CLAIMS

1. A method of decoding, comprising:

receiving a video bitstream including a plurality of layers having sublayers and a video parameter set (VPS) including a flag, wherein the flag, when having a first value, specifies that syntax elements including a first syntax element for specifying a first temporal identifier (ID) of a highest sublayer representation for level information and a second syntax element for specifying a second temporal identifier (ID) of a highest sublayer representation for decoded picture buffer (DPB) parameters are not present in the VPS and that each of the syntax elements should be inferred to be equal to a value of a third syntax element, wherein the value of the third syntax element plus 1 specifies a maximum number of the sublayers that may be present in a layer of the plurality of layers specified by the VPS;

obtaining the level information corresponding to the first temporal ID and/or the DPB parameters corresponding to the second temporal ID; and

decoding by using the level information and/or the DPB parameters, one of the plurality of layers to obtain a decoded picture.

2. The method of claim 1, wherein the first value is one, and wherein the value of the third syntax element is in the range of zero to six.

3. The method of any of claims 1 to 2, wherein the flag, when having a second value, specifies that the syntax elements are present in the VPS, and wherein the second value is zero.

4. The method of any one of claims 1 to 3, wherein the flag is present in the VPS when a value of a fourth syntax element is greater than zero and the value of the third syntax element is greater than zero, wherein the value of the fourth syntax element plus 1 specifies a maximum allowed number of layers in each coded video sequence (CVS) referring to the VPS.

5. The method of any of claims 1 to 4, wherein the level information is present in an i-th profile_tier_level( ) syntax structure in the VPS.

6. The method of any of claims 1 to 5, wherein the DPB parameters are present in an i-th dpb_parameters( ) syntax structure in the VPS.

7. The method of any of claims 1 to 8, further comprising inferring the first temporal ID as the value of the third syntax element; and/or inferring the second temporal ID as the value of the third syntax element.

8. A method of encoding, comprising:

generating a plurality of layers having sublayers and a video parameter set (VPS) including a flag, wherein the flag, when having a first value, specifies that syntax elements including a first syntax element for specifying a first temporal identifier (ID) of a highest sublayer representation for level information and a second syntax element for specifying a second temporal ID of a highest sublayer representation for decoded picture buffer (DPB) parameters are not present in the VPS and that each of the syntax elements should be inferred to be equal to a value of a third syntax element, wherein the value of the third syntax element plus 1 specifies a maximum number of the sublayers that may be present in a layer of the plurality of layers specified by the VPS;

encoding the plurality of layers and the VPS into a video bitstream.

9. The method of claim 8, wherein the first value is one, and wherein the value of the third syntax element is in a range of zero to six.

10. The method of claim 8 or 9, wherein the flag, when having a second value, specifies that the syntax elements are present in the VPS, and wherein the second value is zero.

11. The method of any one of claims 8 to 10, wherein the flag is present in the VPS when a value of a fourth syntax element is greater than zero and the value of the third syntax element is greater than zero, wherein the value of the fourth syntax element plus 1 specifies a maximum allowed number of layers in each coded video sequence (CVS) referring to the VPS.

12. The method of claim 11, wherein the first syntax element is designated as vps_ptl_max_tid[i], wherein the second syntax element is designated as vps_dpb_max_tid[i],

wherein the third syntax element is designated as vps_max_sublayers_minus1, and wherein the fourth syntax element is designated as vps_max_layers_minus1.

13. The method of any one of claims 8-12, further comprising:

storing the video bitstream for communication toward a video decoder; or

transmitting the video bitstream toward a video decoder.

14. A decoding device, comprising:

a receiver configured to receive a video bitstream including a plurality of layers having sublayers and a video parameter set (VPS) including a flag, wherein the flag, when having a first value, specifies that syntax elements including a first syntax element for specifying a first temporal identifier (ID) of a highest sublayer representation for level information and a second syntax element for specifying a second temporal identifier (ID) of a highest sublayer representation for decoded picture buffer (DPB) parameters are not present in the VPS and that each of the syntax elements should be inferred to be equal to a value of a third syntax element, wherein the value of the third syntax element plus 1 specifies a maximum number of the sublayers that may be present in a layer of the plurality of layers specified by the VPS; and

a processor coupled to the memory, the processor configured to execute the instructions to cause the decoding device to:

obtain the level information corresponding to the first temporal ID and/or the DPB parameters corresponding to the second temporal ID; and

decode by using the level information and/or the DPB parameters, one of the plurality of layers to obtain a decoded picture.

15. The decoding device of claim 14, wherein of the first value is one and wherein the value of the third syntax element is in the range of zero to six.

16. The decoding device of any of claims 14 to 15, wherein the flag, when having a second value, specifies that the syntax elements are present in the VPS, and wherein the second value is zero.

17. The decoding device of any of claims 14 to 16, wherein the flag is present in the VPS when a value of a fourth syntax element is greater than zero and the value of the third syntax element is greater than zero, wherein the value of the fourth syntax element plus 1 specifies a maximum allowed number of layers in each coded video sequence (CVS) referring to the VPS.

18. The decoding device of any of claims 14 to 17, wherein the level information is present in an i-th profile_tier_level( ) syntax structure in the VPS and the DPB parameters are present in an i-th dpb_parameters( ) syntax structure in the VPS.

19. The decoding device of any of claims 10 to 14, wherein the device is configured to infer the first temporal ID as the value of the third syntax element; and/or infer the second temporal ID as the value of the third syntax element.

20. A coding apparatus, comprising:

a receiver configured to receive a picture to encode or to receive a bitstream to decode;

a transmitter coupled to the receiver, the transmitter configured to transmit the bitstream to a decoder or to transmit a decoded image to a display;

a memory coupled to at least one of the receiver or the transmitter, the memory configured to store instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to perform the method in any of claims 1 to 13.

21. A system, comprising:

an encoder; and

a decoder in communication with the encoder, wherein the decoder includes the decoding device, or the coding apparatus of any of claims 14 to 19.

22. A means for coding, comprising:

receiving means configured to receive a picture to encode or to receive a bitstream to decode;

transmission means coupled to the receiving means, the transmission means configured to transmit the bitstream to a decoding means or to transmit a decoded image to a display means;

storage means coupled to at least one of the receiving means or the transmission means, the storage means configured to store instructions; and

processing means coupled to the storage means, the processing means configured to execute the instructions stored in the storage means to perform the method in any of claims 1 to 13.