CLAIMS:

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

obtaining a coded video sequence from the encoded video bitstream;

obtaining a picture unit from the coded video sequence;

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

obtaining at least one coded slice NAL unit corresponding to the PH NAL unit;

obtaining a picture parameter set (PPS) included in a PPS NAL unit from the coded video sequence, wherein the PPS NAL unit is referenced by the PH NAL unit and the coded slice NAL unit, and wherein the PPS NAL unit includes a first layer identifier of the PPS NAL unit;

obtaining a sequence parameter set (SPS) included in an SPS NAL unit from the coded video sequence, wherein the SPS NAL unit, which includes the SPS, is directly referenced by the PPS NAL unit, wherein the SPS NAL unit includes a second layer identifier of the SPS NAL unit, and wherein a value of the first layer identifier of the PPS NAL unit is greater than a value of the second layer identifier of the SPS NAL unit;

decoding a coded picture based on the PH NAL unit, the at least one coded slice NAL unit, the PPS NAL unit, and the SPS NAL unit; and

outputting the decoded picture,

wherein the SPS NAL unit is available to the at least one processor before the PPS NAL unit, the PPS NAL unit is available to the at least one processor before the PH NAL unit and the at least one coded slice NAL unit, and

the coded video sequence further comprises a step-wise temporal sublayer access (STSA) NAL unit corresponding to an STSA picture, and the STSA NAL unit is not located between the PPS NAL unit and the at least one coded slice NAL unit, and wherein

the PH NAL unit, the at least one coded slice NAL unit, the PPS NAL unit, and the STSA NAL unit are included in a single access unit.

2. The method of claim 1, wherein a temporal identifier of the SPS NAL unit is equal to zero.

3. The method of claim 1, wherein a layer identifier of the at least one coded slice NAL unit is greater than or equal to the first layer identifier of the PPS NAL unit.

4. The method of claim 1, wherein a temporal identifier of the PPS NAL unit is equal to a temporal identifier of the STSA NAL unit.

5. The method of any one of claims 1 to 4, wherein a picture order count (POC) of the PPS NAL unit is greater than or equal to a POC of the STSA NAL unit.

6. 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 a coded video sequence from the encoded video bitstream;

second obtaining code configured to cause the at least one processor to obtain a picture unit from the coded video sequence;

third 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;

fourth obtaining code configured to cause the at least one processor to obtain at least one coded slice NAL unit corresponding to the PH NAL unit;

fifth obtaining code configured to cause the at least one processor to obtain a picture parameter set (PPS) included in a PPS NAL unit from the coded video sequence, wherein the PPS NAL unit is referenced by the PH NAL unit and the coded slice NAL unit, and the PPS NAL unit includes a first layer identifier of the PPS NAL unit;

sixth obtaining code configured to cause the at least one processor to obtain a sequence parameter set (SPS) included in an SPS NAL unit from the coded video sequence, wherein the SPS NAL unit, which includes the SPS, is directly referenced by the PPS NAL unit, wherein the SPS NAL unit includes a second layer identifier of the SPS NAL unit, and wherein a value of the first layer identifier of the PPS NAL unit is greater than a value of the second layer identifier of the SPS NAL unit;

decoding code configured to cause the at least one processor to decode a coded picture based on the PH NAL unit, the at least one coded slice NAL unit, the PPS NAL unit, and the SPS NAL unit; and

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

wherein the SPS NAL unit is available to the at least one processor before the PPS NAL unit, the PPS NAL unit is available to the at least one processor before the PH NAL unit and the at least one coded slice NAL unit, and

the coded video sequence further comprises a step-wise temporal sublayer access (STSA) NAL unit corresponding to an STSA picture, and the STSA NAL unit is not located between the PPS NAL unit and the at least one coded slice NAL unit, and wherein

the PH NAL unit, the at least one coded slice NAL unit, the PPS NAL unit, and the STSA NAL unit are included in a single access unit.

7. The device of claim 6, wherein a temporal identifier of the SPS NAL unit is equal to zero.

8. The device of claim 6, wherein a layer identifier of the at least one coded slice NAL unit is greater than or equal to the first layer identifier of the PPS NAL unit.

9. The device of claim 6, wherein a temporal identifier of the PPS NAL unit is equal to a temporal identifier of the STSA NAL unit.

10. The device of any one of claims 6 to 9, wherein a picture order count (POC) of the PPS NAL unit is greater than or equal to a POC of the STSA NAL unit.

11. A 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 execute the method of any one of claims 1 to 5.