

CLAIMS

1. A method of decoding video data, the method comprising: receiving a bitstream of encoded video data, the encoded video data representing partitioned luma blocks and partitioned chroma blocks, wherein the chroma blocks are partitioned independently of the luma blocks; determining a respective coding mode corresponding to the respective partitioned luma blocks, wherein the respective coding mode includes one or more of a direct mode, a position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform mode, an enhanced multiple transform mode, or an adaptive multiple transform mode; decoding the respective partitioned luma blocks according to the determined respective coding modes; decoding a first syntax element indicating that the respective coding modes associated with the respective partitioned luma blocks are to be used for decoding a first partitioned chroma block, wherein the first partitioned chroma block is aligned with two or more partitioned luma blocks; determining a chroma coding mode for the first partitioned chroma block according to a function of the respective coding mode of a luma sub-block of the two or more partitioned luma blocks; and decoding the first partitioned chroma block in accordance with the determined chroma coding mode.
2. The method of claim 1, wherein the chroma blocks are partitioned independently of the luma blocks such that at least one partitioned chroma block is not aligned with a single partitioned luma block.
3. The method of claim 1, wherein determining the respective coding mode corresponding to the respective partitioned luma blocks comprises: receiving second syntax elements corresponding to the respective partitioned luma blocks, the second syntax elements indicating the respective coding mode; and decoding the second syntax elements corresponding to the respective partitioned luma blocks to determine the respective coding mode.
4. The method of claim 1, wherein determining the respective coding mode corresponding to the respective partitioned luma blocks comprises: selecting one or more respective coding modes from one or more representative locations of the respective partitioned luma blocks.
5. The method of claim 4, wherein selecting the one or more respective coding modes comprises selecting the one or more respective coding modes according to the function.
6. The method of claim 4, wherein the one or more representative locations include a center representative location of the respective partitioned luma blocks, and wherein determining the chroma coding mode for the first partitioned chroma block according to the function comprises: obtaining information indicating the determined respective coding mode stored for the center representative location.
7. The method of claim 4, wherein the one or more representative locations include a corner representative location of the respective partitioned luma blocks, and wherein determining the

chroma coding mode for the first partitioned chroma block according to the function comprises: obtaining information indicating the determined respective coding mode stored for the corner representative location.

8. The method of claim 4, wherein the one or more representative locations comprise one or more sub-blocks.

9. The method of claim 1, further comprising: dividing the respective partitioned luma blocks into respective sub-blocks; and storing information indicating the determined respective coding mode in respective memory locations associated with the respective sub-blocks.

10. The method of claim 9, wherein the function includes a statistical analysis of the information indicating the determined respective coding mode in respective memory locations associated with the respective sub-blocks.

11. The method of claim 10, wherein determining the chroma coding mode for the first partitioned chroma block according to the function comprises: analyzing the information stored in the respective memory locations using one of a gradient or a higher derivative.

12. The method of claim 11, wherein the information includes one or more of an indication of a direct mode for chroma prediction, a prediction direction, motion information, a flag for a position dependent intra prediction combination mode, one or more parameters for the position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform, an enhanced multiple transform, an adaptive multiple transform, or one or more contexts for determining entropy coding data models.

13. The method of claim 1, further comprising: receiving a third syntax element indicating the function.

14. The method of claim 1, the method being executable on a wireless communication device, wherein the device comprises: a memory configured to store the encoded video data; a processor configured to execute instructions to process the encoded video data stored in the memory; and a receiver configured to receive the bitstream of encoded video data.

15. The method of claim 14, wherein the wireless communication device is a mobile station and the bitstream of encoded video data is received by the receiver and modulated according to a cellular communication standard.

16. An apparatus configured to decode video data, the apparatus comprising: a memory configured to store a bitstream of encoded video data; and one or more processors configured to: receive the bitstream of encoded video data, the encoded video data representing partitioned luma blocks and partitioned chroma blocks, wherein the chroma blocks are partitioned independently of the luma blocks; determine a respective coding mode corresponding to the

respective partitioned luma blocks, wherein the respective coding mode includes one or more of a direct mode, a position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform mode, an enhanced multiple transform mode, or an adaptive multiple transform mode; decode the respective partitioned luma blocks according to the determined respective coding modes; decode a first syntax element indicating that the respective coding modes associated with the respective partitioned luma blocks are to be used for decoding a first partitioned chroma block, wherein the first partitioned chroma block is aligned with two or more partitioned luma blocks; determine a chroma coding mode for the first partitioned chroma block according to a function of the respective coding mode of a luma sub-block of the two or more partitioned luma blocks; and decode the first partitioned chroma block in accordance with the determined chroma coding mode.

17. The apparatus of claim 16, wherein the chroma blocks are partitioned independently of the luma blocks such that at least one partitioned chroma block is not aligned with a single partitioned luma block.

18. The apparatus of claim 16, wherein to determine the respective coding mode corresponding to the respective partitioned luma blocks, the one or more processors are further configured to: receive second syntax elements corresponding to the respective partitioned luma blocks, the second syntax elements indicating the respective coding mode; and decode the second syntax elements corresponding to the respective partitioned luma blocks to determine the respective coding mode.

19. The apparatus of claim 16, wherein to determine the respective coding mode corresponding to the respective partitioned luma blocks, the one or more processors are further configured to: select one or more respective coding modes from one or more representative locations of the respective partitioned luma blocks.

20. The apparatus of claim 19, wherein to select the one or more respective coding modes, the one or more processors are further configured to select the one or more respective coding modes according to the function.

21. The apparatus of claim 19, wherein the one or more representative locations include a center representative location of the respective partitioned luma blocks, and wherein to determine the chroma coding mode for the first partitioned chroma block according to the function, the one or more processors are further configured to: obtain information indicating the determined respective coding mode stored for the center representative location.

22. The apparatus of claim 19, wherein the one or more representative locations include a corner representative location of the respective partitioned luma blocks, and wherein to determine the chroma coding mode for the first partitioned chroma block according to the function, the one or more processors are further configured to: obtain information indicating the determined respective coding mode stored for the corner representative location.

23. The apparatus of claim 19, wherein the one or more representative locations comprise one or more sub-blocks.

24. The apparatus of claim 16, wherein the one or more processors are further configured to: divide the respective partitioned luma blocks into respective sub-blocks; and store information indicating the determined respective coding mode in respective memory locations associated with the respective sub-blocks.

25. The apparatus of claim 24, wherein the function includes a statistical analysis of the information indicating the determined respective coding mode in respective memory locations associated with the respective sub-blocks.

26. The apparatus of claim 25, wherein to determine the chroma coding mode for the first partitioned chroma block according to the function, the one or more processors are further configured to: analyze the information stored in the respective memory locations using one of a gradient or a higher derivative.

27. The apparatus of claim 26, wherein the information includes one or more of an indication of a direct mode for chroma prediction, a prediction direction, motion information, a flag for a position dependent intra prediction combination mode, one or more parameters for the position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform, an enhanced multiple transform, an adaptive multiple transform, or one or more contexts for determining entropy coding data models.

28. The apparatus of claim 16, wherein the one or more processors are further configured to: receive a third syntax element indicating the function.

29. The apparatus of claim 16, wherein the apparatus is a wireless communication device, the apparatus further comprising: a receiver configured to receive the bitstream of encoded video data.

30. The apparatus of claim 29, wherein the wireless communication device is a mobile station and the bitstream of encoded video data is received by the receiver and modulated according to a cellular communication standard.

31. An apparatus configured to decode video data, the apparatus comprising: means for receiving a bitstream of encoded video data, the encoded video data representing partitioned luma blocks and partitioned chroma blocks, wherein the chroma blocks are partitioned independently of the luma blocks; means for determining a respective coding mode corresponding to the respective partitioned luma blocks, wherein the respective coding mode includes one or more of a direct mode, a position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform mode, an enhanced multiple transform mode, or an adaptive

multiple transform mode; means for decoding the respective partitioned luma blocks according to the determined respective coding modes; means for decoding a first syntax element indicating that the respective coding modes associated with the respective partitioned luma blocks are to be used for decoding a first partitioned chroma block, wherein the first partitioned chroma block is aligned with two or more partitioned luma blocks; means for determining a chroma coding mode for the first partitioned chroma block according to a function of the respective coding mode of a luma sub-block of the two or more partitioned luma blocks; and means for decoding the first partitioned chroma block in accordance with the determined chroma coding mode.

32. The apparatus of claim 31, wherein the chroma blocks are partitioned independently of the luma blocks such that at least one partitioned chroma block is not aligned with a single partitioned luma block.

33. A non-transitory computer-readable storage medium having instructions stored thereon that, when executed, causes one or more processors configured to decoded video data to: receive the bitstream of encoded video data, the encoded video data representing partitioned luma blocks and partitioned chroma blocks, wherein the chroma blocks are partitioned independently of the luma blocks; determine a respective coding mode corresponding to the respective partitioned luma blocks, wherein the respective coding mode includes one or more of a direct mode, a position dependent intra prediction combination mode, one or more second transform sets for a non-separable transform mode, an enhanced multiple transform mode, or an adaptive multiple transform mode; decode the respective partitioned luma blocks according to the determined respective coding modes; decode a first syntax element indicating that the respective coding modes associated with the respective partitioned luma blocks are to be used for decoding a first partitioned chroma block, wherein the first partitioned chroma block is aligned with two or more partitioned luma blocks; determine a chroma coding mode for the first partitioned chroma block according to a function of the respective coding mode of a luma sub-block of the two or more partitioned luma blocks; and decode the first partitioned chroma block in accordance with the determined chroma coding mode.

34. The non-transitory computer-readable storage medium of claim 33, wherein the chroma blocks are partitioned independently of the luma blocks such that at least one partitioned chroma block is not aligned with a single partitioned luma block.

35. The method of claim 9, wherein the function includes a location of one or more respective sub-blocks of the two or more partitioned luma blocks.

36. The method of claim 35, wherein the location of the one or more respective sub-blocks is a center sub-block of the two or more partitioned luma blocks, and wherein determining the chroma coding mode for the first partitioned chroma block according to the function comprises: obtaining the information indicating the determined respective coding mode stored for the center sub-block.

37. The method of claim 35, wherein the location of the one or more respective sub-blocks is a corner sub-block of the two more partitioned luma blocks, and wherein determining the chroma coding mode for the first partitioned chroma block according to the function comprises: obtaining the information indicating the determined respective coding mode stored for the corner sub-block.

38. The apparatus of claim 24, wherein the function includes a location of one or more respective sub-blocks of the two or more partitioned luma blocks.

39. The apparatus of claim 38, wherein the location of the one or more respective sub-blocks is a center sub-block of the two or more partitioned luma blocks, and wherein to determine the chroma coding mode for the first partitioned chroma block according to the function, the one or more processors are further configured to: obtain the information indicating the determined respective coding mode stored for the center sub-block.

40. The apparatus of claim 38, wherein the location of the one or more respective sub-blocks is a corner sub-block of the two more partitioned luma blocks, and wherein to determine the chroma coding mode for the first partitioned chroma block according to the function, the one or more processors are further configured to: obtain the information indicating the determined respective coding mode stored for the corner sub-block.