

CLAIMS

1. A method of video processing, comprising:
 - determining, for a conversion between a video region of a video and a coded representation of the video, an intra coding characteristic of the video region based on a color format of the video according to a rule; and
 - performing the conversion according to the intra coding characteristic.
2. The method of claim 1, wherein the rule specifies that in case that the color format of the video region is 4:0:0 or 4:4:4, the intra coding characteristic is that all coding modes are enabled for the video region and wherein the coded representation includes a `MODE_TYPE_ALL` value for a syntax element indicating a mode type used for the video region.
3. The method of claims 1-2, wherein the rule specifies that in case that the color format is 4:0:0 or 4:4:4, the coded representation includes a syntax element indicative of a condition for determining a mode type is set to 0.
4. The method of any of claims 1-3, wherein the rule specifies that whether a restriction on a smallest allowed size for an intra coded chroma block in the video region is enabled depends on the color format.
5. The method of claim 4, wherein the rule specifies that the restriction is enabled for 4:2:0 and 4:2:2 formats.
6. The method of claim 4, wherein the rule specifies that the restriction is disabled for 4:0:0 and 4:4:4 formats.
7. A method of video processing, comprising:

performing a conversion between a current video block of a video and a coded representation of the video,

wherein the coded representation conforms to a format rule, and

wherein the format rule specifies a syntax element, modeType, indicative of a coding mode of the current video block, that is equal to either `MODE_TYPE_NO_INTER` that restricts use of the inter coding mode for the conversion, or `MODE_TYPE_NO_INTRA` that restricts use of the intra mode for the conversion.

8. A method of video processing, comprising:

performing a conversion between a video and a coded representation of the video,

wherein the coded representation conforms to a format rule that specifies that a flag indicating a prediction mode constraint is not included in the coded representation in case that a chroma format of the video is 4:2:2, 4:0:0, or 4:4:4.

9. The method of claim 8, wherein in case that the flag is not present, a corresponding value is inferred as 0 or 1.

10. A method of video processing, comprising:

determining, for a conversion between a video region of a video and a coded representation of the video, whether and/or how a restriction on a size of a smallest chroma intra prediction block to the video region is enabled according to a rule; and

performing the conversion based on the determining,

wherein the rule is dependent on whether a color format of the video is 4:2:0 or 4:2:2.

11. A method of video processing, comprising:

determining, for a conversion between a video region of a video and a coded representation of the video, whether a restriction on a size of a smallest chroma intra prediction block to the video region is enabled according to a rule; and

performing the conversion based on the determining,

wherein the rule is dependent on a color format of the video and/or a width (M) and a height (N) of the video region, and

wherein the rule further specifies that, for the video region that is a coding tree node with a BT (binary tree) split, then the restriction on the smallest chroma intra prediction block is disabled in case that 1) the color format of the video is 4:2:2 and 2) that a multiplication of M and N is a value from a set of values, wherein the set of values includes 64.

12. The method of claim 11, wherein the rule further specifies that the restriction on the smallest chroma intra prediction block is enabled in case 1) that the color format of the video is 4:2:2 and 2) that the set of values further includes 32.

13. The method of claim 11, wherein the rule further specifies that the restriction on the smallest chroma intra prediction block is disabled in case 1) that the color format of the video is 4:2:2 and 2) that the set of values further includes 128.

14. The method of claim 11, wherein the rule further specifies, for the video region that is a coding tree node with a split_qt_flag equal to 1, that the restriction on the smallest chroma intra prediction block is enabled in case that the color format of the video is 4:2:2.

15. The method of claim 11, wherein the rule further specifies, for the video region that is a coding tree node with a TT (ternary tree) split, that the restriction on the smallest chroma intra prediction block is enabled in case that the color format of the video is 4:2:2.

16. The method of claim 11, wherein the rule further specifies, for the video region that is a coding tree node with a BT (binary tree) split, that the restriction on the smallest chroma intra prediction block is enabled in case that 1) the color format of the video is 4:2:2 and 2) that the set of values further includes 32.

17. The method of any of claims 11 to 16, wherein the rule further specifies, for the smallest chroma intra prediction block in the video having a 4:2:2 color format, a modeTypeCondition is always equal to 1.
18. The method of any of claims 11 to 17, wherein the rule further specifies, for the smallest chroma intra prediction block in the video having a 4:2:2 color format, only MODE_TYPE_INTRA that allows use of an intra mode, a palette mode, and an intra block copy mode for the conversion is allowed.
19. A method of video processing, comprising:
performing a conversion between a video region of a video and a coded representation of the video according to a restriction on a smallest chroma intra prediction block size,
wherein the coded representation conforms to a format rule that specifies a value of a syntax field in the coded representation, due to a 4:2:2 color format of the video.
20. The method of claim 19, wherein the syntax field corresponds to a modeTypeCondition of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeTypeCondition is always 1.
21. The method of claim 19, wherein the syntax field corresponds to a modeTypeCondition of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeTypeCondition is 0 or 1.
22. The method of claim 19, wherein the syntax field corresponds to a modeTypeCondition of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeTypeCondition is not 2.

23. The method of claim 19, wherein the syntax field corresponds to a modeType of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeType is always equal to MODE_TYPE_INTRA that allows use of an intra mode, a palette mode, and an intra block copy mode.

24. The method of claim 19, wherein the syntax field corresponds to a modeType of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeType is equal to 1) MODE_TYPE_ALL that allows use of an inter coding mode, an intra mode, a palette mode, and an intra block copy mode for the conversion or 2) MODE_TYPE_INTRA that that allows use of an intra mode, a palette mode, and an intra block copy mode.

25. The method of claim 19, wherein the syntax field corresponds to a modeType of the SCIPU block and wherein the format rule further specifies, due to the 4:2:2 color format, that the modeType does not correspond to MODE_TYPE_INTER that allows use of an inter mode only for the conversion.

26. A method of video processing, comprising:

determining, for a conversion between a current video block of a video and a coded representation of the video, an applicability of a partitioning scheme to the current video block according to a rule; and

performing the conversion based on the determining.

27. The method of claim 26, wherein the rule specifies that the determining determines the applicability based on at least one of a mode type used during the conversion or a dimension of the current video block, and wherein the partitioning scheme comprises a BT (binary tree) split and/or a TT (ternary tree) split.

28. The method of claim 27, wherein in case that the mode type is equal to a `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion, the BT split is disallowed for the current video block.
29. The method of claim 27, wherein in case that the mode type is equal to a `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion, the TT split is disallowed for the current video block.
30. The method of claim 27, wherein in case that $M*N$ is less than or equal to 32 and the mode type is equal to `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion, the BT split is disallowed, whereby M and N correspond to a height and a width of the current video block.
31. The method of claim 27, wherein in case that $M*N$ is less than or equal to 64 and the mode type is equal to `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion, the TT split is disallowed, whereby M and N correspond to a height and a width of the current video block.
32. The method of claim 26, wherein the rule specifies to restrict a certain partitioning scheme based on a syntax element, `modeTypeCurr`, that is included in the coded representation and descriptive of a mode type used during the conversion, and wherein the certain partitioning scheme comprises a BT (binary tree) split, a TT (ternary tree) split, and/or QT (quaternary tree) split.
33. The method of claim 32, wherein, due to the `modeTypeCurr` that is equal to `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion, the BT split is disallowed.

34. The method of claim 32, wherein, due to the modeTypeCurr that is equal to MODE_TYPE_INTER that allows use of an inter mode only for the conversion, the TT split is disallowed.

35. The method of claim 32, wherein, due to the modeTypeCurr that is equal to MODE_TYPE_INTER that allows use of an inter mode only for the conversion, the QT split is disallowed.

36. The method of claim 32, wherein the BT split is disallowed in case that the modeTypeCurr that is equal to MODE_TYPE_INTER that allows use of an inter mode only for the conversion and that a luma block size is less than or equal to 32.

37. The method of claim 32, wherein the TT split is disallowed in case that the modeTypeCurr that is equal to MODE_TYPE_INTER that allows use of an inter mode only for the conversion and that a luma block size is less than or equal to 64.

38. A method of video processing, comprising:

determining, for a conversion between a video block of a video and a coded representation of the video, whether an inter mode is enabled according to a rule, and

performing the conversion based on the determining,

wherein the rule specifies that the inter mode is enabled in case that a dual tree partitioning of luma samples is enabled for the video block.

39. The method of claim 38, wherein the coded representation includes a syntax field that is equal to DUAL_TREE_LUMA.

40. The method of claim 38, wherein the coding unit coded in the inter mode contains the luma samples only for color formats with multiple color components.

41. The method of claim 38, wherein the coded representation includes a flag indicative of a prediction mode applied to the video block and the flag is parsed for the video block corresponding to a luma block having a dual tree type.
42. The method of claim 38, wherein the rule further specifies to apply same constraints about the inter mode regardless of whether the dual tree partitioning or a single tree partitioning of the luma samples is enabled for the video block.
43. A method of video processing, comprising:
determining, for a conversion between a video region of a video and a coded representation of the video, based on a rule, whether use of a palette mode is permitted for the video region; and
performing the conversion based on the determining,
wherein the palette mode includes encoding the video region using a palette of representative sample values.
44. The method of claim 43, the rule specifies that the palette mode is allowed in case that a mode type of the video region is equal to `MODE_TYPE_INTRA` that allows use of an intra mode, a palette mode, and an intra block copy mode for the conversion or `MODE_TYPE_INTER` that allows use of an inter mode only for the conversion.
45. The method of claim 43, wherein the rule specifies that the palette mode is allowed independently of a mode type of the video region.
46. The method of claim 43, wherein the rule is based on a slice type and a mode type of the video region.

47. The method of claim 46, wherein the rule specifies that the palette mode is allowed for an I slice with the mode type that is equal to `MODE_TYPE_INTRA` that allows use of an intra mode, a palette mode, and an intra block copy mode for the conversion.
48. The method of claim 46, wherein the rule specifies that the palette mode is allowed for a P/B slice with the mode type that is equal to `MODE_TYPE_INTRA` that allows use of an intra mode, a palette mode, and an intra block copy mode for the conversion.
49. The method of claim 43, wherein the rule further specifies that a local dual tree is disallowed in case that the palette mode is allowed.
50. The method of claim 43, wherein a `modeTypeCondition` is always set 0 in case that the palette mode is enabled.
51. A method of video processing, comprising:
performing a conversion between a current video block of a video and a coded representation of the video,
wherein the coded representation conforms to a format rule,
wherein the format rule specifies a syntax element, `modeType`, that includes a `MODE_TYPE_IBC` that allows use of an intra block copy mode for the conversion or `MODE_TYPE_PALETTE` that allows use of a palette mode for the conversion,
wherein the intra block copy mode includes encoding the current video block using at least a block vector pointing to a video frame containing the current video block, and
wherein the palette mode includes encoding the current video block using a palette of representative sample values.
52. The method of claim 51, wherein the format rule further specifies that the coded representation does not include a `pred_mode_flag`, a `pred_mode_ibc_flag`, and/or a

pre_mode_plt_flag, in case that the modeType is the MODE_TYPE_IBC or the MODE_TYPE_PALETTE.

53. The method of claim 51, wherein the coded representation includes an index indicating a mode type used for the conversion instead of a mode_constraint_flag.

54. The method of any of claims 1 to 53, wherein the conversion includes encoding the video into the coded representation.

55. The method of any of claims 1 to 53, wherein the conversion includes decoding the coded representation to generate the video.

56. A video processing apparatus comprising a processor configured to implement a method recited in any one or more of claims 1 to 55.

57. A computer readable medium storing program code that, when executed, causes a processor to implement a method recited in any one or more of claims 1 to 55.

58. A computer readable medium that stores a coded representation or a bitstream representation generated according to any of the above described methods.