CLAIMS

1. A video encoder configured to:

encode, into a video data stream, a plurality of access units, the plurality of access units comprising:

a first access unit, and

a second access unit; and

encode, into the video data stream, a delay_for_concatenation_ensured_flag corresponding to the first access unit,

in response to the delay_for_concatenation_ensured_flag having a value of 1, determine that the first access unit is at a position in the video data stream where splicing will be seamless with the second access unit when the second access unit has a buffering period supplemental enhancement information (BP SEI) message with:

a concatenation_flag equal to 1, and

a selected InitCpbRemovalDelay less than or equal to the value of max_initial_removal_delay_for_concatination.

2. The video encoder of claim 1, wherein seamless splicing indicates that a Coded Picture Buffer (CPB) removal time distance between the first access unit associated with the delay_for_concatenation_ensured_flag having the value of 1 and the second access unit is the same as consecutive access units in the first access unit.

3. The video encoder of claim 1, further configured to:

encode, into the video data stream, a BP SEI message that designates a temporal sublayer,

wherein encoding the delay_for_concatenation_ensured_flag is only performed for access units associated with the temporal sublayer.

4. The video encoder of claim 1, further configured to:

encode, into the video data stream, a BP SEI message that designates the first access unit,

wherein encoding the delay_for_concatenation_ensured_flag is only performed for the first access unit.

5. The video encoder of claim 4, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor, and

the first subset of access units includes all of the access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder of zero, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder of zero.

6. The video encoder of claim 4, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor and a signaled remainder, and

a first subset of access units includes all access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder.

7. A video decoder configured to:

decode, from a video data stream, a plurality of access units, the plurality of access units comprising:

a first access unit, and

a second access unit; and

decode, from the video data stream, a delay_for_concatenation_ensured_flag corresponding to the first access unit,

in response to the delay_for_concatenation_ensured_flag having a value of 1, determine that the first access unit is at a position in the video data stream where splicing will be seamless with the second access unit when the second access unit has a buffering period supplemental enhancement information (BP SEI) message with:

a concatenation_flag equal to 1, and

a selected InitCpbRemovalDelay less than or equal to the value of max_initial_removal_delay_for_concatination.

8. The video decoder of claim 7, wherein seamless splicing indicates that a Coded Picture Buffer (CPB) removal time distance between the first access unit associated with the delay_for_concatenation_ensured_flag having the value of 1 and the second access unit is the same as consecutive access units in the first access unit.

9. The video decoder of claim 7, further configured to:

decode, from the video data stream, a BP SEI message that designates a temporal sublayer,

wherein decoding the delay_for_concatenation_ensured_flag is only performed for access units associated with the temporal sublayer.

10. The video decoder of claim 7, further configured to:

decode, from the video data stream, a BP SEI message that designates the first access unit,

wherein decoding the delay_for_concatenation_ensured_flag is only performed for the first access unit.

11. The video decoder of claim 10, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor, and

a first subset of access units includes all access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder of zero, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder of zero.

12. The video decoder of claim 10, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor and a signaled remainder, and

a first subset of access units includes all access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder.

13. A video decoding method comprising:

decoding, from a video data stream, a plurality of access units, the plurality of access units comprising:

a first access unit, and

a second access unit; and

decoding, from the video data stream, a delay_for_concatenation_ensured_flag corresponding to the first access unit,

in response to the delay_for_concatenation_ensured_flag having a value of 1, determining that the first access unit is at a position in the video data stream where splicing will be seamless

with the second access unit when the second access unit has a buffering period supplemental enhancement information (BP SEI) message with:

a concatenation_flag equal to 1, and

a selected InitCpbRemovalDelay less than or equal to the value of max_initial_removal_delay_for_concatination.

14. The video decoding method of claim 13, wherein seamless splicing indicates that a Coded Picture Buffer (CPB) removal time distance between the first access unit associated with the delay_for_concatenation_ensured_flag having the value of 1 and the second access unit is the same as consecutive access units in the first access unit.

15. The video decoding method of claim 13, further comprising:

decoding, from the video data stream, a BP SEI message that designates a temporal sublayer,

wherein decoding the delay_for_concatenation_ensured_flag is only performed for access units associated with the temporal sublayer.

16. The video decoding method of claim 13, further comprising:

decoding, from the video data stream, a BP SEI message that designates the first access unit,

wherein decoding the delay_for_concatenation_ensured_flag is only performed for the access unit.

17. The video decoding method of claim 16, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor, and

a first subset of access units includes all access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder of zero, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder of zero.

18. The video decoding method of claim 16, wherein:

the BP SEI message that designates the first access unit includes a signaled divisor and a signaled remainder, and

a first subset of access units includes all access units that:

have a cpb_removal_delay_minus1 that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder, or

have a dpb_output_delay that, when divided by the signaled divisor, has a remainder that is equal to the signaled remainder.

19. A method of encoding a video, the method comprising:

encoding, into a video data stream, a plurality of access units, the plurality of access units comprising:

a first access units, and

a second access units; and

encoding, into the video data stream, a delay_for_concatenation_ensured_flag corresponding to the first access unit,

in response to the delay_for_concatenation_ensured_flag having a value of 1, determine that the first access unit is at a position in the video data stream where splicing will be seamless with the second access unit when the second access unit has a buffering period supplemental enhancement information (BP SEI) message with:

a concatenation_flag equal to 1, and

a selected InitCpbRemovalDelay less than or equal to the value of max_initial_removal_delay_for_concatination.