CLAIMS

What is claimed is:

1. A method implemented by a decoder, the method comprising:

receiving, by a receiver of the decoder, a bitstream comprising a plurality of pictures;

setting, by the processor, a value of a no output of prior pictures flag (NoOutputOfPriorPicsFlag) when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;

emptying a decoded picture buffer (DPB) without output of contained pictures based on the value of the NoOutputOfPriorPicsFlag;

decoding, by the processor, a current picture; and

storing, by the DPB, the current picture.

2. The method of claim 1, further comprising setting, by the processor, the value of the NoOutputOfPriorPicsFlag when a value of maximum picture height in luma samples (PicHeightMaxInSamplesY) for the current AU is different from a value of PicHeightMaxInSamplesY for the preceding AU in decoding order.

3. The method of any of claims 1-2, wherein the DPB is emptied before decoding the current picture.

4. The method of any of claims 1-3, wherein the DPB is emptied after parsing a slice header of a first slice of the current picture.

5. The method of any of claims 1-4, further comprising decrementing a DPB fullness variable for each picture removed when emptying the DPB.

6. The method of any of claims 1-5, further comprising constructing, by the processor, a reference picture list and performing reference picture list marking for the current AU prior to setting the NoOutputOfPriorPicsFlag.

7. The method of any of claims 1-6, wherein the DPB is emptied when a preceding picture is marked as unused for reference.

8. A non-transitory computer-readable medium storing computer instructions that when executed by at least one hardware processors, cause the at least one hardware processors to perform the method of any one of claims 1 to 8.

9. A decoding device, comprising:

a receiver configured to receive a bitstream comprising a plurality of pictures;

a memory coupled to the receiver, the memory storing instructions; and

a processor coupled to the memory, the processor configured to execute the instructions to cause the decoding device to: perform the method according to any one of claims 1 to 8.

~~8. A method implemented by an encoder, the method comprising:~~

~~encoding, by a processor of the encoder, a plurality of pictures into a bitstream;~~

~~checking, by a hypothetical reference decoder (HRD) operating on the processor, the bitstream for conformance by:~~

~~setting, by the processor, a value of a no output of prior pictures flag (NoOutputOfPriorPicsFlag) when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;~~

~~emptying a decoded picture buffer (DPB) without selecting contained pictures for output based on the value of the NoOutputOfPriorPicsFlag;~~

~~decoding, by the processor, a current picture;~~

~~storing, by the DPB, the current picture; and~~

~~storing, by a memory coupled to the processor, the bitstream for communication toward a decoder.~~

~~9. The method of claim 8, further comprising setting, by the HRD operating on the processor, the value of the NoOutputOfPriorPicsFlag when a value of maximum picture height in luma samples (PicHeightMaxInSamplesY) for the current AU is different from a value of PicHeightMaxInSamplesY for the preceding AU in decoding order.~~

~~10. The method of any of claims 8-9, wherein the DPB is emptied before decoding the current picture.~~

11. The method of any of claims 8-10, wherein the DPB is emptied after parsing a slice header of a first slice of the current picture.

12. The method of any of claims 8-11, further comprising decrementing, by the HRD operating on the processor, a DPB fullness variable for each picture removed when emptying the DPB.

13. The method of any of claims 8-12, further comprising constructing, by the HRD operating on the processor, a reference picture list and performing reference picture list marking.

14. The method of any of claims 8-13, wherein the DPB is emptied when a preceding picture is marked as unused for reference.

15. A video coding device comprising:

a processor, a receiver coupled to the processor, a memory coupled to the processor, and a transmitter coupled to the processor, wherein the processor, receiver, memory, and transmitter are configured to perform the method of any of claims 1-14.

16. A non-transitory computer readable medium comprising a computer program product for use by a video coding device, the computer program product comprising computer executable instructions stored on the non-transitory computer readable medium such that when executed by a processor cause the video coding device to perform the method of any of claims 1-14.

17. A decoder comprising:

a receiving means for receiving a bitstream comprising a plurality of pictures;

a setting means for setting a value of a no output of prior pictures flag (NoOutputOfPriorPicsFlag) when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;

an emptying means for emptying a decoded picture buffer (DPB) without output of contained pictures based on the value of the NoOutputOfPriorPicsFlag;

a decoding means for decoding a current picture;

a storing means for storing the current picture in a decoded picture buffer (DPB); and

an outputting means for outputting the current picture from the DPB for display as part of a decoded video sequence.

18. The decoder of claim 17, wherein the decoder is further configured to perform the method of any of claims 1-7.

19. An encoder comprising:

an encoding means for encoding a plurality of pictures into a bitstream;

a hypothetical reference decoder (HRD) means for checking the bitstream for conformance by:

setting a value of a no output of prior pictures flag (NoOutputOfPriorPicsFlag) when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;

emptying a decoded picture buffer (DPB) without selecting contained pictures for output based on the value of the NoOutputOfPriorPicsFlag;

decoding a current picture; and

storing the current picture in the DPB; and

a storing means for storing the bitstream for communication toward a decoder.

20. The encoder of claim 19, wherein the encoder is further configured to perform the method of any of claims 8-14.

21. A method implemented by a decoder, the method comprising:

receiving, by a receiver of the decoder, a bitstream comprising a plurality of pictures;

emptying a decoded picture buffer (DPB) without output of contained pictures when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;

decoding, by the processor, a current picture; and

storing, by the DPB, the current picture.

22. The method of claim 21, further comprising emptying the DPB without output of contained pictures when a value of maximum picture height in luma samples

(PicHeightMaxInSamplesY) for the current AU is different from a value of PicHeightMaxInSamplesY for the preceding AU in decoding order.

23. The method of any of claims 21-22, wherein the DPB is emptied before decoding the current picture.

24. The method of any of claims 21-23, wherein the DPB is emptied after parsing a slice header of a first slice of the current picture.

25. The method of any of claims 21-24, further comprising decrementing a DPB fullness variable for each picture removed when emptying the DPB.

26. The method of any of claims 21-25, further comprising constructing, by the processor, a reference picture list and performing reference picture list marking for the current AU prior to emptying the DPB.

27. The method of any of claims 21-26, wherein the DPB is emptied when a preceding picture is marked as unused for reference.

28. A method implemented by an encoder, the method comprising:

encoding, by a processor of the encoder, a plurality of pictures into a bitstream;

checking, by a hypothetical reference decoder (HRD) operating on the processor, the bitstream for conformance by:

emptying a decoded picture buffer (DPB) without output of contained pictures when a value of maximum picture width in luma samples (PicWidthMaxInSamplesY) for a current access unit (AU) is different from a value of PicWidthMaxInSamplesY for a preceding AU in decoding order;

decoding, by the processor, a current picture;

storing, by the DPB, the current picture; and

storing, by a memory coupled to the processor, the bitstream for communication toward a decoder.

29. The method of claim 28, further comprising emptying the DPB without output of contained pictures when a value of maximum picture height in luma samples

~~(PicHeightMaxInSamplesY) for the current AU is different from a value of PicHeightMaxInSamplesY for the preceding AU in decoding order.~~

~~30. The method of any of claims 28-29, wherein the DPB is emptied before decoding the current picture.~~

~~31. The method of any of claims 28-30, wherein the DPB is emptied after parsing a slice header of a first slice of the current picture.~~

~~32. The method of any of claims 28-31, further comprising decrementing a DPB fullness variable for each picture removed when emptying the DPB.~~

~~33. The method of any of claims 28-32, further comprising constructing, by the processor, a reference picture list and performing reference picture list marking for the current AU prior to emptying the DPB.~~

~~34. The method of any of claims 28-33, wherein the DPB is emptied when a preceding picture is marked as unused for reference.~~