CLAIMS

1. A method of processing video data, comprising:

performing encoding or decoding between a video comprising a video unit and a bitstream of the video,

wherein the bitstream conforms to a format rule,

wherein the format rule specifies that a syntax element indicating whether an in-loop filtering operation is allowed to be performed across slice boundaries is conditionally included in the bitstream based on whether the video unit is partitioned into more than one slice,

wherein when the video unit is a sub-picture, the format rule specifies that the syntax element is included in the bitstream when the sub-picture is partitioned into only one slice,

wherein the format rule specifies that the syntax element is included in the bitstream when a first flag is equal to 1, which specifies that the sub-picture consists of one and only one rectangular slice, and

wherein the first flag is single_slice_per_subpic_flag, and wherein the first flag is in a picture parameter set.

2. The method of claim 1, wherein the syntax element is in a picture parameter set.

3. The method of claim 1, wherein when the video unit is a picture, the format rule further specifies that the syntax element is included in the bitstream when the picture is partitioned in a non-rectangular shape.

4. The method of claim 3, wherein the format rule specifies that the syntax element is included in the bitstream when a second flag is equal to 0, which specifies that a raster-scan slice mode is in use for the picture.

5. The method of claim 4, wherein the raster-scan slice mode is a non-rectangular slice mode, wherein the second flag is rect_slice_flag, and wherein the second flag is in a picture parameter set.

6. The method of any of claims 1-5, wherein the format rule further specifies that information about applicability of a tool to the encoding or decoding is allowed to be indicated in the bitstream at both a video slice level and a video picture level, and wherein the tool is configured to map luma samples to particular values and selectively apply a scaling operation to values of chroma samples.

7. The method of any of claims 1-6, wherein performing the encoding or decoding comprises encoding the video into the bitstream.

8. The method of any of claims 1-6, wherein performing the encoding or decoding comprises decoding the video from the bitstream.

9. An apparatus for processing video data comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to:

perform encoding or decoding between a video comprising a video unit and a bitstream of the video,

wherein the bitstream conforms to a format rule, and

wherein the format rule specifies that a syntax element indicating whether an in-loop filtering operation is allowed to be performed across slice boundaries is conditionally included in the bitstream based on whether the video unit is partitioned into more than one slice,

wherein when the video unit is a sub-picture, the format rule specifies that the syntax element is included in the bitstream when the sub-picture is partitioned into only one slice,

wherein the format rule specifies that the syntax element is included in the bitstream when a first flag is equal to 1, which specifies that the sub-picture consists of one and only one rectangular slice, and

wherein the first flag is single_slice_per_subpic_flag, and wherein the first flag is in a picture parameter set.

10. The apparatus of claim 9, wherein the syntax element is in a picture parameter set.

11. The apparatus of claim 9, wherein when the video unit is a picture,the format rule further specifies that the syntax element is included in the bitstream when the picture is partitioned in a non-rectangular shape;

wherein the format rule specifies that the syntax element is included in the bitstream when a second flag is equal to 0 which specifies that a raster-scan slice mode is in use for the picture;

wherein the raster-scan slice mode is a non-rectangular slice mode, when the second flag is rect_slice_flag, and wherein the second flag is in a picture parameter set; and

wherein the format rule further specifies that information about applicability of a tool to the encoding or decoding is allowed to be indicated in the bitstream at both a video slice level and a video picture level, and wherein the tool is configured to map luma samples to particular values and selectively apply a scaling operation to values of chroma samples.

12. A non-transitory computer-readable storage medium storing instructions that cause a processor to:

perform a encoding or decoding between a video comprising a video unit and a bitstream of the video,

wherein the bitstream conforms to a format rule, and

wherein the format rule specifies that a syntax element indicating whether an in-loop filtering operation is allowed to be performed across slice boundaries is conditionally included in the bitstream based on whether the video unit is partitioned into more than one slice,

wherein when the video unit is a sub-picture, the format rule specifies that the syntax element is included in the bitstream when the sub-picture is partitioned into only one slice,

wherein the format rule specifies that the syntax element is included in the bitstream when a first flag is equal to 1, which specifies that the sub-picture consists of one and only one rectangular slice, and

wherein the first flag is single_slice_per_subpic_flag, and wherein the first flag is in a picture parameter set.

13. The non-transitory computer-readable storage medium of claim 12, wherein the syntax element is in a picture parameter set.

14. The non-transitory computer-readable storage medium of claim 12, wherein when the video unit is a picture, the format rule further specifies that the syntax element is included in the bitstream when the picture is partitioned in a non-rectangular shape;

wherein the format rule specifies that the syntax element is included in the bitstream when a second flag being equal to 0 which specifies that a raster-scan slice mode is in use for the picture;

wherein the raster-scan slice mode is a non-rectangular slice mode, wherein the second flag is rect_slice_flag, and wherein the second flag is in a picture parameter set; and

wherein the format rule further specifies that information about applicability of a tool to the encoding or decoding is allowed to be indicated in the bitstream at both a video slice level and a video picture level, and wherein the tool is configured to map luma samples to particular values and selectively apply a scaling operation to the values of chroma samples.

15. A method for storing a bitstream of a video, wherein the method comprises:

generating a bitstream for a video comprising a video unit;

storing the bitstream in a non-transitory computer-readable recording medium,

wherein the bitstream conforms to a format rule,

wherein the format rule specifies that a syntax element indicating whether an in-loop filtering operation is allowed to be performed across slice boundaries is conditionally included in the bitstream based on whether the video unit is partitioned into more than one slice,

wherein when the video unit is a sub-picture, the format rule specifies that the syntax element is included in the bitstream when the sub-picture is partitioned into only one slice,

wherein the format rule specifies that the syntax element is included in the bitstream when a first flag is equal to 1, which specifies that the sub-picture consists of one and only one rectangular slice, and

wherein the first flag is single_slice_per_subpic_flag, and wherein the first flag is in a picture parameter set.

16. The method of claim 15, wherein the syntax element is in a picture parameter set.

17. The method of claim 15, wherein when the video unit is a picture, the format rule further specifies that the syntax element is included in the bitstream when the picture is partitioned in a non-rectangular shape;

wherein the format rule specifies that the syntax element is included in the bitstream when a second flag being equal to 0 which specifies that a raster-scan slice mode is in use for the picture; and

wherein the raster-scan slice mode is a non-rectangular slice mode, wherein the second flag is rect_slice_flag, and wherein the second flag is in a picture parameter set;

wherein the format rule further specifies that information about applicability of a tool to the encoding or decoding is allowed to be indicated in the bitstream at both a video slice level and a video picture level, and wherein the tool is configured to map luma samples to particular values and selectively apply a scaling operation to values of chroma samples.