CLAIMS

What is claimed is:

1. A method of decoding implemented by a video decoder, comprising:

receiving, by the video decoder, a video bitstream including a picture unit (PU), wherein decoding capability information (DCI) network abstraction layer (NAL) unit in the PU precedes a picture header (PH) NAL unit of the PU and a first video coding layer (VCL) NAL unit of the PU; and

decoding, by the video decoder, a coded picture from the PU to obtain a decoded picture;

wherein a DCI is carried in the DCI NAL unit;

wherein the DCI NAL unit is a non-VCL NAL unit; and

wherein the DCI is a syntax structure containing syntax elements that apply to the entire video bitstream.

2. The method of claim 1, wherein the first VCL NAL unit contains a slice of the coded picture.

3. The method of claim 1 or 2, wherein the PH NAL unit is a non-VCL NAL unit.

4. The method of any of claims 1 to 3, wherein the PH NAL unit immediately precedes the first VCL NAL unit in the PU.

5. The method of any of claims 1 to 4, further comprising displaying the decoded picture on a display of an electronic device.

6. A method of encoding implemented by a video encoder, the method comprising:

generating, by the video encoder, a picture unit (PU) containing a decoding capability information (DCI) network abstraction layer (NAL) unit preceding a picture header (PH) NAL unit and a first video coding layer (VCL) NAL unit;

encoding, by the video encoder, the PU into a video bitstream; and

storing, by the video encoder, the video bitstream for communication toward a video decoder;

wherein a DCI is carried in the DCI NAL unit;

wherein the DCI NAL unit is a non-VCL NAL unit; and

wherein the DCI is a syntax structure containing syntax elements that apply to the entire video bitstream.

7. The method of claim 6, wherein the first VCL NAL unit contains a slice of the coded picture.

8. A decoding device, comprising:

a receiver configured to receive a video bitstream including a picture unit (PU), wherein any decoding capability information (DCI) network abstraction layer (NAL) unit in the PU precedes a picture header (PH) NAL unit of the PU and a first video coding layer (VCL) NAL unit of the PU;

a memory coupled to the receiver, the memory storing instructions; and

a processor coupled to the memory, the processor configured to execute the instructions to cause the decoding device to:

decode a coded picture from the PU to obtain a decoded picture;

wherein a DCI is carried in the DCI NAL unit;

wherein the DCI NAL unit is a non-VCL NAL unit; and

wherein the DCI is a syntax structure containing syntax elements that apply to the entire video bitstream.

9. The decoding device of claim 8, wherein the first VCL NAL unit contains a slice of the coded picture.

10. An encoding device, comprising:

a memory containing instructions;

a processor coupled to the memory, the processor configured to implement the instructions to cause the encoding device to:

generate a picture unit (PU) containing a decoding capability information (DCI) network abstraction layer (NAL) unit preceding a picture header (PH) NAL unit and a first video coding layer (VCL) NAL unit;

encode the PU into a video bitstream; and

a transmitter coupled to the processor, the transmitter configured to transmit the video bitstream toward a video decoder;

wherein a DCI is carried in the DCI NAL unit;

wherein the DCI NAL unit is a non-VCL NAL unit; and

wherein the DCI is a syntax structure containing syntax elements that apply to the entire video bitstream.

11. A coding apparatus, comprising:

a receiver configured to receive a picture to encode or to receive a bitstream to decode;

a transmitter coupled to the receiver, the transmitter configured to transmit the bitstream to a decoder or to transmit a decoded image to a display;

a memory coupled to at least one of the receiver or the transmitter, the memory configured to store instructions; and

a processor coupled to the memory, the processor configured to execute the instructions stored in the memory to perform the method in any of claims 1 to 5 or any of claims 6 to 7.

12. The coding apparatus of claim 11, further comprising a display configured to display a decoded picture.

13. A system, comprising:

an encoder; and

a decoder in communication with the encoder, wherein the encoder or the decoder includes the decoding device, the encoding device, or the coding apparatus of any of claims 8 to 10.

14. A means for coding, comprising:

receiving means configured to receive a picture to encode or to receive a bitstream to decode;

transmission means coupled to the receiving means, the transmission means configured to transmit the bitstream to a decoding means or to transmit a decoded image to a display means;

storage means coupled to at least one of the receiving means or the transmission means, the storage means configured to store instructions; and

processing means coupled to the storage means, the processing means configured to execute the instructions stored in the storage means to perform the method in any of claims 1 to 5 or any of claims 6 to 7.

15. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program that can be executed by a processor, and when the computer program is executed by the processor, the processor performs the method according to any one of claims 1 to 5 or any one of claims 6 to 7.

16. A storage medium, wherein the storage medium stores a bitstream obtained by using the method according to any one of claims 1 to 5 or any one of claims 6 to 7.

s

17. A program comprising program code for performing the method according to any one of claims 1 to 5 or any one of claims 6 to 7 when executed on a computer or a processor.

18. A coder comprising processing circuitry for carrying out the method according to any one of claims 1 to 5 or any one of claims 6 to 7.