CLAIMS

1. A method of video processing, comprising:

partitioning, for a conversion between a picture of a video and a bitstream of the video, the picture into one or more subpictures; and

performing the conversion at least based on the partitioning,

wherein the bitstream includes a first syntax element indicating a number of the one or more subpictures, and

wherein the first syntax element is coded using a scheme having a descriptor of ue(v),

wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the subpicture in units of CtbSizeY, and a fifth syntax element indicating a height of the subpicture in units of CtbSizeY in the bitstream, and

wherein CtbSizeY denotes a size of a coding tree block.

2. The method of claim 1, wherein the number of the one or more subpictures is denoted as N, a value of the first syntax element is denoted as (N-1), and N is an integer.

3. The method of claim 1~~ or 2~~, wherein an allowed maximum value of the first syntax element for the picture is a fixed value.

~~4. The method of anyone of claims 1-3, wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the sub-picture in units of CtbSizeY, and a fifth syntax element indicating a height of the sub-picture in units of CtbSizeY in the bitstream, and~~

~~wherein CtbSizeY denotes a size of a coding tree block.~~

~~5~~4. The method of claim ~~4~~1, wherein when the subpicture is ~~the~~ a first subpicture within the picture, the second syntax element and the third syntax element are not included in the bitstream, and values of the second syntax element and the third syntax element are inferred to be 0.

~~6~~5. The method of claim ~~4~~1, wherein the second syntax element is coded with fixed length coding,

wherein a length of the second syntax element is derived based on Ceil(Log2(V1)), and

wherein V1 is determined based on a variable relating to a width of the picture and CtbSizeY, and

wherein Ceil(x) denotes ~~the~~ a smallest integer greater than or equal to x.

~~7~~6. The method of claim 41, wherein the third syntax element is coded with fixed length coding,

wherein a length of the third syntax element is derived based on Ceil(Log2(V2)),

wherein V2 is determined based on a variable relating to a height of the picture and CtbSizeY, and

wherein Ceil(x) denotes ~~the~~ a smallest integer greater than or equal to x.

~~8~~7. The method of claim 41, wherein the fourth syntax element is coded with fixed length coding,

wherein a length of the fourth syntax element is derived based on Ceil(Log2(V1)),

wherein V1 is determined based on a variable relating to a width of the picture and CtbSizeY, and

wherein Ceil(x) denotes ~~the~~ a smallest integer greater than or equal to x.

~~9~~8. The method of claim ~~4~~1, wherein the fifth syntax element is coded with fixed length coding,

wherein a length of the fifth syntax element is derived based on Ceil(Log2(V2)),

wherein V2 is determined based on a variable relating to a height of the picture and CtbSizeY, and

wherein Ceil(x) denotes ~~the~~ a smallest integer greater than or equal to x.

~~10~~9. The method of claim ~~4~~1, wherein the first syntax element, the second syntax element, the third syntax element, the fourth syntax element, and the fifth syntax element are included in the bitstream after a sixth syntax element being included, and

wherein a value of the sixth syntax element plus 5 relates to a coding tree unit size.

~~11~~10. The method of claim ~~10~~9, wherein a subpicture-treated-as-picture flag indicating whether the subpicture is treated as a picture in a process excluding in-loop filtering operations is included in the bitstream after the first syntax element, the second syntax element, the third syntax element, the fourth syntax element, and the fifth syntax element being included.

~~12~~11. The method of claim ~~10~~9, wherein a loop-filter-across-subpicture-enabled flag indicating whether in-loop filtering operations may be performed across boundaries of the subpicture is included in the bitstream after the first syntax element, the second syntax element, the third syntax element, the fourth syntax element, and the fifth syntax element being included.

~~13~~12. The method of ~~anyone of claims 1-12~~claim 1, wherein the scheme having a descriptor of ue(v) is a 0-th order Exp-Golomb coding scheme.

~~14~~13. The method of ~~anyone of claims 1-12~~claim 1, wherein the conversion includes encoding the picture into the bitstream.

~~15~~14. The method of ~~anyone of claims 1-12~~claim 1, wherein the conversion includes decoding the picture from the bitstream.

~~16~~15. 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:

partition, for a conversion between a picture of a video and a bitstream of the video, the picture into one or more subpictures; and

perform the conversion at least based on the partitioning,

wherein the bitstream includes a first syntax element indicating a number of the one or more subpictures, and

wherein the first syntax element is coded using a scheme having a descriptor of ue(v) ,

wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the subpicture in units of CtbSizeY, and a fifth syntax element indicating a height of the subpicture in units of CtbSizeY in the bitstream, and

wherein CtbSizeY denotes a size of a coding tree block.

~~17~~16. The apparatus of claim ~~16~~15, wherein the number of the one or more subpictures is denoted as N, a value of the first syntax element is denoted as (N-1), and N is an integer.

~~18. The apparatus of claim 16 or 17, wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the sub-picture in units of CtbSizeY, and a fifth syntax element indicating a height of the sub-picture in units of CtbSizeY in the bitstream, and~~

~~wherein CtbSizeY denotes a size of a coding tree block.~~

~~19~~17. A non-transitory computer-readable storage medium storing instructions that cause a processor to:

partition, for a conversion between a picture of a video and a bitstream of the video, the picture into one or more subpictures; and

perform the conversion at least based on the partitioning,

wherein the bitstream includes a first syntax element indicating a number of the one or more subpictures, and

wherein the first syntax element is coded using a scheme having a descriptor of ue(v) ,

wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the subpicture in units of CtbSizeY, and a fifth syntax element indicating a height of the subpicture in units of CtbSizeY in the bitstream, and

wherein CtbSizeY denotes a size of a coding tree block.

~~20~~18. A non-transitory computer-readable recording medium storing a bitstream of a video which is generated by a method performed by a video processing apparatus, wherein the method comprises:

partitioning, for a picture of a video, the picture into one or more subpictures; and

generating the bitstream at least based on the partitioning,

wherein the bitstream includes a first syntax element indicating a number of the one or more subpictures, and

wherein the first syntax element is coded using a scheme having a descriptor of ue(v),

wherein a subpicture of the one or more subpictures is indicated by including a second syntax element indicating a horizontal position of top left coding tree block (CTB) of the subpicture in unit of CtbSizeY, a third syntax element indicating a vertical position of top left CTB of the subpicture in unit of CtbSizeY, a fourth syntax element indicating a width of the subpicture in units of CtbSizeY, and a fifth syntax element indicating a height of the subpicture in units of CtbSizeY in the bitstream, and

wherein CtbSizeY denotes a size of a coding tree block.

19. The non-transitory computer-readable storage medium of claim 17, wherein the number of the one or more subpictures is denoted as N, a value of the first syntax element is denoted as (N-1), and N is an integer.

20. The non-transitory computer-readable recording medium of claim 18, wherein the number of the one or more subpictures is denoted as N, a value of the first syntax element is denoted as (N-1), and N is an integer.