

CLAIMS

1. A method of video processing, comprising:
performing a conversion between a video block of a video and a bitstream of the video using a palette mode in which samples of the video block are represented using a palette of representative color values,
wherein a size of the palette of the video block is determined based on whether a local dual tree is applied to the video block.
2. The method of claim 1, wherein in case a local dual tree is applied to a coding unit, a partition operation is applied only on a luma block of the coding unit based on partition parameters of the coding unit; and wherein the partition operation not applicable to at least one chroma block of the coding unit according to a mode type of the coding unit.
3. The method of claim 1 or 2, wherein, in case the local dual tree is applied for the video block, the size of the palette is reduced as compared to a size of the palette in case the local dual tree is not applied for the video block.
4. The method of claim 1 or 2, wherein, in case the local dual tree is applied for the video block, the size of the palette is reduced as compared to a size of the palette in case a regular single tree is applied for the video block.
5. The method of claim 3 or 4, wherein the size of the palette is reduced by half.
6. The method of any of claims 1 to 5, wherein, in case the local dual tree is applied, the size of a palette of a video block of a chroma component is different than the size of a palette of a video block of a luma component.
7. The method of claim 6, wherein the size of a palette of a video block of a chroma component is smaller than the size of a palette of a video block of a luma component.

8. The method of claim 7, wherein the size of a palette of a video block of a chroma component is a half of the size of a palette of a video block of a luma component.
9. A method of video processing, comprising:
 - performing a conversion between a video block of a video and a bitstream of the video using a palette mode in which samples of the video block are represented using a palette of a representative color values,
 - wherein a size of a palette predictor of the video block is based on whether a local dual tree is applied to the video block.
10. The method of claim 9, wherein the size of the palette predictor is reduced in case the local dual tree is applied for the conversion.
11. The method of claim 9 or 10, wherein, in case the local dual tree is applied, the size of a palette predictor of a video block of a chroma component is different than the size of a palette predictor of a video block of a luma component.
12. The method of claim 11, wherein the size of a palette predictor of a video block of a chroma component is smaller than the size of a palette of a video block of a luma component.
13. The method of claim 12, wherein the size of a palette predictor of a video block of a chroma component is reduced by half as compared to the size of a palette of a video block of a luma component.
14. A method of video processing, comprising:
 - performing a conversion between a video block of a video and a bitstream of the video using a palette mode in which samples of the video block are represented using a palette of representative color values,
 - wherein the conversion conforms to a rule specifying that values of escape samples are coded in the bitstream using a quantization parameter constrained by at least a maximum allowed value or a minimum allowed value.

15. The method of claim 14, wherein the escape samples include a subset of the samples that is not categorized to the representative color values of the palette, and wherein the quantization parameter is constrained to be no greater than the maximum allowed value or no smaller than the minimum allowed value.
16. The method of claim 14 or 15, wherein the maximum allowed value is determined based on a binarization method used for the conversion.
17. The method of claim 14 or 15, wherein the maximum allowed value is represented as $(T+B)$, wherein B represents a bit depth.
18. The method of claim 17, wherein T is indicated in a video region in the bitstream.
19. The method of claim 18, wherein T is signaled in a video parameter set, a sequence parameter set, a picture parameter set, a picture header, or a slice header.
20. The method of any of claims 17 to 19, wherein B is equal to a bit depth offset associated with the quantization parameter.
21. The method of claim 20, wherein the maximum allowed value is equal to the bit depth offset associated with the quantization parameter plus T.
22. The method of any of claims 17 to 21, wherein T is a constant.
23. The method of claim 22, wherein T is equal to 23, 35 or 39.
24. The method of claim 22, wherein T is a constant that is smaller than 23, smaller than 35, or smaller than 29.

25. The method of any of claims 14 to 24, wherein the values of the escape samples are coded using a bit length of EG5, EG3, or EG4.

26. A method of video processing, comprising:

performing a conversion between a block of a video and a bitstream of the video according to a rule,

wherein the rule specifies that whether parameters associated with a chroma coding tool are present in an adaptation parameter set of the bitstream is based on a control flag in the adaptation parameter set.

27. The method of claim 26, wherein, in case the control flag is equal to 0, the parameters are omitted in the adaptation parameter set.

28. The method of claim 26 or 27, wherein the parameters include at least a signal flag for a chroma component of an adaptive loop filter, a signal flag for Cb component of an adaptive loop filter, a signal flag for Cr component of an adaptive loop filter, or a signal flag indicating whether a scaling list for a chroma component is present.

29. A method of video processing, comprising:

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

wherein the bitstream conforms to a format rule,

wherein the format rule specifies that a syntax element associated with a quantization parameter is omitted in a picture header of the bitstream in case the video is monochromatic or color components of the video are processed separately.

30. The method of claim 29, wherein the video being monochromatic is determined based on (1) a syntax element ChromaArrayType being equal to 0, (2) a color format of the video being equal to 4:0:0.

31. The method of claim 29 or 30, wherein the syntax element comprises `ph_log2_diff_min_qt_min_cb_intra_slice_luma`, `ph_log2_diff_min_qt_min_cb_intra_slice_chroma`, or `ph_log2_diff_min_qt_min_cb_inter_slice`.
32. A method of video processing, comprising:
- performing a conversion between a video block of a video and a bitstream of the video according to a rule,
- wherein the rule specifies that, for the conversion, a palette mode in which samples of the video block are represented using a palette of representative color values and an adaptive color transform mode in which a color space conversion is carried out in a residual domain are mutually exclusively enabled.
33. The method of claim 32, wherein the adaptive color transform mode is disabled in case the palette mode is applied for the conversion.
34. The method of claim 33, wherein signaling of information of the adaptive color transform mode is omitted for the conversion.
35. The method of claim 34, wherein usage of the adaptive color transform mode is inferred to be disabled.
36. The method of claim 34, wherein the palette mode is disabled in case the adaptive color transform mode is applied for the conversion.
37. The method of claim 36, wherein signaling of information of the palette mode is omitted for the conversion.
38. The method of claim 37, wherein usage of the palette mode is inferred to be disabled.
39. A method of video processing, comprising:

performing a conversion between a video block of a video and a bitstream of the video, wherein an adaptive color transform mode in which a color space conversion is carried out in a residual domain is applied to a residual block of the video block regardless of a color space of the residual block.

40. The method of claim 39, wherein the color space of the residual block comprises a Green-Blue-Red (GBR) color space or a YCbCr color space.

41. A method of video processing, comprising:

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

wherein the video block is coded using a transform skip residual coding tool in which residual coefficients of a transform skipped coding of the video block are coded using context coding process or a bypass coding process; and

wherein, during the conversion, an operation is applied at a beginning or an end of the bypass coding process to a variable that specifies a number of remaining context coded bins allowed in the video block.

42. The method of claim 41, wherein the operation comprises:

storing the number of remaining context coded bins allowed in the video block in a temporary variable; and

setting the variable based on the temporary variable.

43. The method of claim 41 or 42, wherein the operation comprises:

setting the variable to a value N, wherein N is an integer.

44. The method of claim 43, wherein N is smaller than M, and wherein M is equal to 3.

45. The method of claim 43, wherein N is based on another variable or another syntax element.

46. The method of any of claims 41 to 45, wherein whether a syntax element indicating a sign of a coefficient level is coded using the bypass coding process or a context coding process is based on the number of remaining context coded bins allowed in the video block.

47. The method of claim 46, wherein the sign of the coefficient level is coded using the bypass coding process in case the number of remaining context coded bins allowed in the video block is equal to N, N being an integer equal to or greater than 0.

48. The method of claim 46, wherein the sign of the coefficient level is coded using the context coding process in case the number of remaining context coded bins allowed in the video block is greater than or equal to M, N being an integer.

49. A method of video processing, comprising:

performing a conversion between a video block of a video and a bitstream of the video using a transform skip residual coding process, wherein, during the conversion, an operation is applied to a variable indicating whether a syntax element belongs to a particular scan pass.

50. The method of claim 49, wherein the operation comprises:

assigning a value to the variable indicating that a current scan pass is a third or a remainder scan pass.

51. The method of claim 49, wherein the operation comprises:

assigning a value to the variable indicating that a current scan pass is a first scan pass.

52. The method of claim 49, wherein the operation comprises:

assigning a value to the variable indicating that a current scan pass is a second pass or a greater-than-X scan pass.

53. The method of any of claims 49 to 52, wherein the operation comprises:

assigning a first value to the variable at a beginning of a first scan pass; and

assigning a second value to the variable at a beginning of a third or a remainder scan pass, wherein the first value is not equal to the second value.

54. The method of any of claims 49 to 53, wherein whether a syntax element indicating a sign of a coefficient level is coded using the bypass coding process or a context coding process is based on the variable.

55. The method of claim 54, wherein the sign of the coefficient level is coded using the bypass coding process in case the variable indicates that the particular scan pass is a third or a remainder scan pass.

56. The method of claim 54, wherein the sign of the coefficient level is coded using the context coding process in case the variable indicates that the particular scan pass is a first scan pass.

57. A method of video processing, comprising:

performing a conversion between a video block of a video and a bitstream of the video, wherein, during the conversion, whether a syntax element indicating a sign of a coefficient level is coded using a bypass coding process or a context coding process is based on an index of a scan pass in which same syntax elements of one or more coefficients in a region of the video block are coded in an order.

58. The method of claim 57, wherein the conversion is performed using a transform skip residual coding process or a coefficient coding process in which the video block is non-transform-skip coded.

59. A method of video processing, comprising:

performing a conversion between a video block of a video and a bitstream of the video using a transform skip residual coding process,

wherein, during the conversion, whether a syntax element indicating a sign of a coefficient level is coded using a bypass coding process or a context coding process is based on whether the syntax element is signaled in a same scan pass as another syntax element.

60. The method of claim 59, wherein the syntax element is signaled as `sig_coeff_flag` or `par_level_flag`.
61. The method of claim 59, wherein the syntax element is coded using the bypass coding process in case the syntax element is signaled in the same scan pass as `abs_remainder`.
62. The method of any of claims 1 to 61, wherein applicability of the method is based on a characteristic of the video.
63. The method of claim 62, wherein the characteristic comprises a content of the video.
64. The method of claim 62, wherein the characteristic comprises a message signaled in a Decoder Parameter Set, a Sequence Parameter Set, a Video Parameter Set, a Picture Parameter Set, an Adaptation Parameter Set, a picture header, a slice header, a tile group header, a Largest coding unit (LCU), a Coding unit (CU), a LCU row, a group of LCUs, a Transform Unit (TU), a Picture Unit (PU) block, or a video coding unit.
65. The method of claim 62, wherein the characteristic comprises a position of a coding unit, a picture unit, a transform unit, or a block.
66. The method of claim 62, wherein the characteristic comprises a dimension or a shape of the video block and/or a neighboring block of the video block.
67. The method of claim 62, wherein the characteristic comprises a quantization parameter of the video block.
68. The method of claim 62, wherein the characteristic comprises a color format of the video.
69. The method of claim 62, wherein the characteristic comprises a coding tree structure of the video.

70. The method of claim 62, wherein the characteristic comprises a type of a slice, a tile group, or a picture.
71. The method of claim 62, wherein the characteristic comprises a color component of the video block.
72. The method of claim 62, wherein the characteristic comprises a temporal layer identifier.
73. The method of claim 62, wherein the characteristic comprises a profile, a level, or a tier of a video standard.
74. The method of claim 62, wherein the characteristic comprises whether the video block includes an escape sample.
75. The method of claim 74, wherein the method is only applicable in case the video block includes at least one escape sample.
76. The method of claim 62, wherein the characteristic comprises whether the video block is coded using a lossless mode.
77. The method of claim 76, wherein the method is only applicable in case the video block is not coded using the lossless mode.
78. The method of any of claims 1 to 77, wherein the conversion comprises encoding the video into the bitstream.
79. The method of any of claims 1 to 77, wherein the conversion comprises decoding the video from the bitstream.
80. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a palette mode in which samples of the video block are represented using a palette of representative color values, wherein a size of the palette of the video block is determined based on whether a local dual tree is applied for the generating; and

storing the bitstream in a non-transitory computer-readable recording medium.

81. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a palette mode in which samples of the video block are represented using a palette of representative color values, wherein a size of a palette predictor of the video block is based on whether a local dual tree is applied for the generating; and

storing the bitstream in a non-transitory computer-readable recording medium.

82. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a palette mode in which samples of the video block are represented using a palette of representative color values, wherein a subset of the samples that is not categorized to the representative color values of the palette is referred to as escape samples, and wherein the bitstream conforms to a rule specifying that values of the escape samples are determined based on a quantization parameter constrained by at least a maximum allowed value or a minimum allowed value; and

storing the bitstream in a non-transitory computer-readable recording medium.

83. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video according to a format rule specifying that whether parameters associated with a chroma coding tool are present in an adaptation parameter set of the bitstream is based on a control flag in the adaptation parameter set; and

storing the bitstream in a non-transitory computer-readable recording medium.

84. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video according to a format rule specifying that a syntax element associated with a quantization parameter is omitted in a picture header of the bitstream in case the video is monochromatic or color components of the video are processed separately; and

storing the bitstream in a non-transitory computer-readable recording medium.

85. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video, wherein a palette mode in which samples of the video block are represented using a palette of representative color values and an adaptive color transform mode in which a color space conversion is carried out in a residual domain are mutually exclusive; and

storing the bitstream in a non-transitory computer-readable recording medium.

86. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video, wherein an adaptive color transform mode in which a color space conversion is carried out in a residual domain is applied to a residual block of the video block regardless of a color space of the residual block; and

storing the bitstream in a non-transitory computer-readable recording medium.

87. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a transform skip residual coding process, wherein, during the generating, an operation is applied at a beginning or an end of a bypass coding process to a variable that specifies a number of remaining context coded bins allowed in the video block; and

storing the bitstream in a non-transitory computer-readable recording medium.

88. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a transform skip residual coding process, wherein, during the generating, an operation is applied to a variable indicating whether a syntax element belongs to a particular scan pass; and

storing the bitstream in a non-transitory computer-readable recording medium.

89. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video, wherein whether a syntax element indicating a sign of a coefficient level is coded using the bypass coding process or a context coding process is based on an index of a scan pass in which same syntax elements of one or more coefficients in a region of the video block are coded in an order; and

storing the bitstream in a non-transitory computer-readable recording medium.

90. A method for storing bitstream of a video, comprising:

generating a bitstream of the video from a block of the video using a transform skip residual coding process, wherein whether a syntax element indicating a sign of a coefficient level is coded using a bypass coding process or a context coding process is based on whether the syntax element is signaled in a same scan pass as another syntax element; and

storing the bitstream in a non-transitory computer-readable recording medium.

91. A video decoding apparatus comprising a processor configured to implement a method recited in one or more of claims 1 to 90.

92. A video encoding apparatus comprising a processor configured to implement a method recited in one or more of claims 1 to 90.

93. A computer program product having computer code stored thereon, the code, when executed by a processor, causes the processor to implement a method recited in any of claims 1 to 90.

94. 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 a bitstream of the video from a video block of the video using a palette mode in which samples of the video block are represented using a palette of representative color values,

wherein a size of the palette of the video block is determined based on whether a local dual tree is applied to the video block.

95. 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 a bitstream of the video from a video block of a video using a palette mode in which samples of the video block are represented using a palette of a representative color values,
wherein a size of a palette predictor of the video block is based on whether a local dual tree is applied to the video block.
96. 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 a bitstream of the video from a video block of a video using a palette mode in which samples of the video block are represented using a palette of representative color values,
wherein the bitstream conforms to a rule specifying that values of escape samples are coded in the bitstream using a quantization parameter constrained by at least a maximum allowed value or a minimum allowed value.
97. 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 a bitstream of the video from a block of a video according to a format rule,
wherein the format rule specifies that whether parameters associated with a chroma coding tool are present in an adaptation parameter set of the bitstream is based on a control flag in the adaptation parameter set.
98. 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 a bitstream of the video from a block of a video,
wherein the bitstream conforms to a format rule,
wherein the format rule specifies that a syntax element associated with a quantization parameter is omitted in a picture header of the bitstream in case the video is monochromatic or color components of the video are processed separately.

99. 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 a bitstream of the video from a video block of a video according to a rule,

wherein the rule specifies that, for the conversion, a palette mode in which samples of the video block are represented using a palette of representative color values and an adaptive color transform mode in which a color space conversion is carried out in a residual domain are mutually exclusively enabled.

100. 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 a bitstream of the video from a video block of a video, wherein an adaptive color transform mode in which a color space conversion is carried out in a residual domain is applied to a residual block of the video block regardless of a color space of the residual block.

101. 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 a bitstream of the video from a video block of a video,

wherein the video block is coded using a transform skip residual coding tool in which residual coefficients of a transform skipped coding of the video block are coded using context coding process or a bypass coding process; and

wherein, during the conversion, an operation is applied at a beginning or an end of the bypass coding process to a variable that specifies a number of remaining context coded bins allowed in the video block.

102. 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 a bitstream of the video from a video block of a video using a transform skip residual coding process, wherein, during the conversion, an operation is applied to a variable indicating whether a syntax element belongs to a particular scan pass.

103. 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 a bitstream of the video from a video block of a video and a bitstream of the video, wherein, during the conversion, whether a syntax element indicating a sign of a coefficient level is coded using a bypass coding process or a context coding process is based on an index of a scan pass in which same syntax elements of one or more coefficients in a region of the video block are coded in an order.

104. 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 a bitstream of the video from a video block of a video using a transform skip residual coding process,

wherein, during the conversion, whether a syntax element indicating a sign of a coefficient level is coded using a bypass coding process or a context coding process is based on whether the syntax element is signaled in a same scan pass as another syntax element.

105. A method, an apparatus, a bitstream generated according to a method, or a system described in the present document.