CLAIMS

1. A method implemented in a decoder, the method comprising:

receiving a bitstream comprising one or more sub-pictures partitioned from a picture, and sequence parameter set (SPS) comprising parameters, wherein the parameters comprise a sub-picture size for each of the one or more sub-pictures and a sub-picture location for each of the one or more sub-pictures, wherein the SPS further comprises a sub-picture identifier (ID) for each of the one or more sub-pictures;

parsing the SPS to obtain the sub-picture ID, the sub-picture size and the sub-picture location for each of the one or more sub-pictures; and

generating the one or more sub-pictures based on the sub-picture ID, the sub-picture size and the sub-picture location for each of the one or more sub-pictures to create a video sequence.

2. The method of claim 1, wherein a corresponding sub-picture is a temporal motion constrained sub-picture, and wherein the sub-picture size and the sub-picture location indicate a layout of the temporal motion constrained sub-picture.

3. The method of claim 1 or 2, further comprising determining a size of a corresponding sub-picture relative to a size of a display based on the sub-picture size.

4. A method implemented in an encoder, the method comprising:

encoding one or more sub-pictures, partitioned from a picture, into a bitstream; and

encoding a sub-picture identifier (ID), a sub-picture size and a sub-picture location for each of the one or more sub-pictures into a sequence parameter set (SPS) in the bitstream.

5. The method of claim 4, the method further comprising:

storing, in a memory of the encoder, the bitstream for communication toward a decoder.

6. The method of claim 4 or 5, further comprising encoding, by the processor, a flag in the SPS to indicate that a corresponding sub-picture is a temporal motion constrained sub-picture.

7. The method of any one of claims 4 to 6, wherein the sub-picture size and the sub-picture location indicate a layout of a temporal motion constrained sub-picture.

8. A video coding device comprising:

a processor, a memory, a receiver coupled to the processor, and a transmitter coupled to the processor, the processor, memory, receiver, and transmitter configured to perform the method of any one of claims 1 to 7.

9. A non-transitory computer readable medium comprising a computer program product for use by a video coding device, the computer program product comprising computer executable instructions stored on the non-transitory computer readable medium such that when executed by a processor cause the video coding device to perform the method of any one of claims 1 to 7.

10. A decoder comprising:

a receiving unit, configured to receive a bitstream comprising one or more sub-pictures partitioned from a picture, and sequence parameter set (SPS) comprising parameters, wherein the parameters comprise a sub-picture size for each of the one or more sub-pictures and a sub-picture location for each of the one or more sub-pictures, wherein the SPS further comprises a sub-picture identifier (ID) for each of the one or more sub-pictures;

a parsing unit, configured to parse the SPS to obtain the sub-picture ID, the sub-picture size and the sub-picture location for each of the one or more sub-pictures; and

a generating unit, configured to generate the one or more sub-pictures based on the sub-picture ID, the sub-picture size and the sub-picture location for each of the one or more sub-pictures to create a video sequence.

11. The decoder of claim 10, wherein the decoder is further configured to perform the method of claim 2 or 3.

12. An encoder comprising:

an encoding unit, configured to:

encoding one or more sub-pictures, partitioned from a picture, into a bitstream; and

encoding a sub-picture identifier (ID), a sub-picture size and a sub-picture location for each of the one or more sub-pictures into a sequence parameter set (SPS) in the bitstream.

13. The encoder of claim 12, the encoder further comprising:

a storing unit, configured to store the bitstream for communication toward a decoder.

14. The encoder of claim 12 or 13, wherein the encoder is further configured to perform the method of claim 6 or 7.

15. A non-transitory storage medium which includes an encoded bitstream, the bitstream comprising one or more sub-pictures partitioned from a current picture, and a sequence parameter set (SPS) comprising parameters, wherein the parameters comprise a sub-picture size for each of the one or more sub-pictures and a sub-picture location for each of the one or more sub-pictures, and the SPS further comprises a sub-picture identifier (ID) for each of the one or more sub-pictures.

16. A device for coding, comprising:

receiving unit, configured to receive a bitstream to decode;

transmission unit coupled to the receiving unit, the transmission unit, configured to transmit a decoded image to a display unit;

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

processing unit coupled to the storage unit, the processing unit, configured to execute the instructions stored in the storage unit to perform the method in any one of claims 1 to 7.

17. A decoder comprising processing circuitry for carrying out the method according to any one of claims 1 to 3.

18. An encoder comprising processing circuitry for carrying out the method according to any of claims 4 to 7.

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

20. A non-transitory computer-readable medium carrying a program code which, when executed by a computer device, causes the computer device to perform the method of any one of claims 1 to 7.