current block.

5. The method of claim 1, wherein the second syntax element indicative of the index of the filter set from the APS is excluded from the bitstream when the value of the fourth syntax element in the slice header is equal to 1.

6. The method of any of claims 1-5, wherein the current region is a slice.

7. The method of any of claims 1-6, wherein the second syntax element indicative of the index of the filter set from the APS is coded with a truncated binary method.

8. The method of any of claims 1-7, wherein a maximum value of the second syntax element indicative of the index of the filter set from the APS is set to a number of allowed ALF APSs for the current region minus K, and wherein K = 1.

9. The method of any of claims 1-8, wherein all bins of a binarized bin string of the second syntax element indicative of the index of the filter set from the APS are bypass coded.

10. The method of any of claims 1-9, wherein the conversion includes encoding the video into the bitstream.

11. The method of any of claims 1-9, wherein the conversion includes decoding the video from the bitstream.

12. An apparatus for processing video data comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to:

perform a conversion between a current block of a current region of a video and a bitstream of the video, wherein the conversion comprises using an adaptive loop filter for the

current block, and wherein the bitstream is configured to indicate the adaptive loop filter using multiple syntax elements including:

a first syntax element of the multiple syntax elements, the first syntax element being alf_use_aps_flag, and the first syntax element indicating whether a fixed filter set or a filter set from an adaptation parameter set (APS) is applied to the current block, and

a second syntax element of the multiple syntax elements, the second syntax element being alf_luma_prev_filter_idx, and the second syntax element indicative of an index of the filter set from the APS,

a third syntax element of the multiple syntax elements, the third syntax element being alf_luma_fixed_filter_idx, and the third syntax element indicative of an index of the fixed filter set,

wherein the bitstream comprises a fourth syntax element in a slice header, the fourth syntax element being num_alf_aps_ids_luma, and the fourth syntax element indicating a number of adaptive loop filter APSs used for the current region;

wherein the first syntax element is included in the bitstream

when a value of the fourth syntax element in the slice header is greater than one and the first syntax element is included in the bitstream when the value of the fourth syntax element in the slice header is equal to one,

wherein the second syntax element indicative of the index of the filter set from the APS is included in the bitstream when a value of the first syntax element is equal to one and the value of the fourth syntax element in the slice header is greater than one, and

wherein the third syntax element is included in the bitstream when the value of the first syntax element is equal to zero.

13. The apparatus of claim 14, wherein the first syntax element being zero indicating that the fixed filter set is applied to the current block;

wherein the first syntax element being one indicating that the filter set from the APS is applied to the current block;

wherein the bitstream excludes the first syntax element when the value of the fourth syntax element in the slice headeris equal to zero, and wherein the first syntax element is inferred to indicate that the fixed filter set is applied to the current block;

wherein the second syntax element indicative of the index of the filter set from the APS is excluded from the bitstream when the value of the fourth syntax element in the slice header is equal to 1.

14. The apparatus of claim 12 or 13, wherein the current region is a slice;

wherein the second syntax element indicative of the index of the filter set from the APS is coded with a truncated binary method;

wherein a maximum value of the second syntax element indicative of the index of the filter set from the APS is set to a number of allowed ALF APSs for the current region minus K, and wherein K = 1; and

wherein all bins of a binarized bin string of the second syntax element indicative of the index of the filter set from the APS are bypass coded.

15. A non-transitory computer-readable storage medium storing instructions that cause a processor to:

perform a conversion between a current block of a current region of a video and a bitstream of the video, wherein the conversion comprises using an adaptive loop filter for the current block, and wherein the bitstream is configured to indicate the adaptive loop filter using multiple syntax elements including:

a first syntax element of the multiple syntax elements, the first syntax element being alf_use_aps_flag, and the first syntax element indicating whether a fixed filter set or a filter set from an adaptation parameter set (APS) is applied to the current block, and

a second syntax element of the multiple syntax elements, the second syntax element being alf_luma_prev_filter_idx, and the second syntax element indicative of an index of the filter set from the APS,

a third syntax element of the multiple syntax elements, the third syntax element being alf_luma_fixed_filter_idx, and the third syntax element indicative of an index of the fixed filter set,

wherein the bitstream comprises a fourth syntax element in a slice header, the fourth syntax element being num_alf_aps_ids_luma, and the fourth syntax element indicating a number of adaptive loop filter APSs used for the current region;

wherein the first syntax element is included in the bitstream

when a value of the fourth syntax element in the slice header is greater than one and the first syntax element is included in the bitstream when the value of the fourth syntax element in the slice header is equal to one,

wherein the second syntax element indicative of the index of the filter set from the APS is included in the bitstream when a value of the first syntax element is equal to one and the value of the fourth syntax element in the slice header is greater than one, and

wherein the third syntax element is included in the bitstream when the value of the first syntax element is equal to zero.

16. The non-transitory computer-readable storage medium of claim 15, wherein the first syntax element being zero indicating that the fixed filter set is applied to the current block;

wherein the first syntax element being one indicating that the filter set from the APS is applied to the current block;

wherein the bitstream excludes the first syntax element when the value of the fourth syntax element in the slice headeris equal to zero, and wherein the first syntax element is inferred to indicate that the fixed filter set is applied to the current block;

wherein the second syntax element indicative of the index of the filter set from the APS is excluded from the bitstream when the value of the fourth syntax element in the slice header is equal to 1;

wherein the current region is a slice;

wherein the second syntax element indicative of the index of the filter set from the APS is coded with a truncated binary method;

wherein a maximum value of the second syntax element indicative of the index of the filter set from the APS is set to a number of allowed ALF APSs for the current region minus K, and wherein K = 1; and

wherein all bins of a binarized bin string of the second syntax element indicative of the index of the filter set from the APS are bypass coded.

17. A non-transitory computer-readable recording medium storing a bitstream of a video which is generated by a method performed by a video processing apparatus, wherein the method comprises:

generating the bitstream for a current block of a current region of the video, wherein the generating comprises using an adaptive loop filter for the current block, and wherein the bitstream is configured to indicate the adaptive loop filter using multiple syntax elements including:

a first syntax element of the multiple syntax elements, the first syntax element being alf_use_aps_flag, and the first syntax element indicating whether a fixed filter set or a filter set from an adaptation parameter set (APS) is applied to the current block, and

a second syntax element of the multiple syntax elements, the second syntax element being alf_luma_prev_filter_idx, and the second syntax element indicative of an index of the filter set from the APS,

a third syntax element of the multiple syntax elements, the third syntax element being alf_luma_fixed_filter_idx, and the third syntax element indicative of an index of the fixed filter set,

wherein the bitstream comprises a fourth syntax element in a slice header, the fourth syntax element being num_alf_aps_ids_luma, and the fourth syntax element indicating a number of adaptive loop filter APSs used for the current region;

wherein the first syntax element is included in the bitstream when a value of the fourth syntax element in the slice header is greater than one and the first syntax element is included in the bitstream when the value of the fourth syntax element in the slice header is equal to one,

wherein the second syntax element indicative of the index of the filter set from the APS is included in the bitstream when a value of the first syntax element is equal to one and the value of the fourth syntax element in the slice header is greater than one, and

wherein the third syntax element is included in the bitstream when the value of the first syntax element is equal to zero.

18. The non-transitory computer-readable recording medium of claim 17, wherein the first syntax element being zero indicating that the fixed filter set is applied to the current block;

wherein the first syntax element being one indicating that the filter set from the APS is applied to the current block;

wherein the bitstream excludes the first syntax element when the value of the fourth syntax element in the slice header is equal to zero, and wherein the first syntax element is inferred to indicate that the fixed filter set is applied to the current block;

wherein the second syntax element indicative of the index of the filter set from the APS is excluded from the bitstream when the value of the fourth syntax element in the slice header is equal to 1;

wherein the current region is a slice;

wherein the second syntax element indicative of the index of the filter set from the APS is coded with a truncated binary method;

wherein a maximum value of the second syntax element indicative of the index of the filter set from the APS is set to a number of allowed ALF APSs for the current region minus K, and wherein K = 1; and

wherein all bins of a binarized bin string of the second syntax element indicative of the index of the filter set from the APS are bypass coded.