CLAIMS

What is claimed is:

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

receiving a first picture parameter set and a second picture parameter set each referring to the same sequence parameter set, wherein the first picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window, and the second picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window; wherein when the value of the picture width in the first picture parameter set is the same as the value of the picture width in the second picture parameter set, and the value of the picture height in the first picture parameter set is the same as the value of the picture height in the second picture parameter set, the values of the conformance window in the first picture parameter set are the same as the values of the conformance window in the second picture parameter set; and

applying the conformance window to a current picture corresponding to the first picture parameter set or the second picture parameter set.

2. The method of claim 1, wherein the conformance window comprises a conformance window left offset, a conformance window right offset, a conformance window top offset, and a conformance window bottom offset.

3. The method of any one of claims 1 to 2, further comprising decoding the current picture corresponding to the first picture parameter set or the second picture parameter set using inter prediction after the conformance window has been applied, wherein the inter prediction is based on a resampled reference picture.

4. The method of any one of claims 1 to 3, further comprising resampling a reference picture associated with the current picture corresponding to the first picture parameter set or the second picture parameter set using reference picture resampling (RPS).

5. The method of claim 4, wherein the resampling of the reference picture changes a resolution of the reference picture used to inter predict the current picture corresponding to the first picture parameter set or the second picture parameter set.

6. The method of any one of claims 1 to 5, wherein the picture width and picture height are measured in luma samples.

7. The method of any one of claims 1 to 6, further comprising determining whether bi-direction optical flow (BDOF) is enabled for decoding the current picture based on the picture width, the picture height, and the conformance window of the current picture and a reference picture for the current picture.

8. The method of any one of claims 1 to 6, further comprising determining whether decoder-side motion vector refinement (DMVR) is enabled for decoding the current picture based on the picture width, the picture height, and the conformance window of the current picture and a reference picture for the current picture.

9. The method of any one of claims 1 to 6, further comprising displaying on a display of an electronic device an image generated using the current picture.

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

generating a first picture parameter set and a second picture parameter set each referring to the same sequence parameter set, wherein the first picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window, and the second picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window; wherein when the value of the picture width in the first picture parameter set is the same as the value of the picture width in the second picture parameter set, and the value of the picture height in the first picture parameter set is the same as the value of the picture height in the second picture parameter set, the values of the conformance window in the first picture parameter set are the same as the values of the conformance window in the second picture parameter set;

encoding the first picture parameter set and the second picture parameter set into a video bitstream.

11. The method of claim 10, wherein the conformance window comprises a conformance window left offset, a conformance window right offset, a conformance window top offset, and a conformance window bottom offset.

12. The method of any one of claims 10 to 11, wherein the picture width and picture height are measured in luma samples.

13. The method of any one of claims 10 to 12, further comprising transmitting the video bitstream containing the first picture parameter set and the second picture parameter set toward the video decoder.

14. A decoding device, comprising:

a receiver configured to receive a coded video bitstream;

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:

receive a first picture parameter set and a second picture parameter set each referring to the same sequence parameter set, wherein the first picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window, and the second picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window; wherein when the value of the picture width in the first picture parameter set is the same as the value of the picture width in the second picture parameter set, and the value of the picture height in the first picture parameter set is the same as the value of the picture height in the second picture parameter set, the values of the conformance window in the first picture parameter set are the same as the values of the conformance window in the second picture parameter set; and

apply the conformance window to a current picture corresponding to the first picture parameter set or the second picture parameter set.

15. The decoding device of claim 14, wherein the conformance window comprises a conformance window left offset, a conformance window right offset, a conformance window top offset, and a conformance window bottom offset.

16. The decoding device of any one of claims 14 to 15, the processor further configured to execute the instructions to cause the decoding device to decode the current picture corresponding to the first picture parameter set or the second picture parameter set using inter prediction after the conformance window has been applied, wherein the inter prediction is based on a resampled reference picture.

17. The decoding device of any one of claims 15 to 16, further comprising a display configured to display an image generated based on the current picture.

18. 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 first picture parameter set and a second picture parameter set each referring to the same sequence parameter set, wherein the first picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window, and the second picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window; wherein when the value of the picture width in the first picture parameter set is the same as the value of the picture width in the second picture parameter set, and the value of the picture height in the first picture parameter set is the same as the value of the picture height in the second picture parameter set, the values of the conformance window in the first picture parameter set are the same as the values of the conformance window in the second picture parameter set; and

encode the first picture parameter set and the second picture parameter set into a video bitstream.

19. The encoding device of claim 18, wherein the conformance window comprises a conformance window left offset, a conformance window right offset, a conformance window top offset, and a conformance window bottom offset.

20. The encoding device of any one of claims 18 to 19, wherein the picture width and picture height are measured in luma samples.

21. 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 one of claims 1 to 9 and any one of claims 10 to 13.

22. The coding apparatus of claim 21, further comprising a display configured to display an image.

23. A system, comprising:

an encoder; and

a decoder in communication with the encoder, wherein the encoder includes the encoding device of any one of claims 18 to 20, the decoder includes the decoding device of any one of claims 14 to 17, or the coding apparatus of any one of claims 21 to 22.

24. 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 one of claims 1 to 9 and any one of claims 10 to 13.

25. A non-transitory computer readable medium comprising a bitstream, wherein the bitstream comprises a sequence parameter set (SPS), a first picture parameter set and a second picture parameter set each referring to the same SPS, wherein the first picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window, and the second picture parameter set comprises a value of a picture width, a value of a picture height and values of a conformance window; wherein when the value of the picture width in the first picture parameter set is the same as the value of the picture width in the second picture parameter set, and the value of the picture height in the first picture parameter set is the same as the value of the picture height in the second picture parameter set, the values of the conformance window in the first picture parameter set are the same as the values of the conformance window in the second picture parameter set.