Reconstruction

The reconstruction unit 314 (e.g. adder or summer 314) may be configured to add the reconstructed residual block 313, to the prediction block 365 to obtain a reconstructed block 315 in the sample domain, e.g. by adding the sample values of the reconstructed residual block 313 and the sample values of the prediction block 365.

Filtering

The loop filter unit 320 (either in the coding loop or after the coding loop) is configured to filter the reconstructed block 315 to obtain a filtered block 321, e.g. to smooth pixel transitions, or otherwise improve the video quality. The loop filter unit 320 may comprise one or more loop filters such as a de-blocking filter, a sample-adaptive offset (SAO) filter or one or more other filters, e.g. a bilateral filter, an adaptive loop filter (ALF), a sharpening, a smoothing filters or a collaborative filters, or any combination thereof. Although the loop filter unit 320 is shown in FIG. 3 as being an in loop filter, in other configurations, the loop filter unit 320 may be implemented as a post loop filter.

Decoded Picture Buffer

The decoded video blocks 321 of a picture are then stored in decoded picture buffer 330, which stores the decoded pictures 331 as reference pictures for subsequent motion compensation for other pictures and/or for output respectively display.

The decoder 30 is configured to output the decoded picture 311, e.g. via output 312, for presentation or viewing to a user.

Prediction

The inter prediction unit 344 may be identical to the inter prediction unit 244 (in particular to the motion compensation unit) and the intra prediction unit 354 may be identical to the intra prediction unit 254 in function, and performs split or partitioning decisions and prediction based on the partitioning and/or prediction parameters or respective information received from the encoded picture data 21 (e.g. by parsing and/or decoding, e.g. by entropy decoding unit 304). Mode application unit 360 may be configured to perform the prediction (intra or inter prediction) per block based on reconstructed pictures, blocks or respective samples (filtered or unfiltered) to obtain the prediction block 365.

When the video slice is coded as an intra coded (I) slice, intra prediction unit 354 of mode application unit 360 is configured to generate prediction block 365 for a picture block of the current video slice based on a signaled intra prediction mode and data from previously decoded blocks of the current picture. When the video picture is coded as an inter coded (i.e., B, or P) slice, inter prediction unit 344 (e.g. motion compensation unit) of mode application

}

}

The variables SubPicLeftBoundaryPos, SubPicTopBoundaryPos, SubPicRightBoundaryPos, and SubPicBotBoundaryPos are derived as follows:

if(subpic_treated_as_pic_flag[SubPicIdx]) {

SubPicLeftBoundaryPos = subpic_ctu_top_left_x[SubPicIdx] * CtbSizeY

SubPicRightBoundaryPos = Min(pic_width_max_in_luma_samples − 1,

(subpic_ctu_top_left_x[SubPicIdx] + subpic_width_minus1[SubPicIdx] + 1

) * CtbSizeY − 1)

SubPicTopBoundaryPos = subpic_ctu_top_left_y[SubPicIdx] *CtbSizeY

SubPicBotBoundaryPos = Min(pic_height_max_in_luma_samples − 1,

(subpic_ctu_top_left_y[SubPicIdx] + subpic_height_minus1[SubPicIdx] + 1

) * CtbSizeY − 1)

}

slice_type specifies the coding type of the slice according to Table 9.

Table 9 – Name association to slice_type

slice_type	Name of slice_type
0	B (B slice)
1	P (P slice)
2	I (I slice)

slice_rpl_sps_flag[i] equal to 1 specifies that reference picture list i of the current slice is derived based on one of the ref_pic_list_struct(listIdx, rplsIdx) syntax structures with listIdx equal to i in the SPS. slice_rpl_sps_flag[i] equal to 0 specifies that reference picture list i of the current slice is derived based on the ref_pic_list_struct(listIdx, rplsIdx) syntax structure with listIdx equal to i that is directly included in the slice headers of the current picture.

When slice_rpl_sps_flag[i] is not present, the following applies:

– If pic_rpl_present_flag is equal to 1, the value of slice_rpl_sps_flag[i] is inferred to be equal to pic_rpl_sps_flag[i].

– Otherwise, if num_ref_pic_lists_in_sps[i] is equal to 0, the value of ref_pic_list_sps_flag[i] is inferred to be equal to 0.

– Otherwise, if num_ref_pic_lists_in_sps[i] is greater than 0 and if rpl1_idx_present_flag is equal to 0, the value of slice_rpl_sps_flag[1] is inferred to be equal to slice_rpl_sps_flag[0].

CLAIMS

1.A method of obtaining a maximum number of geometric partitioning merge mode candidates for video decoding, wherein the method comprises:

obtaining a bitstream for a video sequence;

obtaining a value of a first indicator according to the bitstream, wherein the first indicator represents the maximum number of merging motion vector prediction, MVP, candidates;

obtaining a value of a second indicator according to the bitstream, wherein the second indicator represents whether a geometric partition based motion compensation is enabled for the video sequence; and

parsing a value of a third indicator from the bitstream, when the value of the first indicator is greater than a threshold and when the value of the second indicator is equal to a preset value, wherein the third indicator represents the maximum number of geometric partitioning merge mode candidates subtracted from the value of the first indicator.

2. The method of claim 1, wherein the threshold is 2.

3.The method of claim 1 or 2, wherein the method further comprises:

setting the value of the maximum number of geometric partitioning merge mode candidates to 2, when the value of the first indicator is equal to the threshold and when the value of the second indicator is equal to the preset value.

4. The method of any one of claims 1 to 3, wherein the method further comprises:

setting the value of the maximum number of geometric partitioning merge mode candidates to 0, when the value of the first indicator is less than the threshold or when the value of the second indicator is not equal to the preset value.

5. The method of any one of claims 1 to 4, wherein the preset value is 1.

6. The method of any one of claims 1 to 5, wherein the step of obtaining the value of the second indicator is performed after the step of obtaining the value of the first indicator.

7. The method of claim 6, wherein the value of the second indicator is parsed from a sequence parameter set, SPS, of the bitstream, when the value of the first indicator is greater than or equal to the threshold.

8. The method of any one of claims 1 to 7, wherein the value of the second indicator is obtained from a sequence parameter set, SPS, of the bitstream.

9. The method of any one of claims 1 to 8, wherein the value of the third indicator is obtained from a sequence parameter set, SPS, of the bitstream.

10. A video decoding apparatus, wherein the video decoding apparatus comprises:

a receiving module, which is configured to obtain a bitstream for a video sequence;

an obtaining module, which is configured to obtain a value of a first indicator according to the bitstream, wherein the first indicator represents the maximum number of merging motion vector prediction, MVP, candidates; and wherein

the obtaining module is configured to obtain a value of a second indicator according to the bitstream, wherein the second indicator represents whether a geometric partition based motion compensation is enabled for the video sequence;

a parsing module, which is configured to parse a value of a third indicator from the bitstream, when the value of the first indicator is greater than a threshold and when the value of the second indicator is equal to a preset value, wherein the third indicator represents the maximum number of geometric partitioning merge mode candidates subtracted from the value of the first indicator.

11.The video decoding apparatus of claim 10, wherein the obtaining module is configured to set the value of the maximum number of geometric partitioning merge mode candidates to 2, when the value of the first indicator is equal to the threshold and when the value of the second indicator is equal to the preset value.

12. The video decoding apparatus of claim 10 or 11, wherein the obtaining module is configured to set the value of the maximum number of geometric partitioning merge mode candidates to 0, when the value of the first indicator is less than the threshold or when the value of the second indicator is not equal to the preset value.

13. The video decoding apparatus of any one of claims 10 to 12, wherein the threshold is 2.

14. The video decoding apparatus of any one of claims 10 to 13, wherein the preset value is 1.

15. The video decoding apparatus of any one of claims 10 to 14, wherein the step of obtaining the value of the second indicator is performed after the step of obtaining the value of the first indicator.

16. The video decoding apparatus of claim 15, wherein the value of the second indicator is parsed from a sequence parameter set, SPS, of the bitstream, when the value of the first indicator is greater than or equal to the threshold.

17. The video decoding apparatus of any one of claims 10 to 16, wherein the value of the second indicator is obtained from a sequence parameter set, SPS, of the bitstream.

18. The video decoding apparatus of any one of claims 10 to 17, wherein the value of the third indicator is obtained from a sequence parameter set, SPS, of the bitstream.

19. A decoder, comprising:
one or more processors; and
a non-transitory computer-readable storage medium coupled to the processors and storing programming for execution by the processors, wherein the programming, when executed by the processors, configures the decoder to carry out the method according to any one of the claims 1 to 9.

20. A non-transitory computer-readable medium comprising a bitstream for a video sequence decoded by performing the method of any one of the claims 1 to 9.