Claims

1. An apparatus (200) for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the apparatus (200) is configured to generate an output video data stream from the input video data stream,

wherein the apparatus (200) is to determine whether a picture of the video preceding a dependent random access picture shall be output or not.

2. An apparatus (200) according to claim 1,

wherein the apparatus (200) is configured to determine a first variable (NoOutputBeforeDrapFlag) indicating whether the picture of the video that precedes the dependent random access picture shall be output or not.

3. An apparatus (200) according to claim 2,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises an indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not.

4. An apparatus (200) according to claim 3,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises supplemental enhancement information comprising the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not.

5. An apparatus (200) according to claim 3,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises a flag (ph_pic_output_flag) having a predefined value (0) in a picture header of the independent random access picture, such that the predefined value (0) of the flag (ph_pic_output_flag) indicates for the independent random access picture directly precedes said dependent random access picture within the video data stream, and that said independent random access picture shall not be output.

6. An apparatus (200) according to claim 5,

wherein the flag is a first flag, wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises a further flag in a picture parameter set of the video data stream, wherein the further flag indicates whether or not the first flag (ph_pic_output_flag) exists in the picture header of the independent random access picture.

7. An apparatus (200) according to claim 3,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises as the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not

a supplemental enhancement information flag within a supplemental enhancement information of the output video data stream, or

a picture parameter set flag within a picture parameter set of the output video data stream, or

a sequence parameter set flag within a sequence parameter set of the output video data stream, or

an external means flag, wherein a value of the external means flag is set by an external unit being external to the apparatus (200).

8. An apparatus (200) according to one of claims 2 to 7,

wherein the apparatus (200) is configured to determine a value of a second variable (PictureOutputFlag) for the picture of the video that precedes the dependent random access picture depending on the first variable (NoOutputBeforeDrapFlag), wherein the second variable (PictureOutputFlag) indicates for said picture whether said picture shall be output or not, and wherein the apparatus (200) is configured to output or to not output said picture depending on the second variable (PictureOutputFlag).

9. An apparatus (200) according to one of claims 2 to 8,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the first variable (NoOutputBeforeDrapFlag) indicates that the independent random access picture shall not be output.

10. An apparatus (200) according to one of claims 2 to 8,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the apparatus (200) is configured to set the first variable (NoOutputBeforeDrapFlag) such that the first variable (NoOutputBeforeDrapFlag) indicates that the independent random access picture shall be output.

11. An apparatus (200) according to one of the preceding claims,

wherein the apparatus (200) is configured to signal to a video decoder (300), whether a picture of the video preceding a dependent random access picture shall be output or not.

12. A video data stream,

wherein the video data stream has a video encoded thereinto,

wherein the video data stream comprises an indication that indicates whether a picture of the video preceding a dependent random access picture shall be output or not.

13. A video data stream according to claim 12,

wherein the video data stream comprises supplemental enhancement information comprising the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not.

14. A video data stream according to claim 12,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the video data stream comprises a flag (ph_pic_output_flag) having a predefined value (0) in a picture header of the independent random access picture, such that the predefined value (0) of the flag (ph_pic_output_flag) indicates for the independent random access picture directly precedes said dependent random access picture within the video data stream, and that said independent random access picture shall not be output.

15. A video data stream according to claim 14,

wherein the flag is a first flag, wherein the video data stream comprises a further flag in a picture parameter set of the video data stream, wherein the further flag indicates whether or not the first flag (ph_pic_output_flag) exists in the picture header of the independent random access picture.

16. A video data stream according to claim 12,

wherein the video data stream comprises as the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not

a supplemental enhancement information flag within a supplemental enhancement information of the output video data stream, or

a picture parameter set flag within a picture parameter set of the output video data stream, or

a sequence parameter set flag within a sequence parameter set of the output video data stream.

17. A video encoder (100),

wherein the video encoder (100) is configured to encode a video into a video data stream,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises an indication that indicates whether a picture of the video preceding a dependent random access picture shall be output or not.

18. A video encoder (100) according to claim 17,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises supplemental enhancement information comprising the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not.

19. A video encoder (100) according to claim 17,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a flag (ph_pic_output_flag) having a predefined value (0) in a picture header of the independent random access picture, such that the predefined value (0) of the flag (ph_pic_output_flag) indicates for the independent random access picture directly precedes said dependent random

access picture within the video data stream, and that said independent random access picture shall not be output.

20. A video encoder (100) according to claim 19,

wherein the flag is a first flag, wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a further flag in a picture parameter set of the video data stream, wherein the further flag indicates whether or not the first flag (ph_pic_output_flag) exists in the picture header of the independent random access picture.

21. A video encoder (100) according to claim 17,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises as the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not

a supplemental enhancement information flag within a supplemental enhancement information of the output video data stream, or

a picture parameter set flag within a picture parameter set of the output video data stream, or

a sequence parameter set flag within a sequence parameter set of the output video data stream.

22. A video decoder (300) for receiving a video data stream having a video stored therein,

wherein the video decoder (300) is configured to decode the video from the video data stream,

wherein the video decoder (300) is configured to decode the video depending on an indication indicating whether a picture of the video preceding a dependent random access picture shall be output or not.

23. A video decoder (300) according to claim 22,

wherein the video decoder (300) is configured to decode the video depending on a first variable (NoOutputBeforeDrapFlag) indicating whether the picture of the video that precedes the dependent random access picture shall be output or not.

24. A video decoder (300) according to claim 23,

wherein the video data stream comprises the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not, and

wherein the video decoder (300) is configured to decode the video depending on the indication within the video data stream.

25. A video decoder (300) according to claim 24,

wherein the video data stream comprises supplemental enhancement information comprising the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not, and

wherein the video decoder (300) is configured to decode the video depending on the supplemental enhancement information.

26. A video decoder (300) according to claim 24,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the video data stream comprises a flag (ph_pic_output_flag) having a predefined value (0) in a picture header of the independent random access picture, such that the predefined value (0) of the flag (ph_pic_output_flag) indicates for the independent random access picture directly precedes said dependent random access picture within the video data stream, and that said independent random access picture shall not be output,

wherein the video decoder (300) is configured to decode the video depending on the flag.

27. A video decoder (300) according to claim 26,

wherein the flag is a first flag, wherein the video data stream comprises a further flag in a picture parameter set of the video data stream, wherein the further flag indicates whether or not the first flag (ph_pic_output_flag) exists in the picture header of the independent random access picture,

wherein the video decoder (300) is configured to decode the video depending on the further flag.

28. A video decoder (300) according to claim 24,

wherein the video data stream comprises as the indication that indicates whether the picture of the video preceding the dependent random access picture shall be output or not

a supplemental enhancement information flag within a supplemental enhancement information of the output video data stream, or

a picture parameter set flag within a picture parameter set of the output video data stream, or

a sequence parameter set flag within a sequence parameter set of the output video data stream,

wherein the video decoder (300) is configured to decode the video depending on the indication within the video data stream.

29. A video decoder (300) according to one of claims 23 to 28,

wherein the video decoder (300) is configured to reconstruct the video from the video data stream, and

wherein the video decoder (300) is configured to output or to not output the picture of the video that precedes the dependent random access picture depending on the first variable (NoOutputBeforeDrapFlag).

30. A video decoder (300) according to one of claims 23 to 29,

wherein the video decoder (300) is configured to determine a value of a second variable (PictureOutputFlag) for the picture of the video that precedes the dependent random access picture depending on the first variable (NoOutputBeforeDrapFlag), wherein the second variable (PictureOutputFlag) indicates for said picture whether said picture shall be output or not.

31. A video decoder (300) according to one of claims 23 to 30,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the video decoder (300) is configured to decode the video depending on the first variable (NoOutputBeforeDrapFlag) which indicates that the independent random access picture shall not be output.

32. A video decoder (300) according to one of claims 23 to 30,

wherein the picture of the video that precedes the dependent random access picture is an independent random access picture,

wherein the video decoder (300) is configured to decode the video depending on the first variable (NoOutputBeforeDrapFlag) which indicates that the independent random access picture shall be output.

33. A method for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the method comprises generating an output video data stream from the input video data stream,

wherein the method comprises determining whether a picture of the video preceding a dependent random access picture shall be output or not.

34. A method for encoding a video into a video data stream,

wherein the method comprises generating the video data stream such that the video data stream comprises an indication that indicates whether a picture of the video preceding a dependent random access picture shall be output or not.

35. A method for receiving a video data stream having a video stored therein,

wherein the method comprises decoding the video from the video data stream,

wherein decoding the video is conducted depending on an indication indicating whether a picture of the video preceding a dependent random access picture shall be output or not.

36. A computer program for implementing the method of one of claims 33 to 35 when being executed on a computer or signal processor.

37. An apparatus (200) for receiving one or more input video data streams, wherein each of the one or more input video data streams has an input video encoded thereinto,

wherein the apparatus (200) is configured to generate an output video data stream from the one or more input video data streams, the output video data stream encoding an output video, wherein the apparatus is configured to generate the output video data stream such that the output video is the input video being encoded within one of the one or more input video data streams, or such that the output video depends on the input video of at least one of the one or more input video data streams,

wherein the apparatus (200) is configured to determine an access unit removal time of a current picture of a plurality of pictures of the output video from a coded picture buffer,

wherein the apparatus (200) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture from the coded picture buffer.

38. An apparatus (200) according to claim 37,

wherein the apparatus (200) is configured to drop a group of one or more pictures of the input video of a first video data stream of the one or more input video data streams to generate the output video data stream,

wherein the apparatus (200) is configured to determine an access unit removal time for at least one of the plurality of pictures of the output video from the coded picture buffer depending on the coded picture buffer delay offset information.

39. An apparatus (200) according to claim 37,

wherein the first video received by the apparatus (200) is a preprocessed video which results from an original video from which a group of one or more pictures has been dropped to generate the preprocessed video,

wherein the apparatus (200) is configured to determine an access unit removal time for at least one of the plurality of pictures of the output video from the coded picture buffer depending on the coded picture buffer delay offset information.

40. An apparatus (200) according to claim 38 or 39,

wherein the buffer delay offset information depends on a number of pictures of the input video that have been dropped.

41. An apparatus (200) according to one of claims 38 to 40,

wherein the one or more input video data streams are two or more input video data streams, and

wherein the apparatus (200) is configured to splice the processed video and the input video of a second video data stream of the two or more input video data streams to obtain the output video, and is configured to encode the output video into the output video data stream.

42. An apparatus (200) according to claim 41,

wherein the apparatus (200) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on a location of the current picture within the output video, or

wherein the apparatus (200) is configured to determine whether or not to set a coded picture buffer delay offset value of the coded picture buffer delay offset information to 0 for determining the access unit removal time of the current picture depending on the location of the current picture within the output video.

43. An apparatus (200) according to claim 41 or 42,

wherein the apparatus (200) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on a position of a previous non-discardable picture which precedes the current picture within the output video.

44. An apparatus (200) according to claim 43,

wherein the apparatus (200) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on whether or not the previous non-discardable picture which precedes the current picture within the output video is a first picture in a previous buffering period.

45. An apparatus (200) according to one of claims 41 to 44,

wherein the apparatus (200) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time

of the current picture depending on a concatenation flag, the current picture being a first picture of the input video of the second video data stream.

46. An apparatus (200) according to one of claims 37 to 45,

wherein the apparatus (200) is configured to determine the access unit removal time of the current picture depending on a removal time of a preceding picture.

47. An apparatus (200) according to one of claims 37 to 46,

wherein the apparatus (200) is configured to determine the access unit removal time of the current picture depending on initial coded picture buffer removal delay information.

48. An apparatus (200) according to claim 47,

wherein the apparatus (200) is configured to update the initial coded picture buffer removal delay information depending on a clock tick to obtain temporary coded picture buffer removal delay information to determine the access unit removal time of the current picture.

49. An apparatus (200) according to claim 45,

wherein if the concatenation flag is set to a first value, then the apparatus (200) is configured to use the coded picture buffer delay offset information to determine one or more removal times, and

wherein if the concatenation flag is set to a second value being different from the first value then the apparatus (200) is configured to not use the coded picture buffer delay offset information to determine the one or more removal times.

50. An apparatus (200) according to one of claims 37 to 49,

wherein the apparatus (200) is configured to signal to a video decoder (300), whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture from the coded picture buffer.

51. An apparatus (200) according to claim 50,

wherein the current picture is located at a splicing point of the output video, where two input videos have been spliced.

52. A video data stream,

wherein the video data stream has a video encoded thereinto,

wherein the video data stream comprises coded picture buffer delay offset information.

53. A video data stream according to claim 52,

wherein the video data stream comprises a concatenation flag.

54. A video data stream according to claim 52 or 53,

wherein the video data stream comprises initial coded picture buffer removal delay information.

55. A video data stream according to claim 53,

wherein if the concatenation flag is set to a first value then the concatenation flag indicates that the coded picture buffer delay offset information needs to be used to determine one or more removal times, and

wherein if the concatenation flag is set to a second value being different from the first value then the concatenation flag indicates that the indicated offset is not used to determine the one or more removal times.

56. A video encoder (100),

wherein the video encoder (100) is configured to encode a video into a video data stream,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises coded picture buffer delay offset information.

57. A video encoder (100) according to claim 56,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a concatenation flag.

58. A video encoder (100) according to claim 56 or 57,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises coded picture buffer delay offset information.

59. A video encoder (100) according to claim 57,

wherein if the concatenation flag is set to a first value then the concatenation flag indicates that the coded picture buffer delay offset information needs to be used to determine one or more removal times, and

wherein if the concatenation flag is set to a second value being different from the first value then the concatenation flag indicates that the indicated offset is not used to determine the one or more removal times.

60. A video decoder (300) for receiving a video data stream a video stored therein,

wherein the video decoder (300) is configured to decode the video from the video data stream,

wherein the video decoder (300) is configured to decode the video depending on an access unit removal time of a current picture of a plurality of pictures of the video from a coded picture buffer,

wherein the video decoder (300) is configured to decode the video depending on an indication indicating whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture from the coded picture buffer.

61. A video decoder (300) according to claim 60,

wherein the access unit removal time for at least one of the plurality of pictures of the video from the coded picture buffer depends on the coded picture buffer delay offset information.

62. A video decoder (300) according to claim 60 or 61,

wherein the video decoder (300) is configured to decode the video depending on whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on a location of the current picture within the video.

63. A video decoder (300) according to claim 60 or 61,

wherein the video decoder (300) is configured to decode the video depending on whether or not a coded picture buffer delay offset value of the coded picture buffer delay offset information is set to 0.

64. A video decoder (300) according to one of claims 60 to 63,

wherein the video decoder (300) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on a position of a previous non-discardable picture which precedes the current picture within the video.

65. A video decoder (300) according to claim 64,

wherein the video decoder (300) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on whether or not the previous non-discardable

picture which precedes the current picture within the video is a first picture in a previous buffering period.

66. A video decoder (300) according to one of claims 60 to 65,

wherein the video decoder (300) is configured to determine whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture depending on a concatenation flag, the current picture being a first picture of the input video of the second video data stream.

67. A video decoder (300) according to one of claims 60 to 66,

wherein the video decoder (300) is configured to determine the access unit removal time of the current picture depending on a removal time of a preceding picture.

68. A video decoder (300) according to one of claims 60 to 67,

wherein the video decoder (300) is configured to determine the access unit removal time of the current picture depending on initial coded picture buffer removal delay information.

69. A video decoder (300) according to claim 68,

wherein the video decoder (300) is configured to update the initial coded picture buffer removal delay information depending on a clock tick to obtain temporary coded picture buffer removal delay information to determine the access unit removal time of the current picture.

70. An video decoder (300) according to claim 66,

wherein if the concatenation flag is set to a first value then the video decoder (300) is configured to use the coded picture buffer delay offset information to determine one or more removal times, and

wherein if the concatenation flag is set to a second value being different from the first value then the video decoder (300) is configured to not use the coded picture buffer delay offset information to determine the one or more removal times.

71. A method for receiving one or more input video data streams, wherein each of the one or more input video data streams has an input video encoded thereinto,

wherein the method comprises generating an output video data stream from the one or more input video data streams, the output video data stream encoding an output video, wherein generating the output video data stream is conducted such that the output video is the input video being encoded within one of the one or more input video data streams, or such that the output video depends on the input video of at least one of the one or more input video data streams,

wherein the method comprises determining an access unit removal time of a current picture of a plurality of pictures of the output video from a coded picture buffer,

wherein the method comprises determining whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture from the coded picture buffer.

72. A method for encoding a video into a video data stream,

wherein the method comprises generating the video data stream such that the video data stream comprises coded picture buffer delay offset information.

73. A method for receiving a video data stream a video stored therein,

wherein the method comprises decoding the video from the video data stream,

wherein decoding the video is conducted depending on an access unit removal time of a current picture of a plurality of pictures of the video from a coded picture buffer,

wherein decoding the video is conducted depending on an indication indicating whether or not to use coded picture buffer delay offset information for determining the access unit removal time of the current picture from the coded picture buffer.

74. A computer program for implementing the method of one of claims 71 to 73 when being executed on a computer or signal processor.

75. A video data stream,

wherein the video data stream has a video encoded thereinto,

wherein the video data stream comprises an initial coded picture buffer removal delay,

wherein the video data stream comprises an initial coded picture buffer removal offset,

wherein the video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods.

76. A video data stream according to claim 75,

wherein the initial coded picture buffer removal delay indicates a time that needs to pass for a first access unit of a picture of the video data stream that initializes a video decoder (300) before sending the first access unit to the video decoder (300).

77. A video data stream according to claim 76,

wherein the video data stream comprises a single indication that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods.

78. A video data stream according to claim 77,

wherein the video data stream comprises a concatenation flag as the single indication, that indicates whether or not the sum of the initial coded picture buffer

removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods,

wherein, if the concatenation flag is equal to a first value, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods, and

wherein, if the concatenation flag is different from the first value, the concatenation flag does not define whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods.

79. A video data stream according to claim 77 or 78,

wherein if the single indication does not indicate that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the video data stream comprises continuously updated information on the initial coded picture buffer removal delay information and continuously updated information on the initial coded picture buffer removal offset information.

80. A video data stream according to one of claims 75 to 79,

wherein, if the video data stream comprises the information that indicates that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant starting from a current position within the video data stream.

81. A video encoder (100),

wherein the video encoder (100) is configured to encode a video into a video data stream,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises an initial coded picture buffer removal delay,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises an initial coded picture buffer removal offset,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods.

82. A video encoder (100) according to claim 81,

wherein the initial coded picture buffer removal delay indicates a time that needs to pass for a first access unit of a picture of the video data stream that initializes a video decoder (300) before sending the first access unit to the video decoder (300).

83. A video encoder (100) according to claim 82,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a single indication that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods.

84. A video encoder (100) according to claim 83,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a concatenation flag as the single indication, that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods,

wherein, if the concatenation flag is equal to a first value, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods, and

wherein, if the concatenation flag is different from the first value, the concatenation flag does not define whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods.

85. A video encoder (100) according to claim 83 or 84,

wherein if the single indication does not indicate that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the video encoder (100) is configured to generate the video data stream such that the video data stream comprises continuously updated information on the initial coded picture buffer removal delay information and continuously updated information on the initial coded picture buffer removal offset information.

86. A video encoder (100) according to one of claims 81 to 85,

wherein, if the video data stream comprises the information that indicates that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant starting from a current position within the video data stream.

87. An apparatus (200) for receiving two input video data streams, being a first input video data stream and a second input video data stream, wherein each of the two input video data streams has an input video encoded thereinto,

wherein the apparatus (200) is configured to generate an output video data stream from the two input video data streams, the output video data stream encoding an output video, wherein the apparatus is configured to generate an output video data

stream by concatenating the first input video data stream and the second input video data stream,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises an initial coded picture buffer removal delay,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises an initial coded picture buffer removal offset,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods.

88. An apparatus (200) according to claim 87,

wherein the initial coded picture buffer removal delay indicates a time that needs to pass for a first access unit of a picture of the output video data stream that initializes a video decoder (300) before sending the first access unit to the video decoder (300).

89. An apparatus (200) according to claim 88,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises a single indication that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods.

90. An apparatus (200) according to claim 89,

wherein the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises a concatenation flag as the single indication, that indicates whether or not the sum of the initial coded picture buffer

removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods,

wherein, if the concatenation flag is equal to a first value, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods, and

wherein, if the concatenation flag is different from the first value, the concatenation flag does not define whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods.

91. An apparatus (200) according to claim 89 or 90,

wherein if the single indication does not indicate that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the apparatus (200) is configured to generate the output video data stream such that the output video data stream comprises continuously updated information on the initial coded picture buffer removal delay information and continuously updated information on the initial coded picture buffer removal offset information.

92. An apparatus (200) according to one of claims 87 to 91,

wherein, if the video data stream comprises the information that indicates that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant starting from a current position within the video data stream.

93. A video decoder (300) for receiving a video data stream a video stored therein,

wherein the video decoder (300) is configured to decode the video from the video data stream,

wherein the video data stream comprises an initial coded picture buffer removal delay,

wherein the video data stream comprises an initial coded picture buffer removal offset,

wherein the video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods,

wherein the video decoder (300) is configured to decode the video depending on the information that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods.

94. A video decoder (300) according to claim 93,

wherein the initial coded picture buffer removal delay indicates a time that needs to pass for a first access unit of a picture of the output video data stream that initializes the video decoder (300) before sending the first access unit to the video decoder (300).

95. A video decoder (300) according to claim 94,

wherein the video data stream comprises a single indication that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods,

wherein the video decoder (300) is configured to decode the video depending on the single indication.

96. A video decoder (300) according to claim 95,

wherein the video data stream comprises a concatenation flag as the single indication, that indicates whether or not the sum of the initial coded picture buffer

removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods,

wherein, if the concatenation flag is equal to a first value, the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods,

wherein, if the concatenation flag is different from the first value, the concatenation flag does not define whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is constant across the two or more buffering periods, and

wherein the video decoder (300) is configured to decode the video depending on the concatenation flag.

97. A video decoder (300) according to claim 95 or 96,

wherein if the single indication does not indicate that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the video data stream comprises continuously updated information on the initial coded picture buffer removal delay information and continuously updated information on the initial coded picture buffer removal offset information, and

wherein the video decoder (300) is configured to decode the video depending on the continuously updated information on the initial coded picture buffer removal delay information and on the continuously updated information on the initial coded picture buffer removal offset information.

98. A video decoder (300) according to one of claims 93 to 97,

wherein, if the video data stream comprises the information that indicates that the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods, the sum of the initial coded picture buffer removal delay and the initial coded

picture buffer removal offset is defined to be constant starting from a current position within the video data stream.

99. A method for encoding a video into a video data stream,

wherein the method comprises generating the video data stream such that the video data stream comprises an initial coded picture buffer removal delay,

wherein the method comprises generating the video data stream such that the video data stream comprises an initial coded picture buffer removal offset,

wherein the method comprises generating the video data stream such that the video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods.

100. A method for receiving two input video data streams, being a first input video data stream and a second input video data stream, wherein each of the two input video data streams has an input video encoded thereinto,

wherein the method comprises generating an output video data stream from the two input video data streams, the output video data stream encoding an output video, wherein generating an output video data stream is conducted by concatenating the first input video data stream and the second input video data stream,

wherein the method comprises generating the output video data stream such that the output video data stream comprises an initial coded picture buffer removal delay,

wherein the method comprises generating the output video data stream such that the output video data stream comprises an initial coded picture buffer removal offset,

wherein the method comprises generating the output video data stream such that the output video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods.

101. A method for receiving a video data stream a video stored therein,

wherein the method comprises decoding the video from the video data stream,

wherein the video data stream comprises an initial coded picture buffer removal delay,

wherein the video data stream comprises an initial coded picture buffer removal offset,

wherein the video data stream comprises information that indicates whether or not a sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across two or more buffering periods,

wherein the method comprises decoding the video depending on the information that indicates whether or not the sum of the initial coded picture buffer removal delay and the initial coded picture buffer removal offset is defined to be constant across the two or more buffering periods.

102. A computer program for implementing the method of one of claims 99 to 101 when being executed on a computer or signal processor.

103. A video data stream,

wherein the video data stream has a video encoded thereinto,

wherein the video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement

information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit.

104. A video data stream according to claim 103,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message.

105. A video data stream according to claim 103 or 104,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message.

106. A video data stream according to one of claims 103 to 105,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of a coded video sequence of the one or more coded video sequences, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

107. A video data stream according to one of claims 103 to 105,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of each of the one or more coded video sequences of the video data stream, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

108. A video encoder (100),

wherein the video encoder (100) is configured to encode a video into a video data stream,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit.

109. A video encoder (100) according to claim 108,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message.

110. A video encoder (100) according to claim 108 or 109,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message.

111. A video encoder (100) according to one of claims 108 to 110,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the video encoder (100) is configured to generate the video data stream such that for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of a coded video sequence of the one or more coded video sequences, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

112. A video encoder (100) according to one of claims 108 to 110,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the video encoder (100) is configured to generate the video data stream such that for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of each of the one or more coded video sequences of the video data stream, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

113. An apparatus (200) for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the apparatus (200) is configured to generate an processed video data stream from the input video data stream,

wherein the apparatus (200) is configured to generate the processed video data stream such that the processed video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the processed video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit.

114. An apparatus (200) according to claim 113,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the apparatus (200) is configured to generate the processed video data stream such that said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message.

115. An apparatus (200) according to claim 113 or 114,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the apparatus (200) is configured to generate the processed video data stream such that said network abstraction layer unit does not comprise any other supplemental enhancement information message.

116. An apparatus (200) according to one of claims 113 to 115,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the apparatus (200) is configured to generate the processed video data stream such that for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of a coded video sequence of the one or more coded video sequences, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

117. An apparatus (200) according to one of claims 113 to 115,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then the apparatus (200) is configured to generate the processed video data stream such that for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of each of the one or more coded video sequences of the processed video data stream, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

118. A video decoder (300) for receiving a video data stream having a video stored therein,

wherein the video decoder (300) is configured to decode the video from the video data stream,

wherein the video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit,

wherein the video decoder (300) is configured to decode the video depending on said indication.

119. A video decoder (300) according to claim 118,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message.

120. A video decoder (300) according to claim 118 or 119,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then said network abstraction layer unit does not comprise any other supplemental enhancement information message.

121. A video decoder (300) according to one of claims 118 to 120,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of a coded video sequence of the one or more coded video sequences, said network abstraction layer does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

122. A video decoder (300) according to one of claims 118 to 120,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has the first value, then for each network abstraction layer unit, which comprises a non-scalable nested picture timing supplemental enhancement information message, of each access unit of the plurality of access units of each of the one or more coded video sequences of the video data stream, said network abstraction layer unit does not comprise any other supplemental enhancement information message that is different from a picture timing supplemental enhancement information message, or does not comprise any other supplemental enhancement information message.

123. A method for encoding a video into a video data stream,

wherein the method comprises generating the video data stream such that the video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit.

124. A method for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the method comprises generating an processed video data stream from the input video data stream,

wherein the method comprises generating the processed video data stream such that the processed video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the processed video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not

the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit.

125. A method for receiving a video data stream having a video stored therein,

wherein the method comprises decoding the video from the video data stream,

wherein the video data stream comprises an indication (general_same_pic_timing_in_all_ols_flag) indicating whether or not a non-scalable nested picture timing supplemental enhancement information message of a network abstraction layer unit of an access unit of the plurality of access units of a coded video sequence of a one or more coded video sequences of the video data stream is defined to apply to all output layer sets of a plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a first value, then the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit is defined to apply to all output layer sets of the plurality of output layer sets of said access unit,

wherein, if the indication (general_same_pic_timing_in_all_ols_flag) has a value being different from the first value, then the indication does not define whether or not the non-scalable nested picture timing supplemental enhancement information message of said network abstraction layer unit of said access unit applies to all output layer sets of the plurality of output layer sets of said access unit,

wherein decoding the video is conducted depending on said indication.

126. A computer program for implementing the method of one of claims 123 to 125 when being executed on a computer or signal processor.

127. A video data stream,

wherein the video data stream has a video encoded thereinto,

wherein the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream.

128. A video data stream according to claim 127,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream.

129. A video data stream according to claim 127,

wherein the video data stream comprises a plurality of access units, wherein each access unit of the plurality of access units is assigned to one of a plurality of pictures of the video,

wherein the portion of the video data stream is an access unit of the plurality of access units of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit.

130. A video data stream according to claim 129,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit and in in every one of the non-scalable nested supplemental enhancement information messages of the access unit.

131. A video data stream according to claim 127,

wherein the portion of the video data stream is a coded video sequence of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence.

132. A video data stream according to claim 131,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence and in in every one of the non-scalable nested supplemental enhancement information messages of the coded video sequence.

133. A video data stream according to claim 127,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream.

134. A video data stream according to claim 133,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream.

135. A video data stream according to one of claims 127 to 134,

wherein the video data stream or the portion of the video data stream comprises at least one buffering period supplemental enhancement information message, wherein said buffering period supplemental enhancement information message defines the size for each syntax element of the one or more syntax elements of the plurality of syntax elements.

136. A video data stream according to claim 135,

wherein said buffering period supplemental enhancement information message comprises, for defining the size for each syntax element of the one or more syntax elements of the plurality of syntax elements, at least one of

a bp_cpb_initial_removal_delay_length_minus1 element,

a bp_cpb_removal_delay_length_minus1 element,

a bp_dpb_output_delay_length_minus1 element,

a bp_du_cpb_removal_delay_increment_length_minus1 element,

a bp_dpb_output_delay_du_length_minus1 element.

137. A video data stream according to claim 135 or 136,

wherein for each access unit of a plurality of access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message.

138. A video data stream according to claim 135 or 136,

wherein for each single-layer access unit of a plurality of single-layer access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said single-layer access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message.

139. A video encoder (100),

wherein the video encoder (100) is configured to encode a video into a video data stream,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the video encoder (100) is configured to generate the video data stream such that the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream.

140. A video encoder (100) according to claim 139,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the video encoder (100) is configured to generate the video data stream such that the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream.

141. A video encoder (100) according to claim 139,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises a plurality of access units, wherein each access unit of the plurality of access units is assigned to one of a plurality of pictures of the video,

wherein the portion of the video data stream is an access unit of the plurality of access units of the video data stream, and

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit.

142. A video encoder (100) according to claim 141,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the video encoder (100) is configured to generate the video data stream such that the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit and in in every one of the non-scalable nested supplemental enhancement information messages of the access unit.

143. A video encoder (100) according to claim 139,

wherein the portion of the video data stream is a coded video sequence of the video data stream, and

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence.

144. A video encoder (100) according to claim 143,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the video encoder (100) is configured to generate the video data stream such that the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence and in in every one of the non-scalable nested supplemental enhancement information messages of the coded video sequence.

145. A video encoder (100) according to claim 139,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream.

146. A video encoder (100) according to claim 145,

wherein the video encoder (100) is configured to generate the video data stream such that each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream and in

in every one of the non-scalable nested supplemental enhancement information messages of the video data stream.

147. A video encoder (100) according to one of claims 139 to 146,

wherein the video encoder (100) is configured to generate the video data stream such that the video data stream or the portion of the video data stream comprises at least one buffering period supplemental enhancement information message, wherein said buffering period supplemental enhancement information message defines the size for each syntax element of the one or more syntax elements of the plurality of syntax elements.

148. A video encoder (100) according to claim 147,

wherein the video encoder (100) is configured to generate the video data stream such that said buffering period supplemental enhancement information message comprises, for defining the size for each syntax element of the one or more syntax elements of the plurality of syntax elements, at least one of

a bp_cpb_initial_removal_delay_length_minus1 element,

a bp_cpb_removal_delay_length_minus1 element,

a bp_dpb_output_delay_length_minus1 element,

a bp_du_cpb_removal_delay_increment_length_minus1 element,

a bp_dpb_output_delay_du_length_minus1 element.

149. A video encoder (100) according to claim 147 or 148,

wherein the video encoder (100) is configured to generate the video data stream such that for each access unit of a plurality of access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement

information message, said access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message.

150. A video encoder (100) according to claim 147 or 148,

wherein the video encoder (100) is configured to generate the video data stream such that for each single-layer access unit of a plurality of single-layer access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said single-layer access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message.

151. An apparatus (200) for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the apparatus (200) is configured to generate an output video data stream from the input video data stream,

wherein the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream,

wherein the apparatus (200) is configured to process the one or more scalable nested supplemental enhancement information messages.

152. An apparatus (200) according to claim 151,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream,

wherein the apparatus (200) is configured to process the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information messages.

153. An apparatus (200) according to claim 151,

wherein the video data stream comprises a plurality of access units, wherein each access unit of the plurality of access units is assigned to one of a plurality of pictures of the video,

wherein the portion of the video data stream is an access unit of the plurality of access units of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit.

154. An apparatus (200) according to claim 153,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit and in in every one of the non-scalable nested supplemental enhancement information messages of the access unit,

wherein the apparatus (200) is configured to process the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information messages.

155. An apparatus (200) according to claim 151,

wherein the portion of the video data stream is a coded video sequence of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence.

156. An apparatus (200) according to claim 155,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence and

in in every one of the non-scalable nested supplemental enhancement information messages of the coded video sequence,

wherein the apparatus (200) is configured to process the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information messages.

157. An apparatus (200) according to claim 151,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream.

158. An apparatus (200) according to claim 157,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream,

wherein the apparatus (200) is configured to process the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information messages.

159. An apparatus (200) according to one of claims 151 to 158,

wherein the video data stream or the portion of the video data stream comprises at least one buffering period supplemental enhancement information message, wherein said buffering period supplemental enhancement information message defines the size of the one or more of the plurality of syntax elements,

wherein the apparatus (200) is configured to process the at least one buffering period supplemental enhancement information message.

160. An apparatus (200) according to claim 159,

wherein said buffering period supplemental enhancement information message comprises, for defining the size of the one or more of the plurality of syntax elements, at least one of

a bp_cpb_initial_removal_delay_length_minus1 element,

a bp_cpb_removal_delay_length_minus1 element,

a bp_dpb_output_delay_length_minus1 element,

a bp_du_cpb_removal_delay_increment_length_minus1 element,

a bp_dpb_output_delay_du_length_minus1 element.

161. An apparatus (200) according to claim 159 or 160,

wherein for each access unit of a plurality of access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message,

wherein the apparatus (200) is configured to process the scalable nested supplemental enhancement information messages and the non-scalable nested supplemental enhancement information messages.

162. An apparatus (200) according to claim 159 or 160,

wherein for each single-layer access unit of a plurality of single-layer access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said single-layer access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message,

wherein the apparatus (200) is configured to process the scalable nested supplemental enhancement information messages and the non-scalable nested supplemental enhancement information messages.

163. A video decoder (300) for receiving a video data stream having a video stored therein,

wherein the video decoder (300) is configured to decode the video from the video data stream,

wherein the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream,

wherein the video decoder (300) is configured to decode the video depending on the one or more syntax elements of the plurality of syntax elements.

164. A video decoder (300) according to claim 163,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of the

portion of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream or of the portion of the video data stream.

165. A video decoder (300) according to claim 163,

wherein the video data stream comprises a plurality of access units, wherein each access unit of the plurality of access units is assigned to one of a plurality of pictures of the video,

wherein the portion of the video data stream is an access unit of the plurality of access units of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit.

166. A video decoder (300) according to claim 165,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the access unit and in in every one of the non-scalable nested supplemental enhancement information messages of the access unit.

167. A video decoder (300) according to claim 163,

wherein the portion of the video data stream is a coded video sequence of the video data stream, and

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence.

168. A video decoder (300) according to claim 167,

wherein the video data stream comprises one or more non-scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages and the one or more non-scalable nested supplemental enhancement information message comprise the plurality of syntax elements,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the coded video sequence and in in every one of the non-scalable nested supplemental enhancement information messages of the coded video sequence.

169. A video decoder (300) according to claim 163,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream.

170. A video decoder (300) according to claim 169,

wherein each syntax element of the one or more syntax elements of the plurality of syntax elements is defined to have the same size in every one of the scalable nested supplemental enhancement information messages of the video data stream and in in every one of the non-scalable nested supplemental enhancement information messages of the video data stream.

171. A video decoder (300) according to one of claims 163 to 170,

wherein the video data stream or the portion of the video data stream comprises at least one buffering period supplemental enhancement information message, wherein said buffering period supplemental enhancement information message defines the size for each syntax element of the one or more syntax elements of the plurality of syntax elements.

172. A video decoder (300) according to claim 171,

wherein said buffering period supplemental enhancement information message comprises, for defining the size for each syntax element of the one or more syntax elements of the plurality of syntax elements, at least one of

a bp_cpb_initial_removal_delay_length_minus1 element,

a bp_cpb_removal_delay_length_minus1 element,

a bp_dpb_output_delay_length_minus1 element,

a bp_du_cpb_removal_delay_increment_length_minus1 element,

a bp_dpb_output_delay_du_length_minus1 element.

173. A video decoder (300) according to claim 171 or 172,

wherein for each access unit of a plurality of access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said access unit also comprises a non-scalable-nested buffering period supplemental enhancement information message.

174. A video decoder (300) according to claim 171 or 172,

wherein for each single-layer access unit of a plurality of single-layer access units of the video data stream, which comprises a scalable-nested buffering period supplemental enhancement information message, said single-layer access unit also

comprises a non-scalable-nested buffering period supplemental enhancement information message.

175. A method for encoding a video into a video data stream,

wherein the method comprises generating the video data stream such that the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the method comprises generating the video data stream such that the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein the method comprises generating the video data stream such that each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream.

176. A method for receiving an input video data stream, wherein the input video data stream has a video encoded thereinto,

wherein the method comprises generating an output video data stream from the input video data stream,

wherein the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream,

wherein the method comprises processing the one or more scalable nested supplemental enhancement information messages.

177. A method for receiving a video data stream having a video stored therein,

wherein the method comprises decoding the video from the video data stream,

wherein the video data stream comprises one or more scalable nested supplemental enhancement information messages,

wherein the one or more scalable nested supplemental enhancement information messages comprise a plurality of syntax elements,

wherein each syntax element of one or more syntax elements of the plurality of syntax elements is defined to have a same size in every one of the scalable nested supplemental enhancement information messages of the video data stream or of a portion of the video data stream,

wherein decoding the video is conducted depending on the one or more syntax elements of the plurality of syntax elements.

178. A computer program for implementing the method of one of claims 175 to 177 when being executed on a computer or signal processor.