

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 hypothetical reference decoder (HRD) parameters syntax structure and multiple layers, wherein each of the multiple layers comprises one or more coded pictures and is associated with a same number of coded picture buffer (CPB) delivery schedules, wherein the same number is equal to a value of a syntax element plus one, wherein the syntax element is signaled once in the HRD parameters syntax structure; and
decoding, by a processor of the decoder, a picture from one of the layers to obtain a decoded picture.
2. The method of claim 1, wherein the CPB delivery schedules are associated with a set of bitstream conformance tests performed by an HRD operating on the processor.
3. The method of claim 1, wherein the syntax element is a HRD CPB count minus one (`hrd_cpb_cnt_minus1`), and wherein `hrd_cpb_cnt_minus1` is in a range of zero to thirty one, inclusive.
4. The method of claim 1, wherein the multiple layers are organized into one or more output layer sets (OLSs), and wherein a corresponding CPB delivery schedule for a target OLS is referenced by a schedule index (`ScIdx`) in a range of zero to a value of `hrd_cpb_cnt_minus1`, inclusive.
5. The method of claim 1, wherein each of the CPB delivery schedules is described by a network abstraction layer (NAL) initial CPB removal delay (`nal_initial_cpb_removal_delay`) and a NAL initial CPB removal offset (`nal_initial_cpb_removal_offset`).
6. The method of claim 1, wherein each layer is associated with a buffering period (BP) CPB count minus one (`bp_cpb_cnt_minus1`) plus one that specifies a number of `nal_initial_cpb_removal_delay` and `nal_initial_cpb_removal_offset` pairs for the each layer, and wherein `bp_cpb_cnt_minus1` is equal to the value of `hrd_cpb_cnt_minus1`.

7. The method of claim 1, wherein the HRD parameters HRD parameters is included in the bitstream in a video parameter set (VPS) specifying the OLSs.

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

encoding, by a processor of the encoder, a bitstream comprising a hypothetical reference decoder (HRD) parameters syntax structure and multiple layers, wherein each of the multiple layers comprises one or more coded pictures and is associated with a same number of coded picture buffer (CPB) delivery schedules, wherein the same number is equal to a value of a syntax element plus one, wherein the syntax element is signalled once in the HRD parameters syntax structure; and

performing, by the processor, a bitstream conformance test on each of the multiple layers based on the same number of CPB delivery schedules.

9. The method of claim 8, wherein the set of bitstream conformance tests are performed by a HRD operating on the processor.

10. The method of claim 8, wherein the syntax element is a HRD CPB count minus one (`hrd_cpb_cnt_minus1`), and wherein `hrd_cpb_cnt_minus1` is in a range of zero to thirty one, inclusive.

11. The method of claim 8, wherein the multiple layers are organized into one or more output layer sets (OLSs), and wherein a corresponding CPB delivery schedule for a target OLS is referenced by a schedule index (`ScIdx`) in a range of zero to a value of `hrd_cpb_cnt_minus1`, inclusive.

12. The method of claim 8, wherein each of the CPB delivery schedules is described by a network abstraction layer (NAL) initial CPB removal delay (`nal_initial_cpb_removal_delay`) and a NAL initial CPB removal offset (`nal_initial_cpb_removal_offset`).

13. The method of claim 8, wherein each layer is associated with a buffering period (BP) CPB count minus1 (`bp_cpb_cnt_minus1`) plus one that specifies a number of `nal_initial_cpb_removal_delay` and `nal_initial_cpb_removal_offset` pairs for the each layer, and wherein `bp_cpb_cnt_minus1` is equal to the value of `hrd_cpb_cnt_minus1`.

14. The method of claim 8, wherein the HRD parameters syntax structure is encoded in the bitstream in a video parameter set (VPS) specifying the OLSs.

15. A non-transitory computer readable medium comprising a computer program for use by a video coding device, the computer program 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.

16. A decoder comprising:

a receiving means for receiving a bitstream comprising a hypothetical reference decoder (HRD) parameters syntax structure and multiple layers, wherein each of the multiple layers comprises one or more coded pictures and is associated with a same number of coded picture buffer (CPB) delivery schedules, wherein the same number is equal to a value of a syntax element plus one, wherein the syntax element is signalled once in the HRD parameters syntax structure;

a decoding means for decoding a picture from one of the layers to obtain a decoded picture; and

a forwarding means for forwarding the decoded picture for display as part of a decoded video sequence.

17. The decoder of claim 16, wherein the decoder is further configured to perform the method of any of claims 2-7.

18. An encoder comprising:

an encoding means for:

encoding a bitstream comprising a hypothetical reference decoder (HRD) parameters syntax structure and multiple layers, wherein each of the multiple layers comprises one or more coded pictures and is associated with a same number of coded picture buffer (CPB) delivery schedules, wherein the same number is equal to a value of a syntax element plus one, wherein the syntax element is signalled once in the HRD parameters syntax structure; and

a HRD means for performing a bitstream conformance test on each of the multiple layers based on the same number of CPB delivery schedules; and

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

19. The encoder of claim 18, wherein the encoder is further configured to perform the method of any of claims 9-14.

20. A computer-readable medium comprising a bitstream encoded or decoded by the method of any one of claims 1-14.