

CLAIMS

1. A method of decoding video data, the method comprising:
determining, based on a Network Abstraction Layer (NAL) unit type of a NAL unit for a coded slice of a current picture, that the current picture is a broken-link access (BLA) picture, wherein the BLA picture is associated with one or more leading pictures, including a non-decodable leading picture, wherein the non-decodable leading picture references a reference picture that is not the BLA picture and is not any picture that follows the BLA picture in decoding order, and wherein the BLA picture includes syntax elements that specify a non-empty reference picture set (RPS);
based on determining that the current picture is a BLA picture, marking all reference pictures in a picture storage buffer as unused for reference prior to decoding the BLA picture; and
decoding the leading pictures of the BLA picture by applying a particular decoding process, wherein the particular decoding process is used to decode leading pictures of a clean random access (CRA) picture at the start of a bitstream, and wherein the particular decoding process allows CRA pictures that start bitstreams to be followed in decoding order by leading pictures that cannot be decoded due to missing prior reference pictures.
2. The method of claim 1, wherein the picture storage buffer includes a decoded picture buffer (DPB).
3. The method of claim 1, further comprising decoding the BLA picture in a decoder.
4. The method of claim 1, further comprising decoding the BLA picture without using the reference pictures marked as unused for reference.

5. The method of claim 1, further comprising:

receiving, in a slice header of the coded slice of the current picture, at least one entropy coded syntax element and at least one non-entropy coded syntax element, wherein the non-entropy coded syntax element is before the entropy coded syntax element in the slice header and the non-entropy coded syntax element indicates whether pictures prior to the current picture in decoding order are to be emptied from a decoded picture buffer without being output; and decoding the slice based on the non-entropy coded syntax element.

6. The method of claim 5, wherein the non-entropy coded syntax element comprises a `no_output_of_prior_pics_flag`.

7. A device for decoding video data, the device comprising:

a picture storage buffer; and

one or more processors configured to:

determine, based on a Network Abstraction Layer (NAL) unit type of a NAL unit for a coded slice of a current picture, that the current picture is a broken-link access (BLA) picture, wherein the BLA picture is associated with one or more leading pictures, including a non-decodable leading picture, wherein the non-decodable leading picture references a reference picture that is not the BLA picture and is not any picture that follows the BLA picture in decoding order, and wherein the BLA picture includes syntax elements that specify a non-empty reference picture set (RPS);

based on determining that the current picture is a BLA picture, mark all reference pictures in the picture storage buffer as unused for reference prior to decoding the BLA picture; and

decode the leading pictures of the BLA picture by applying a particular decoding process, wherein the particular decoding process is used to decode leading pictures of a clean random access (CRA) picture at the start of a bitstream, and wherein the particular decoding process allows CRA pictures that start bitstreams to be followed in decoding order by leading pictures that cannot be decoded due to missing prior reference pictures.

8. The device of claim 7, wherein the picture storage buffer includes a decoded picture buffer (DPB).
9. The device of claim 8, wherein the device comprises a decoder.
10. The device of claim 7, wherein the device comprises a splicer.
11. The device of claim 7, wherein the one or more processors are further configured to decode the BLA picture without using the reference pictures marked as unused for reference.
12. The device of claim 7, wherein the one or more processors are further configured to:
 - receive, in a slice header of the coded slice of the current picture, at least one entropy coded syntax element and at least one non-entropy coded syntax element, wherein the non-entropy coded syntax element is before the entropy coded syntax element in the slice header and the non-entropy coded syntax element indicates whether pictures prior to the current picture in decoding order are to be emptied from a decoded picture buffer without being output; and
 - decode the slice based on the non-entropy coded syntax element.

13. The device of claim 12, wherein the non-entropy coded syntax element comprises a `no_output_of_prior_pics_flag`.

14. A device for decoding video data, the device comprising:

means for determining, based on a Network Abstraction Layer (NAL) unit type of a NAL unit for a coded slice of a current picture, that the current picture is a broken-link access (BLA) picture, wherein the BLA picture is associated with one or more leading pictures, including a non-decodable leading picture, wherein the non-decodable leading picture references a reference picture that is not the BLA picture and is not any picture that follows the BLA picture in decoding order, and wherein the BLA picture includes syntax elements that specify a non-empty reference picture set (RPS);

means for marking, based on determining that the current picture is a BLA picture, all reference pictures in a picture storage buffer as unused for reference prior to decoding the BLA picture; and

means for decoding the leading pictures of the BLA picture by applying a particular decoding process, wherein the particular decoding process is used to decode leading pictures of a clean random access (CRA) picture at the start of a bitstream, and wherein the particular decoding process allows CRA pictures that start bitstreams to be followed in decoding order by leading pictures that cannot be decoded due to missing prior reference pictures.

15. The device of claim 14, wherein the picture storage buffer comprises a decoded picture buffer (DPB).

16. A non-transitory, tangible computer storage medium having stored thereon instructions that, when executed, cause one or more processors of a device to:

determine, based on a Network Abstraction Layer (NAL) unit type of a NAL unit for a coded slice of a current picture, that the current picture is a broken-link access (BLA) picture, wherein the BLA picture is associated with one or more leading pictures, including a non-decodable leading picture, wherein the non-decodable leading picture references a reference picture that is not the BLA picture and is not any picture that follows the BLA picture in decoding order, and wherein the BLA picture includes syntax elements that specify a non-empty reference picture set (RPS);

based on determining that the current picture is a BLA picture, mark all reference pictures in a picture storage buffer as unused for reference prior to decoding the BLA picture; and

decode the leading pictures of the BLA picture by applying a particular decoding process, wherein the particular decoding process is used to decode leading pictures of a clean random access (CRA) picture at the start of a bitstream, and wherein the particular decoding process allows CRA pictures that start bitstreams to be followed in decoding order by leading pictures that cannot be decoded due to missing prior reference pictures.

17. The storage medium of claim 16, further comprising instructions that cause the one or more processors to allocate a portion of a memory to a picture storage buffer that forms part of a decoded picture buffer (DPB).

18. The storage medium of claim 16, further comprising instructions that cause the one or more processors to cause a decoder to decode the BLA picture.