Amended Set of Claims

1. A method of processing video data, the method comprising:

performing a bitstream conformance test that determines whether a bitstream comprising encoded video data conforms to a video coding standard, wherein performing the bitstream conformance test comprises:

selecting an operation point under test; and

invoking a decoding process that comprises:

determining a target highest temporal identifier, wherein determining the value of the target highest temporal identifier comprises:

when the decoding process is invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a greatest temporal identifier present in an operation point representation of the operation point under test; and

when the decoding process is not invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a value of a syntax element in a sequence parameter set (SPS);

performing a bitstream extraction process that derives a sub-bitstream by removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier, the target highest temporal identifier being less than or equal to a greatest temporal identifier present in the bitstream; and

decoding NAL units of the sub-bitstream.

2. The method of claim 1, wherein:

the operation point is a first operation point,

the method further comprises performing the decoding process a second time,

when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and

performing the decoding process for the second time comprises:

receiving, from an external source, a second target highest temporal identifier;

performing the bitstream extraction process to derive a second sub-bitstream by removing, from the bitstream, all NAL units with temporal identifiers greater than the second target highest temporal identifier; and

decoding NAL units of the second sub-bitstream.

3. The method of claim 1, wherein:

the operation point is a first operation point,

the method further comprises performing the decoding process a second time,

when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and

performing the decoding process for the second time comprises:

performing the bitstream extraction process to extract, from the bitstream, an operation point representation of a second operation point,

wherein 0 is the only value indicated by layer identifier syntax elements present in the operation point representation of the second operation point, and

wherein the greatest temporal identifier present in the bitstream is equal to a greatest temporal identifier present in the operation point representation of the second operation point; and

decoding NAL units of the operation point representation of the second operation point.

4. The method of claim 1, wherein performing the bitstream conformance test comprises:

selecting a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

using the selected set of HRD parameters to configure a HRD that performs the decoding process.

5. The method of claim 4, wherein:

performing the decoding process further comprises decoding, from the SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a decoded picture buffer (DPB) of the HRD, and

performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

determining that the bitstream is not in conformance with the video coding standard when a value indicated by the particular syntax element is greater than a maximum DPB size.

6. The method of claim 4, wherein:

performing the decoding process comprises decoding, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD, and

performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

performing a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an Instantaneous Decoding Refresh (IDR) picture or a Broken Link Access (BLA) picture and the number of pictures in the DPB marked as needed for output is greater than a value indicated by the particular syntax element.

7. The method of claim 4, wherein:

performing the decoding process comprises decoding, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD, and

performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

performing a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an IDR picture or a BLA picture and the number of pictures in the DPB is indicated by the particular syntax element.

8. The method of claim 4, wherein:

performing the decoding process comprises decoding, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD,

performing the bitstream conformance test comprises determining, based on the target highest temporal identifier, a particular syntax element in the array, and

a number of picture storage buffers in the DPB is indicated by the particular syntax element.

9. The method of claim 4, wherein performing the decoding process comprises:

decoding, from an SPS active for a current picture, a first array of syntax elements that each indicate a maximum required size of a DPB of the HRD;

decoding, from an SPS active for a preceding picture, a second array of syntax elements that each indicate a maximum required size of the DPB of the HRD;

determining, based on the target highest temporal identifier, a first syntax element in the first array;

determining, based on the target highest temporal identifier, a second syntax element in the second array; and

when the current picture is an IDR picture or a BLA picture and a value indicated by the first syntax element is different than a value indicated by the second syntax element, inferring a value of a third syntax element regardless of a value indicated by the third syntax element, wherein the third syntax element specifies how previously-decoded pictures in the DPB are treated after decoding of an IDR picture or BLA picture.

10. The method of claim 4, wherein:

performing the decoding process comprises decoding a HRD parameters syntax structure that includes the selected set of HRD parameters, wherein the selected set of HRD parameters includes an array of syntax elements that each indicate a number of alternative coded picture buffer (CPB) specifications in the bitstream; and

performing the bitstream conformance test comprises:

selecting, based on the target highest temporal identifier, a particular syntax element in the array;

selecting a scheduler selection index in a range of 0 to a value indicated by the particular syntax element; and

determining, based at least in part on the scheduler selection index, an initial CPB removal delay of a CPB of the HRD.

11. The method of claim 4,

wherein performing the decoding process further comprises decoding, from the SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a DPB of the HRD; and

wherein performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

determining, based at least in part on whether a number of decoded pictures in the DPB is less than or equal to the maximum of 0 and a value indicated by the particular syntax element minus 1, whether the bitstream conforms to the video coding standard.

12. A device comprising:

a storage medium configured to store encoded video data; and

one or more processors configured toperform a bitstream conformance test that determines whether a bitstream comprising the encoded video data conforms to a video coding standard, wherein to perform the bitstream conformance test, the one or more processors:

select an operation point under test; and

invoke a decoding process that comprises:

determining a target highest temporal identifier, wherein determining the value of the target highest temporal identifier comprises:

when the decoding process is invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a greatest temporal identifier present in an operation point representation of the operation point under test; and

when the decoding process is not invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a value of a syntax element in a sequence parameter set (SPS);

performing a bitstream extraction process that derives a sub-bitstream by removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier, the target highest temporal identifier being less than or equal to a greatest temporal identifier present in the bitstream; and

decode NAL units of the sub-bitstream.

13. The device of claim 12, wherein:

the operation point is a first operation point,

the one or more processors are configured to perform the decoding process a second time,

when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and

the one or more processors are configured such that when the one or more processors perform the decoding process for the second time, the one or more processors:

receive, from an external source, a second target highest temporal identifier;

perform the bitstream extraction process to derive a second sub-bitstream by removing, from the bitstream, all NAL units with temporal identifiers greater than the second target highest temporal identifier; and

decode NAL units of the second sub-bitstream.

14. The device of claim 12, wherein:

the operation point is a first operation point,

the one or more processors are configured to perform the decoding process a second time,

when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and

the one or more processors are configured such that when the one or more processors perform the decoding process for the second time, the one or more processors:

perform the bitstream extraction process to extract, from the bitstream, an operation point representation of a second operation point,

wherein 0 is the only value indicated by layer identifier syntax elements present in the operation point representation of the second operation point, and

wherein the greatest temporal identifier present in the bitstream is equal to a greatest temporal identifier present in the operation point representation of the second operation point; and

decode NAL units of the operation point representation of the second operation point.

15. The device of claim 12, wherein the one or more processors are configured such that when the one or more processors perform the bitstream conformance test, the one or more processors:

select a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

use the selected set of HRD parameters to configure a HRD that performs the decoding process.

16. The device of claim 15, wherein:

the one or more processors are configured such that when the one or more processors perform the decoding process, the one or more processors decode, from the SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a decoded picture buffer (DPB) of the HRD, and

when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

determine that the bitstream is not in conformance with the video coding standard when a value indicated by the particular syntax element is greater than a maximum DPB size.

17. The device of claim 15, wherein:

when the one or more processors perform the decoding process, the one or more processors decode, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

perform a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an Instantaneous Decoding Refresh (IDR) picture or a Broken Link Access (BLA) picture and the number of pictures in the DPB marked as needed for output is greater than a value indicated by the particular syntax element.

18. The device of claim 15, wherein:

when the one or more processors perform the decoding process, the one or more processors decode, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

perform a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an IDR picture or a BLA picture and the number of pictures in the DPB is indicated by the particular syntax element.

19. The device of claim 15, wherein:

when the one or more processors perform the decoding process, the one or more processors decode, from the SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD,

when the one or more processors perform the bitstream conformance test, the one or more processors determine, based on the target highest temporal identifier, a particular syntax element in the array, and

a number of picture storage buffers in the DPB is indicated by the particular syntax element.

20. The device of claim 15,

wherein when the one or more processors perform the decoding process, the one or more processors:

decode, from an SPS active for a current picture, a first array of syntax elements that each indicate a maximum required size of a DPB of the HRD;

decode, from an SPS active for a preceding picture, a second array of syntax elements that each indicate a maximum required size of the DPB of the HRD;

determine, based on the target highest temporal identifier, a first syntax element in the first array;

determine, based on the target highest temporal identifier, a second syntax element in the second array; and

when the current picture is an IDR picture or a BLA picture and a value indicated by the first syntax element is different than a value indicated by the second syntax element, infer a value of a third syntax element regardless of a value indicated by the third syntax element, wherein the third syntax element specifies how previously-decoded pictures in the DPB are treated after decoding of an IDR picture or BLA picture.

21. The device of claim 15,

wherein when the one or more processors perform the decoding process, the one or more processors decode a HRD parameters syntax structure that includes the selected set of HRD parameters, wherein the selected set of HRD parameters includes an array of syntax elements that each indicate a number of alternative coded picture buffer (CPB) specifications in the bitstream; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

select, based on the target highest temporal identifier, a particular syntax element in the array;

select a scheduler selection index in a range of 0 to a value indicated by the particular syntax element; and

determine, based at least in part on the scheduler selection index, an initial CPB removal delay of a CPB of the HRD.

22. The device of claim 15,

wherein when the one or more processors perform the decoding process, the one or more processors decode, from the SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a DPB of the HRD; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

determine, based at least in part on whether a number of decoded pictures in the DPB is less than or equal to the maximum of 0 and a value indicated by the particular syntax element minus 1, whether the bitstream conforms to the video coding standard.

23. A device comprising:

means for performing a bitstream conformance test that determines whether a bitstream comprising encoded video data conforms to a video coding standard, wherein performing the bitstream conformance test comprises:

selecting an operation point under test; and

invoking a decoding process that comprises:

determining a target highest temporal identifier, wherein determining the value of the target highest temporal identifier comprises:

when the decoding process is invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a greatest temporal identifier present in an operation point representation of the operation point under test; and

when the decoding process is not invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a value of a syntax element in a sequence parameter set (SPS);

performing a bitstream extraction process that derives a sub-bitstream by removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier the target highest temporal identifier being less than or equal to a greatest temporal identifier present in the bitstream; and

decoding NAL units of the sub-bitstream.

24. The device of claim 23, wherein performing the bitstream conformance test comprises:

selecting a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

using the selected set of HRD parameters to configure a HRD that performs the decoding process.

25. A computer-readable storage medium having instructions stored thereon that, when executed by one or more processors of a device, configure the device to:

perform a bitstream conformance test that determines whether a bitstream comprising encoded video data conforms to a video coding standard, wherein performing the bitstream conformance test comprises:

selecting an operation point under test; and

invoking a decoding process that comprises:

determining a target highest temporal identifier, wherein determining the value of the target highest temporal identifier comprises:

when the decoding process is invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a greatest temporal identifier present in an operation point representation of the operation point under test; and

when the decoding process is not invoked in the bitstream conformance test, determining that the target highest temporal identifier is equal to a value of a syntax element in a sequence parameter set (SPS);

performing a bitstream extraction process that derives a sub-bitstream by removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier, the target

highest temporal identifier being less than or equal to a greatest temporal identifier present in the bitstream; and

decoding NAL units of the sub-bitstream.

26. The computer-readable storage medium of claim 25, wherein the instructions configure the device such that during the bitstream conformance test, the device:

selects a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

uses the selected set of HRD parameters to configure a HRD that performs the decoding process.

CLAIMS

1. A method of processing video data, the method comprising:

performing a decoding process that decodes encoded video data, the decoding process comprising:

determining a target highest temporal identifier, wherein determining the target highest temporal identifier comprises:

determining whether the target highest temporal identifier is specified by an external means;

responsive to determining the target highest temporal identifier is not specified by any external means and responsive to determining the decoding process is invoked in a bitstream conformance test that determines whether a bitstream comprising the encoded video data conforms to a video coding standard:

selecting an operation point under test, and

setting the target highest temporal identifier equal to the greatest temporal identifier present in a sub-bitstream corresponding to the operation point under test, wherein the greatest temporal identifier present in the sub-bitstream is less than a greatest temporal identifier present in the bitstream; or

otherwise, setting the target highest temporal identifier to a value of a syntax element specifying a maximum number of temporal sub-layers in the bitstream;

performing a bitstream extraction process that derives a sub-bitstream, the bitstream extraction process com-

prising removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier; and

decoding NAL units of the sub-bitstream.

2. The method of claim **1**, wherein:

the operation point is a first operation point,

the method further comprises performing the decoding process a second time, when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and

performing the decoding process for the second time comprises:

receiving, from the external source, a second target highest temporal identifier;

performing the bitstream extraction process to derive a second sub-bitstream, the bitstream extraction process to derive the second sub-bitstream comprising removing, from the bitstream, all NAL units with temporal identifiers greater than the second target highest temporal identifier; and

decoding NAL units of the second sub-bitstream.

3. The method of claim **1**, wherein:

the operation point is a first operation point,

the method further comprises performing the decoding process a second time, when the decoding process is performed the second time, the decoding process is not set by the external means and not performed as part of the bitstream conformance test, and

performing the decoding process for the second time comprises:

performing the bitstream extraction process to derive a second sub-bitstream, the bitstream extraction pro-

cess to derive the second sub-bitstream comprising removing, from the bitstream, all NAL units with temporal identifiers greater than a second target highest temporal identifier,

wherein 0 is the only value indicated by layer identifier syntax elements present in the second sub-bitstream, and

wherein the second target highest temporal identifier is set to the value of the syntax element specifying the maximum number of temporal sub-layers present in the bitstream; and

decoding NAL units of the second sub-bitstream.

4. The method of claim **1**, wherein performing the bitstream conformance test comprises:

selecting a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

using the selected set of HRD parameters to configure a HRD that performs the decoding process.

5. The method of claim **4**,

wherein performing the decoding process further comprises decoding, from a sequence parameter set (SPS), an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a decoded picture buffer (DPB) of the HRD; and

wherein performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

determining that the bitstream is not in conformance with the video coding standard when a value indicated by the particular syntax element is greater than a maximum DPB size.

6. The method of claim **4**,

wherein performing the decoding process comprises decoding, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

wherein performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

performing a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an Instantaneous Decoding Refresh (IDR) picture or a Broken Link Access (BLA) picture and the number of pictures in the DPB marked as needed for output is greater than a value indicated by the particular syntax element.

7. The method of claim **4**,

wherein performing the decoding process comprises decoding, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

wherein performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

performing a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an IDR picture or a BLA picture and the number of pictures in the DPB is indicated by the particular syntax element.

8. The method of claim **4**,

wherein performing the decoding process comprises decoding, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD;

wherein performing the bitstream conformance test comprises determining, based on the target highest temporal identifier, a particular syntax element in the array; and

wherein a number of picture storage buffers in the DPB is indicated by the particular syntax element.

9. The method of claim **4**,

wherein performing the decoding process comprises:

decoding, from an SPS active for a current picture, a first array of syntax elements that each indicate a respective maximum required size of a DPB of the HRD;

decoding, from an SPS active for a preceding picture, a second array of syntax elements that each indicate a respective maximum required size of the DPB of the HRD;

determining, based on the target highest temporal identifier, a first syntax element in the first array;

determining, based on the target highest temporal identifier, a second syntax element in the second array; and

when the current picture is an IDR picture or a BLA picture and a value indicated by the first syntax element is different from a value indicated by the second syntax element, inferring a value of a third syntax element regardless of a value indicated by the third syntax element, wherein the third syntax element specifies how previously-decoded pictures in the DPB are treated after decoding of an IDR picture or BLA picture.

10. The method of claim **4**,

wherein performing the decoding process comprises decoding a HRD parameters syntax structure that includes the selected set of HRD parameters, wherein the selected set of HRD parameters includes an array of

syntax elements that each indicate a number of alternative coded picture buffer (CPB) specifications in the bitstream; and

wherein performing the bitstream conformance test comprises:

selecting, based on the target highest temporal identifier, a particular syntax element in the array;

selecting a scheduler selection index in a range of 0 to a value indicated by the particular syntax element; and

determining, based at least in part on the scheduler selection index, an initial CPB removal delay of a CPB of the HRD.

11. The method of claim **4**,

wherein performing the decoding process further comprises decoding, from a SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a DPB of the HRD; and

wherein performing the bitstream conformance test comprises:

determining, based on the target highest temporal identifier, a particular syntax element in the array; and

determining, based at least in part on whether a number of decoded pictures in the DPB is less than or equal to the maximum of 0 and a value indicated by the particular syntax element minus 1, whether the bitstream conforms to the video coding standard.

12. A device for processing video data, the device comprising:

a storage medium configured to store encoded video data; and

one or more processors configured to:

perform a decoding process that decodes the encoded video data, wherein as part of performing the decod-

ing process, the one or more processors being further configured to:

determine a target highest temporal identifier, wherein, as part of determining the target highest temporal identifier, the one or more processors:

determine whether the target highest temporal identifier is specified by an external means;

responsive to determining the target highest temporal identifier is not specified by any external means and responsive to determining the decoding process is invoked in a bitstream conformance test that determines whether a bitstream comprising the encoded video data conforms to a video coding standard:

select an operation point under test, and

set the target highest temporal identifier equal to the greatest temporal identifier present in a sub-bitstream corresponding to the operation point under test, wherein the greatest temporal identifier present in the sub-bitstream is less than a greatest temporal identifier present in the bitstream, and

otherwise, set the target highest temporal identifier to a value of a syntax element specifying a maximum number of temporal sub-layers in the bitstream;

perform a bitstream extraction process that derives a sub-bitstream, the bitstream extraction process comprising removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier; and

decode NAL units of the sub-bitstream.

13. The device of claim 12, wherein:
the operation point is a first operation point,
the one or more processors are configured to perform the decoding process a second time,
when the decoding process is performed the second time, the decoding process is not performed as part of the bitstream conformance test, and
the one or more processors are configured such that when the one or more processors perform the decoding process for the second time, the one or more processors:
receive, from the external source, a second target highest temporal identifier;
perform the bitstream extraction process to derive a second sub-bitstream, the bitstream extraction process to derive the second sub-bitstream comprising removing, from the bitstream, all NAL units with temporal identifiers greater than the second target highest temporal identifier; and
decode NAL units of the second sub-bitstream.

14. The device of claim 12, wherein:
the operation point is a first operation point,
the one or more processors are configured to perform the decoding process a second time,
when the decoding process is performed the second time, the decoding process is not set by the external means and not performed as part of the bitstream conformance test, and
the one or more processors are configured such that when the one or more processors perform the decoding process for the second time, the one or more processors:
perform the bitstream extraction process to derive a second sub-bitstream, the bitstream extraction process to derive the second sub-bitstream comprising remov-

ing, from the bitstream, all NAL units with temporal identifiers greater than a second target highest temporal identifier,

wherein 0 is the only value indicated by layer identifier syntax elements present in the second sub-bitstream, and

wherein the second target highest temporal identifier is set to the value of the syntax element specifying the maximum number of temporal sub-layers present in the bitstream; and

decode NAL units of the second sub-bitstream.

15. The device of claim **12**, wherein the one or more processors are configured such that when the one or more processors perform the bitstream conformance test, the one or more processors:

select a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

use the selected set of HRD parameters to configure a HRD that performs the decoding process.

16. The device of claim **15**,

wherein the one or more processors are configured such that when the one or more processors perform the decoding process, the one or more processors decode, from a sequence parameter set (SPS), an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a decoded picture buffer (DPB) of the HRD; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

determine that the bitstream is not in conformance with the video coding standard when a value indicated by the particular syntax element is greater than a maximum DPB size.

17. The device of claim **15**,

wherein when the one or more processors perform the decoding process, the one or more processors decode, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

perform a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an Instantaneous Decoding Refresh (IDR) picture or a Broken Link Access (BLA) picture and the number of pictures in the DPB marked as needed for output is greater than a value indicated by the particular syntax element.

18. The device of claim **15**, wherein:

wherein when the one or more processors perform the decoding process, the one or more processors decode, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

perform a bumping process that empties one or more picture storage buffers of the DPB when a current picture is not an DR picture or a BLA picture and the

number of pictures in the DPB is indicated by the particular syntax element.

19. The device of claim **15**,

wherein when the one or more processors perform the decoding process, the one or more processors decode, from a SPS, an array of syntax elements that each indicate a maximum required size of a DPB of the HRD;

wherein when the one or more processors perform the bitstream conformance test, the one or more processors determine, based on the target highest temporal identifier, a particular syntax element in the array; and

wherein a number of picture storage buffers in the DPB is indicated by the particular syntax element.

20. The device of claim **15**,

wherein when the one or more processors perform the decoding process, the one or more processors:

decode, from an SPS active for a current picture, a first array of syntax elements that each indicate a respective maximum required size of a DPB of the HRD;

decode, from an SPS active for a preceding picture, a second array of syntax elements that each indicate a respective maximum required size of the DPB of the HRD;

determine, based on the target highest temporal identifier, a first syntax element in the first array;

determine, based on the target highest temporal identifier, a second syntax element in the second array; and

when the current picture is an IDR picture or a BLA picture and a value indicated by the first syntax element is different from a value indicated by the second syntax element, infer a value of a third syntax element regardless of a value indicated by the third syntax element, wherein the third syntax element specifies

how previously-decoded pictures in the DPB are treated after decoding of an IDR picture or BLA picture.

21. The device of claim **15**,

wherein when the one or more processors perform the decoding process, the one or more processors decode a HRD parameters syntax structure that includes the selected set of HRD parameters, wherein the selected set of HRD parameters includes an array of syntax elements that each indicate a number of alternative coded picture buffer (CPB) specifications in the bitstream; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

select, based on the target highest temporal identifier, a particular syntax element in the array;

select a scheduler selection index in a range of 0 to a value indicated by the particular syntax element; and

determine, based at least in part on the scheduler selection index, an initial CPB removal delay of a CPB of the HRD.

22. The device of claim **15**,

wherein when the one or more processors perform the decoding process, the one or more processors decode, from a SPS, an array of syntax elements, wherein each of the syntax elements in the array indicates a maximum required size of a DPB of the HRD; and

wherein when the one or more processors perform the bitstream conformance test, the one or more processors:

determine, based on the target highest temporal identifier, a particular syntax element in the array; and

determine, based at least in part on whether a number of decoded pictures in the DPB is less than or equal to the maximum of 0 and a value indicated by the particular syntax element minus 1, whether the bitstream conforms to the video coding standard.

23. The device of claim **12**, wherein the device comprises at least one of:

an integrated circuit;

a microprocessor; or

a wireless communication device.

24. The device of claim **12**, further comprising a display configured to display decoded video data.

25. The device of claim **12**, further comprising a camera configured to capture video data.

26. A device for processing video data, the device comprising:

means for storing encoded video data; and

means for performing a decoding process that decodes the encoded video data, wherein performing the decoding process comprises:

determining a target highest temporal identifier, wherein determining the target highest temporal identifier comprises:

determining whether the target highest temporal identifier is specified by an external means;

responsive to determining the target highest temporal identifier is not specified by any external means and responsive to determining the decoding process is invoked in a bitstream conformance test that determines whether a bitstream comprising the encoded video data conforms to a video coding standard:

selecting an operation point under test, and

setting the target highest temporal identifier equal to the greatest temporal identifier present in a sub-bitstream corresponding to the operation point under test, wherein the greatest temporal

identifier present in the sub-bitstream is less than a greatest temporal identifier present in the bitstream, and

otherwise, setting the target highest temporal identifier to a value of a syntax element specifying a maximum number of temporal sub-layers in the bitstream;

performing a bitstream extraction process that derives a sub-bitstream, the bitstream extraction process comprising removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier; and

decoding NAL units of the sub-bitstream.

27. The device of claim **26**, wherein performing the bitstream conformance test comprises:

selecting a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

using the selected set of HRD parameters to configure a HRD that performs the decoding process.

28. A computer-readable storage medium having instructions stored thereon that, when executed by one or more processors of a device, configure the device to:

perform a decoding process that decodes encoded video data, wherein the instructions configuring the data to perform the decoding process comprise instructions that, when executed, configure the device to:

determine a target highest temporal identifier, wherein the instructions configuring the device to determine the target highest temporal identifier comprise instructions that, when executed, configure the device to:

determine whether the target highest temporal identifier is specified by an external means;

responsive to determining the target highest temporal identifier is not specified by any external means and responsive to determining the decoding process is invoked in a bitstream conformance test that determines whether a bitstream comprising the encoded video data conforms to a video coding standard:

select an operation point under test, and

set the target highest temporal identifier equal to the greatest temporal identifier present in a sub-bitstream corresponding to the operation point under test, wherein the greatest temporal identifier present in the sub-bitstream is less than a greatest temporal identifier present in the bitstream, and

otherwise, set the target highest temporal identifier to a value of a syntax element specifying a maximum number of temporal sub-layers in the bitstream;

perform a bitstream extraction process that derives a sub-bitstream, the bitstream extraction process comprising removing, from the bitstream, all Network Abstraction Layer (NAL) units with temporal identifiers greater than the target highest temporal identifier; and

decode NAL units of the sub-bitstream.

29. The computer-readable storage medium of claim **28**, wherein the instructions configure the device such that during the bitstream conformance test, the device:

selects a set of hypothetical reference decoder (HRD) parameters applicable to the operation point under test; and

uses the selected set of HRD parameters to configure a HRD that performs the decoding process.