COEFFICIENTS CODING IN TRANSFORM SKIP MODE

CROSS REFERENCE TO RELATED APPLICATIONS

[001] This application is based on International Patent Application No. PCT/CN2021/084869, filed on April 1, 2021 which claims the priority to and benefits of International Patent Application No. PCT/CN2020/082983, filed on April 2, 2020. All the aforementioned patent applications are hereby incorporated by reference in their entireties.

TECHNICAL FIELD

[002] This patent document relates to image and video coding and decoding.

BACKGROUND

[003] Digital video accounts for the largest bandwidth use on the internet and other digital communication networks. As the number of connected user devices capable of receiving and displaying video increases, it is expected that the bandwidth demand for digital video usage will continue to grow.

SUMMARY

[004] The present document discloses techniques that can be used by video encoders and decoders for processing coded representation of video using control information useful for decoding of the coded representation.

[005] In one example aspect, a video processing method is disclosed. The method includes performing a conversion between a current block of a video and a bitstream of the video, wherein the bitstream conforms to a rule that specifies that a context index offset is used for including a first sign flag of a first coefficient in the bitstream, wherein the rule specifies that a value of the context index offset is based on whether a first coding mode is applied on the current block in the bitstream.

[006] In another example aspect, a video processing method is disclosed. The method includes performing a conversion between a current block of a video and a bitstream of the video, wherein the bitstream conforms to a rule that specifies that sign flags of the current block are

CLAIMS

1. A method of video processing, comprising:

performing a conversion between a current block of a video and a bitstream of the video,

wherein the bitstream conforms to a first rule that specifies that a context increment is used for including a first sign flag of a first coefficient in the bitstream,

wherein the first rule specifies that a value of the context increment is based on whether a first coding mode is applied on the current block.

2. The method of claim 1,

wherein the first rule specifies that the value of the context increment is within a first range from N0 to N1, inclusive, in case that the first coding mode is not applied, and

wherein the first rule specifies that the value of the context increment is within a second range from N2 to N3, inclusive, in case that the first coding mode is applied.

3. The method of claim 2, wherein, in the first coding mode, a difference between a quantized residual and a prediction of the quantized residual is represented in the bitstream using a pulse coding modulation representation.

4. The method of claim 2 or 3, wherein the first coding mode is a block-based delta pulse code modulation coding mode.

5. The method of any of claims 2-4, wherein N0, N1, N2 and N3 are 0, 2, 3 and 5, respectively.

6. The method of any of claims 1-5,

wherein the value of the context increment is equal to 0 or 3 in response to a first neighboring sign value and a second neighboring sign value meeting a first condition, and the first condition is:

(1) the first neighboring sign value is equal to 0 and the second neighboring sign value is equal to 0, or

(2) the first neighboring sign value is equal to a negative of the second neighboring sign value.

7. The method of claim 6, wherein the first neighboring sign value is equal to 0 in response to a horizontal coordinate of a current coefficient scan location being 0 and is equal to a sign value of a left neighboring coefficient in response to the horizontal coordinate of the current coefficient scan location not being zero, and

wherein the second neighboring sign value is equal to 0 in response to a vertical coordinate of the current coefficient scan location being 0 and is equal to a sign value of an above neighboring coefficient in response to the vertical coordinate of the first coefficient not being 0.

8. The method of claim 6, wherein the value of the context increment is equal to 0 in response to the first coding mode not being applied on the current block, and the value of the context increment is equal to 3 in response to the first coding mode being applied on the current block.

9. The method of claim 6, wherein the value of the context increment is equal to 1 or 4 in response to the first neighboring sign value and the second neighboring sign value not meeting the first condition and in response to the first neighboring sign value and the second neighboring sign value meeting a second condition, and the second condition is:

(1) the first neighboring sign value is greater than or equal to 0 and the second neighboring sign value is greater than or equal to 0.

10. The method of claim 9, wherein the value of the context increment is equal to 1 in response to the first coding mode not being applied on the current block, and the value of the context increment is equal to 4 in response to the first coding mode being applied on the current block.

11. The method of claim 9, wherein the value of the context increment is equal to 2 or 5 in response to the first neighboring sign value and the second neighboring sign value not meeting the first condition and the second condition.

12. The method of claim 11, wherein the value of the context increment is equal to 2 in response to the first coding mode not being applied on the current block, and the value of the context increment is equal to 5 in response to the first coding mode being applied on the current block.

13. The method of any of claims 1-12,

wherein a transform skip operation is applied to the current block.

14. The method of any of claims 1-13, wherein the bitstream conforms to a second rule that specifies use of multiple adaptation parameter set network abstraction layer units for the video,

wherein each adaptation parameter set network abstraction layer unit has a corresponding adaptation parameter set type value,

wherein each adaptation parameter set network abstraction layer unit is associated with a corresponding video layer identifier,

wherein each adaptation parameter set network abstraction layer unit is a prefix unit or a suffix unit, and

wherein the second rule specifies that, responsive to the multiple adaptation parameter set network abstraction layer network abstraction layer units having a particular adaptation parameter set type value, adaptation parameter set identifier values of the multiple adaptation parameter set network abstraction layer units belong to a same identifier space.

15. The method of claim 14, wherein the second rule specifies that multiple adaptation parameter set network abstraction layer units have the particular adaptation parameter set type value independent of multiple video layer identifiers of the multiple adaptation parameter set network abstraction layer units, and whether the multiple adaptation parameter set network abstraction layer units are the prefix unit or the suffix unit.

16. The method of any of claims 1-15, wherein the performing the conversion comprising encoding the video into the bitstream.

17. The method of any of claims 1-15, wherein the performing the conversion comprises decoding the video from the bitstream.

18. 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 video and a bitstream of the video,

wherein the bitstream conforms to a first rule that specifies that a context increment is used for including a first sign flag of a first coefficient in the bitstream,

wherein the first rule specifies that a value of the context increment is based on whether a first coding mode is applied on the current block.

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

perform a conversion between a current block of a video and a bitstream of the video,

wherein the bitstream conforms to a first rule that specifies that a context increment is used for including a first sign flag of a first coefficient in the bitstream,

wherein the first rule specifies that a value of the context increment is based on whether a first coding mode is applied on the current block.

20. 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 of the video,

wherein the bitstream conforms to a first rule that specifies that a context increment is used for including a first sign flag of a first coefficient in the bitstream,

wherein the first rule specifies that a value of the context increment is based on whether a first coding mode is applied on the current block.