SIGNALING OF QUANTIZATION INFORMATION IN CODED VIDEO

CROSS REFERENCE TO RELATED APPLICATIONS

[001] This application is based on International Patent Application No. PCT/CN2021/101390, filed on June 22, 2021, which claims the priority to and benefits of PCT Patent Application No. PCT/CN2020/097390, filed on June 22, 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 to perform video encoding or decoding.

[005] In one example aspect, a method of processing video data is disclosed. The method includes performing a conversion between a current picture of a video and a bitstream of the video according to a rule. The rule specifies that the current picture is a recovery point picture in response to the current picture being a Gradual Decoding Refresh (GDR) picture with a recovery Picture Order Count (POC) count of 0. The recovery POC count specifies a recovery point of decoded pictures in an output order.

[006] In another example aspect, a method of processing video data is disclosed. The method includes performing a conversion between a video and a bitstream of the video according to a rule. The rule specifies that a syntax element of a general constraints information (GCI) syntax structure

CLAIMS

1. A method of processing video data, comprising:

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

wherein a range of a value of a first syntax element specifying a number of points in a quantization parameter (QP) table associated with the conversion of the current video block is dependent on one or more other syntax elements comprising a second syntax element according to a rule, and

wherein the rule specifies that the range of the value of the first syntax element is based on a value of the second syntax element specifying a starting luma and chroma QP used to describe the QP table.

2. The method of claim 1, wherein the QP table is an i-th chroma QP mapping table.

3. The method of claim 2, wherein a maximum allowed value of the first syntax element is equal to (K - the value of the second syntax element), K being a positive integer.

4. The method of claim 3, wherein the second syntax element is represented as sps_qp_table_start_minus26[i] whose value plus 26 specifying the starting luma and chroma QP used to describe the i-th chroma QP mapping table.

5. The method of claim 4, wherein the maximum allowed value of the first syntax element is equal to (36 - sps_qp_table_start_minus26[i]).

6. The method of any of claims 1-5, wherein the current video block is included in a current picture of the video, and

wherein the rule specifies that the current picture is a recovery point picture in response to the current picture being a gradual decoding refresh (GDR) picture with a recovery picture order count (POC) count of 0, and wherein the recovery POC count specifies a recovery point of decoded pictures in an output order.

7. The method of any of claims 1-6, wherein the conversion comprises encoding the video into the bitstream.

8. The method of any of claims 1-6, wherein the conversion comprises decoding the video from the bitstream.

9. 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 video comprising a current video block and a bitstream of the video,

wherein a range of a value of a first syntax element specifying a number of points in a quantization parameter (QP) table associated with the conversion of the current video block is dependent on one or more other syntax elements comprising a second syntax element according to a rule, and

wherein the rule specifies that the range of the value of the first syntax element is based on a value of the second syntax element specifying a starting luma and chroma QP used to describe the QP table.

10. The apparatus of claim 9, wherein the QP table is an i-th chroma QP mapping table.

11. The apparatus of claim 10, wherein a maximum allowed value of the first syntax element is equal to (K - the value of the second syntax element), K being equal to 36, and

wherein the second syntax element is represented as sps_qp_table_start_minus26[i] whose value plus 26 specifying the starting luma and chroma QP used to describe the i-th chroma QP mapping table.

12. The apparatus of any of claims 9-11, wherein the current video block is included in a current picture of the video, and

wherein the rule specifies that the current picture is a recovery point picture in response to the current picture being a gradual decoding refresh (GDR) picture with a recovery picture order count (POC) count of 0, and wherein the recovery POC count specifies a recovery point of decoded pictures in an output order.

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

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

wherein a range of a value of a first syntax element specifying a number of points in a quantization parameter (QP) table associated with the conversion of the current video block is dependent on one or more other syntax elements comprising a second syntax element according to a rule, and

wherein the rule specifies that the range of the value of the first syntax element is based on a value of the second syntax element specifying a starting luma and chroma QP used to describe the QP table.

14. The non-transitory computer-readable storage medium of claim 13, wherein the QP table is an i-th chroma QP mapping table.

15. The non-transitory computer-readable storage medium of claim 14, wherein a maximum allowed value of the first syntax element is equal to (K - the value of the second syntax element), K being equal to 36, and

wherein the second syntax element is represented as sps_qp_table_start_minus26[i] whose value plus 26 specifying the starting luma and chroma QP used to describe the i-th chroma QP mapping table.

16. The non-transitory computer-readable storage medium of any of claims 13-15, wherein the current video block is included in a current picture of the video, and

wherein the rule specifies that the current picture is a recovery point picture in response to the current picture being a gradual decoding refresh (GDR) picture with a recovery picture order count

(POC) count of 0, and wherein the recovery POC count specifies a recovery point of decoded pictures in an output order.

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 of the video comprising a current video block,

wherein a range of a value of a first syntax element specifying a number of points in a quantization parameter (QP) table associated with the conversion of the current video block is dependent on one or more other syntax elements comprising a second syntax element according to a rule, and

wherein the rule specifies that the range of the value of the first syntax element is based on a value of the second syntax element specifying a starting luma and chroma QP used to describe the QP table.

18. The non-transitory computer-readable recording medium of claim 17, wherein the QP table is an i-th chroma QP mapping table.

19. The non-transitory computer-readable recording medium of claim 18, wherein a maximum allowed value of the first syntax element is equal to (K - the value of the second syntax element), K being equal to 36, and

wherein the second syntax element is represented as sps_qp_table_start_minus26[i] whose value plus 26 specifying the starting luma and chroma QP used to describe the i-th chroma QP mapping table.

20. The non-transitory computer-readable recording medium of any of claims 17-19, wherein the current video block is included in a current picture of the video, and

wherein the rule specifies that the current picture is a recovery point picture in response to the current picture being a gradual decoding refresh (GDR) picture with a recovery picture order count (POC) count of 0, and wherein the recovery POC count specifies a recovery point of decoded pictures in an output order.