WHAT IS CLAIMED IS:

1. A method of decoding an encoded video bitstream using at least one processor, the method comprising:

obtaining from the encoded video bitstream a coded video sequence (CVS) including a picture unit corresponding to a coded picture;

obtaining a picture header (PH) network abstraction layer (NAL) unit included in the picture unit;

obtaining at least one video coding layer (VCL) NAL unit included in the picture unit;

decoding the coded picture based on the PH NAL unit, the at least one VCL NAL unit, and an adaptation parameter set (APS) included in an APS NAL unit obtained from the coded video sequence; and

outputting the decoded picture,

wherein the APS NAL unit is available to the at least one processor before the at least one VCL NAL unit,

wherein the APS NAL unit is available to the at least one processor prior to being referenced by one or more picture headers (PHs) or one or more coded slice NAL units included in the CVS, and

wherein the APS NAL unit is included in at least one prediction unit (PU) having a nuh_layer_id value that is equal to a lowest nuh_layer_id value of the one or more coded slice NAL units that refer to the APS NAL unit.

2. The method of claim 1, wherein a temporal identifier of the at least one VCL NAL unit is greater than or equal to a temporal identifier of the APS NAL unit.

3. The method of claim 1, wherein a picture order count (POC) of the at least one VCL NAL unit is greater than or equal to a POC of the APS NAL unit.

4. The method of claim 1, wherein a layer identifier of the PH NAL unit and a layer identifier of the at least one VCL NAL unit are greater than or equal to a layer identifier of the APS NAL unit.

5. The method of claim 1, wherein the PH NAL unit, the at least one VCL NAL unit, and the APS NAL unit are included in a single access unit.

6. The method of claim 1, wherein the coded video sequence further comprises a step-wise temporal sublayer access (STSA) NAL unit corresponding to an STSA picture, and

wherein the STSA NAL unit is not located between the APS NAL unit and the at least one VCL NAL unit.

7. The method of claim 6, wherein the PH NAL unit, the at least one VCL NAL unit, the APS NAL unit, and the STSA NAL unit are included in a single access unit.

8. The method of claim 6, wherein a temporal identifier of the APS NAL unit is greater than or equal to a temporal identifier of the STSA NAL unit.

9. The method of claim 6, wherein a picture order count (POC) of the APS NAL unit is greater than or equal to a POC of the STSA NAL unit.

10. A device for decoding an encoded video bitstream, the device comprising:

at least one memory configured to store program code; and

at least one processor configured to read the program code and operate as instructed by the program code, the program code including:

first obtaining code configured to cause the at least one processor to obtain from the encoded video bitstream a coded video sequence including a picture unit corresponding to a coded picture;

second obtaining code configured to cause the at least one processor to obtain a picture header (PH) network abstraction layer (NAL) unit included in the picture unit;

third obtaining code configured to cause the at least one processor to obtain at least one video coding layer (VCL) NAL unit included in the picture unit;

decoding code configured to cause the at least one processor to decode the coded picture based on the PH NAL unit, the at least one VCL NAL unit, and an adaptation parameter set (APS) included in an APS NAL unit obtained from the coded video sequence; and

output code configured to cause the at least one processor to output the decoded picture,

wherein the APS NAL unit is available to the at least one processor before the at least one VCL NAL unit,

wherein the APS NAL unit is available to the at least one processor prior to being referenced by one or more picture headers (PHs) or one or more coded slice NAL units included in the CVS, and

wherein the APS NAL unit is included in at least one prediction unit (PU) having a nuh_layer_id value that is equal to a lowest nuh_layer_id value of the one or more coded slice NAL units that refer to the APS NAL unit.

11. The device of claim 10, wherein a temporal identifier of the at least one VCL NAL unit is greater than or equal to a temporal identifier of the APS NAL unit.

12. The device of claim 10, wherein a picture order count (POC) of the at least one VCL NAL unit is greater than or equal to a POC of the APS NAL unit.

13. The device of claim 10, wherein a layer identifier of the PH NAL unit and a layer identifier of the at least one VCL NAL unit are greater than or equal to a layer identifier of the APS NAL unit.

14. The device of claim 10, wherein the PH NAL unit, the at least one VCL NAL unit, and the APS NAL unit are included in a single access unit.

15. The device of claim 10, wherein the coded video sequence further comprises a step-wise temporal sublayer access (STSA) NAL unit corresponding to an STSA picture, and

wherein the STSA NAL unit is not located between the APS NAL unit and the at least one VCL NAL unit.

16. The device of claim 15, wherein the PH NAL unit, the at least one VCL NAL unit, the APS NAL unit, and the STSA NAL unit are included in a single access unit.

17. The device of claim 15, wherein a temporal identifier of the APS NAL unit is greater than or equal to a temporal identifier of the STSA NAL unit.

18. The device of claim 15, wherein a picture order count (POC) of the APS NAL unit is greater than or equal to a POC of the STSA NAL unit.

19. A non-transitory computer-readable medium storing instructions, the instructions comprising: one or more instructions that, when executed by one or more processors of a device for decoding an encoded video bitstream, cause the one or more processors to:

obtain from the encoded video bitstream a coded video sequence including a picture unit corresponding to a coded picture;

obtain a picture header (PH) network abstraction layer (NAL) unit included in the picture unit;

obtain at least one video coding layer (VCL) NAL unit included in the picture unit;

decode the coded picture based on the PH NAL unit, the at least one VCL NAL unit, and an adaptation parameter set (APS) included in an APS NAL unit obtained from the coded video sequence; and

output the decoded picture,

wherein the APS NAL unit is available to the at least one processor before the at least one VCL NAL unit,

wherein the APS NAL unit is available to the one or more processors prior to being referenced by one or more picture headers (PHs) or one or more coded slice NAL units included in the CVS, and

wherein the APS NAL unit is included in at least one prediction unit (PU) having a nuh_layer_id value that is equal to a lowest nuh_layer_id value of the one or more coded slice NAL units that refer to the APS NAL unit.