~~**WHAT IS CLAIMED IS:**~~

CLAIMS

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

obtaining a bitstream that comprises an encoded representation of the video data, wherein the bitstream includes a coded slice Network Abstraction Layer (NAL) unit for a slice of a picture of a current layer of the video data; and

determining that the bitstream does not satisfy a constraint imposed by a video coding standard based on a determination that (i) a layer identifier of an applicable Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) NAL unit is not ~~being~~ equal to a layer identifier of the coded slice NAL unit and ~~not being~~(ii) the layer identifier of the applicable LMCS APS NAL unit is not equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit,

wherein the applicable LMCS APS NAL unit has an APS identifier specified by a LMCS APS identifier syntax element for the coded slice NAL unit.

2. The method of claim 1, wherein the bitstream is a first bitstream, the method further comprising decoding a second bitstream based on a determination that the second bitstream satisfies the constraint.

~~3. The method of claim 1, wherein determining that the bitstream does not satisfy the constraint comprises determining that the bitstream does not satisfy the constraint based on the layer identifier of the applicable LMCS APS NAL unit not being equal to the layer identifier of the coded slice NAL unit and not being equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.~~

~~4~~3. The method of claim 1, wherein:

the constraint is a first constraint, and

the method further comprises determining that the bitstream does not satisfy a second constraint imposed by the video coding standard based on a temporal identifier of the applicable

LMCS APS NAL unit not being less than or equal to a temporal identifier of the coded slice NAL unit.

~~5~~4. A method of encoding video data, the method comprising:

obtaining video data from a video source; and

performing an encoding process that encodes the video data according to a video coding standard, wherein performing the encoding process comprises:

generating a Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) identifier syntax element for a coded slice Network Abstraction Layer (NAL) unit, wherein:

the LMCS APS identifier syntax element specifies a layer identifier of a LMCS APS NAL unit, and

the video coding standard imposes a constraint on the encoding process that requires (i) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of the coded slice NAL unit or (ii) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit.

~~6~~5. The method of claim ~~5~~4, wherein the constraint requires the layer identifier of the applicable LMCS APS NAL unit to be equal to the layer identifier of the coded slice NAL unit or equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.

~~7~~6. The method of claim ~~5~~4, wherein:

the constraint is a first constraint, and

the video coding standard imposes a second constraint that requires a temporal identifier of the LMCS APS NAL unit to be less than or equal to a temporal identifier of the coded slice NAL unit.

~~8~~7. A device for processing video data, the device comprising:

a memory to store the video data; and

one or more processors implemented in circuitry, the one or more processors configured to:

obtain a bitstream that comprises an encoded representation of the video data; and

determine that the bitstream does not satisfy a constraint imposed by a video coding standard based on a determination that (i) a layer identifier of an applicable Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) Network Abstraction Layer (NAL) unit is not ~~being~~ equal to a layer identifier of the coded slice NAL unit and ~~not being~~(ii) the layer identifier of the applicable LMCS APS NAL unit is not equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit,

wherein the applicable LMCS APS NAL unit has an APS identifier specified by a LMCS APS identifier syntax element for the coded slice NAL unit.

~~9~~8. The device of claim ~~8~~7, wherein the one or more processors are further configured to decode the bitstream based on a determination that the bitstream satisfies the constraint.

~~10~~9. The device of claim ~~8~~7, further comprising a display configured to display decoded video data.

~~11. The device of claim 9, wherein the one or more processors are configured such that, as part of determining that the bitstream does not satisfy the constraint, the one or more processors determine that the bitstream does not satisfy the constraint based on the layer identifier of the applicable LMCS APS NAL unit not being equal to the layer identifier of the coded slice NAL unit and not being equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.~~

~~12. The device of claim 8, wherein:~~

10. The device of claim 7, wherein:

the constraint is a first constraint, and

the one or more processors are further configured to determine that the bitstream does not satisfy a second constraint imposed by the video coding standard based on a temporal identifier

of the applicable LMCS APS NAL unit not being less than or equal to a temporal identifier of the coded slice NAL unit.

~~13~~11. The device of claim ~~8~~7, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

~~14~~12. A device for encoding video data, the device comprising:

a memory to store the video data; and

one or more processors implemented in circuitry, the one or more processors configured to:

obtain video data from a video source; and

perform an encoding process that encodes the video data according to a video coding standard, wherein the one or more processors are configured such that, as part of performing the encoding process, the one or more processors:

generate a Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) identifier syntax element for a coded slice Network Abstraction Layer (NAL) unit, wherein:

the LMCS APS identifier syntax element specifies a layer identifier of a LMCS APS NAL unit, and

the video coding standard imposes a constraint on the encoding process that requires (i) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of the coded slice NAL unit or (ii) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit.

~~15~~13. The device of claim ~~14~~12, wherein the constraint requires the layer identifier of the applicable LMCS APS NAL unit to be equal to the layer identifier of the coded slice NAL unit or equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.

~~16~~14. The device of claim ~~14~~12, wherein:

the constraint is a first constraint, and

the video coding standard imposes a second constraint that requires a temporal identifier of the LMCS APS NAL unit to be less than or equal to a temporal identifier of the coded slice NAL unit.

~~17~~15. The device of claim ~~14~~12, wherein the device comprises one or more of a camera, a computer, a mobile device, a broadcast receiver device, or a set-top box.

~~18~~16. A device for processing video data, the device comprising:

means for obtaining a bitstream that comprises an encoded representation of the video data; and

means for determining that the bitstream does not satisfy a constraint imposed by a video coding standard based on a determination that (i) a layer identifier of an applicable Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) Network Abstraction Layer (NAL) unit is not ~~being~~ equal to a layer identifier of the coded slice NAL unit and ~~not being~~(ii) the layer identifier of the applicable LMCS APS NAL unit is not equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit,

wherein the applicable LMCS APS NAL unit has an APS identifier specified by a LMCS APS identifier syntax element for the coded slice NAL unit.

~~19~~17. The device of claim ~~18~~16, further comprising means for decoding the bitstream based on a determination that the bitstream satisfies the constraint.

~~20. The device of claim 18, wherein the means for determining that the bitstream does not satisfy the constraint comprises means for determining that the bitstream does not satisfy the constraint based on the layer identifier of the applicable LMCS APS NAL unit not being equal to the layer identifier of the coded slice NAL unit and not being equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.~~

~~21. The device of claim 18, wherein:~~

18. The device of claim 16, wherein:

the constraint is a first constraint, and

the device further comprises means for determining that the bitstream does not satisfy a second constraint imposed by the video coding standard based on a temporal identifier of the applicable LMCS APS NAL unit not being less than or equal to a temporal identifier of the coded slice NAL unit.

~~22~~19. A device for encoding video data, the device comprising:

means for obtaining video data from a video source; and

means for performing an encoding process that encodes the video data according to a video coding standard, wherein the means for performing the encoding process comprises:

generating a Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) identifier syntax element for a coded slice Network Abstraction Layer (NAL) unit, wherein:

the LMCS APS identifier syntax element specifies a layer identifier of a LMCS APS NAL unit, and

the video coding standard imposes a constraint on the encoding process that requires (i) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of the coded slice NAL unit or (ii) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit.

~~23~~20. The device of claim ~~22~~19, wherein the constraint requires the layer identifier of the applicable LMCS APS NAL unit to be equal to the layer identifier of the coded slice NAL unit or equal to the layer identifier of any layer that is used to predict the layer of the coded slice NAL unit.

~~24~~21. The device of claim ~~22~~19, wherein:

the constraint is a first constraint, and

the video coding standard imposes a second constraint that requires a temporal identifier of the LMCS APS NAL unit to be less than or equal to a temporal identifier of the coded slice

NAL unit.

~~25~~22. A non-transitory computer-readable data storage medium having stored thereon instructions that, when executed, cause one or more processors to:

obtain a bitstream that comprises an encoded representation of the video data; and

determine that the bitstream does not satisfy a constraint imposed by a video coding standard based on a determination that (i) a layer identifier of an applicable Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) Network Abstraction Layer (NAL) unit is not ~~being~~ equal to a layer identifier of the coded slice NAL unit and ~~not being~~(ii) the layer identifier of the applicable LMCS APS NAL unit is not equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit,

wherein the applicable LMCS APS NAL unit has an APS identifier specified by a LMCS APS identifier syntax element for the coded slice NAL unit.

~~26~~23. A non-transitory computer-readable data storage medium having stored thereon instructions that, when executed, cause one or more processors to:

obtain video data from a video source; and

perform an encoding process that encodes the video data according to a video coding standard, wherein the instructions that cause the one or more processors to perform the encoding process comprise instructions that, when executed, cause the one or more processors to:

generate a Luma Mapping and Chroma Scaling (LMCS) Adaptation Parameter Set (APS) identifier syntax element for a coded slice Network Abstraction Layer (NAL) unit, wherein:

the LMCS APS identifier syntax element specifies a layer identifier of a LMCS APS NAL unit, and

the video coding standard imposes a constraint on the encoding process that requires (i) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of the coded slice NAL unit or (ii) the layer identifier of the LMCS APS NAL unit to be equal to a layer identifier of any layer that is allowed to be used to predict a layer of the coded slice NAL unit.