

CLAIMS

What is claimed is:

1. A method of video processing, comprising:
performing a conversion between a picture of a video and a bitstream representation of the video, wherein the picture comprises one or more sub-pictures,
wherein the bitstream representation conforms to a format rule, and
wherein the format rule specifies that a length of a syntax element is equal to $\text{Ceil}(\text{Log}_2(\text{SS}))$ bits, wherein SS is greater than 0, and wherein the syntax element indicating a horizontal or a vertical position of a top-left corner of a coding tree unit of a sub-picture of the picture.
2. The method of claim 1, wherein the format rule further specifies that a default value of a length of a second syntax element is equal to $\text{Ceil}(\text{Log}_2(\text{SS})) - P$, wherein SS is greater than 0, and wherein the second syntax element indicating a default width or a default height of a sub-picture of the picture.
3. The method of claim 1 or 2, wherein a maximum picture width in luma samples is represented as `pic_width_max_in_luma_samples` and a dimension of a coding tree block is represented as `CtbSizeY`, and wherein SS is equal to $(\text{pic_width_max_in_luma_samples} + \text{RR}) / \text{CtbSizeY}$ in case the syntax element specifies the horizontal position of the top-left corner of the coding tree unit or the default width of the sub-picture, RR being a non-zero integer.
4. The method of claim 1 or 2, wherein a maximum picture height in luma samples is represented as `pic_height_max_in_luma_samples` and a dimension of a coding tree block is represented as `CtbSizeY`, and wherein SS is equal to $(\text{pic_height_max_in_luma_samples} + \text{RR}) / \text{CtbSizeY}$ in case the syntax element specifies the vertical position of the top-left corner of the coding tree unit or the default height of the sub-picture, RR being a non-zero integer.
5. The method of claim 3 or 4, wherein $\text{RR} = \text{CtbSizeY} - 1$.
6. A method of video processing, comprising:

performing a conversion between a picture of a video and a bitstream representation of the video, wherein the picture comprises one or more sub-pictures,

wherein the bitstream representation conforms to a format rule, and

wherein the format rule specifies that different sub-pictures have different identifiers.

7. The method of claim 6, wherein the format rule specifies that identifiers of one or more sub-pictures are included at a video unit level, the video unit comprising a sequence parameter set, a picture parameter set, or a picture header.

8. The method of claim 7, wherein a first syntax flag at the sequence parameter set indicates whether signaling of the identifiers of the one or more sub-pictures is present at the sequence parameter set level, a second syntax flag at the picture parameter set indicates whether signaling of the identifiers of the one or more sub-pictures is present at the picture parameter set level, and a third syntax flag at the picture header indicates whether signaling of the identifiers of the one or more sub-pictures is present at the picture header level, and wherein at least one of the first syntax flag, the second syntax flag, or the third syntax flag is equal to 1.

9. The method of claim 8, wherein signaling of the identifiers of the one or more sub-pictures is omitted at the picture header level in case the first syntax flag indicates that signaling of the identifiers of the one or more sub-pictures is present at the sequence parameter set level.

10. The method of any of claims 6 to 9, wherein the format rule specifies that identifiers of one or more sub-pictures are included in a list of sub-picture identifiers.

11. The method of claim 10, wherein the identifier of a first sub-picture in the list is denoted as $\text{SubpicIdList}[i]$ and the identifier of a second sub-picture is denoted as $\text{SubpicIdList}[j]$, where $j = i - P$, and wherein the format rule specifies that a difference $D[i]$ between $\text{SubpicIdList}[i]$ and $\text{SubpicIdList}[j]$ is indicated in the bitstream representation.

12. The method of claim 11, wherein P is equal to 1.

13. The method of claim 11, wherein $i > P$.
14. The method of claim 11, wherein $D[i]$ is greater than 0.
15. The method of claim 11, wherein $D[i]-1$ is included in the bitstream representation.
16. The method of any of claims 10 to 15, wherein the list of sub-picture identifiers is determined based on an order that the sequence parameter set is considered first, the picture parameter set is considered next, and the picture header is considered last.
17. The method of any of claims 10 to 15, wherein the list of sub-picture identifiers is determined based on an order that the picture head is considered first, the picture parameter set is considered next, and the sequence parameter set is considered last.
18. The method of claim 6, wherein the format rule specifies that, in case identifiers of one or more sub-pictures are omitted at one or more video unit levels, default values are assigned to the identifiers in a list of sub-picture identifiers, wherein the one or more video units comprise at least a sequence parameter set, a picture parameter set, or a picture header.
19. The method of claim 18, wherein an identifier of a sub-picture in the list is denoted as $\text{SubpicIdList}[i]$, and wherein a default value for $\text{SubpicIdList}[i]$ is $i + P$, P being an offset value.
20. The method of any of claims 1 to 19, wherein the conversion generates the video from the bitstream representation.
21. The method of any of claims 1 to 19, wherein the conversion generates the bitstream representation from the video.
22. A video processing apparatus comprising a processor configured to implement a method recited in any one or more of claims 1 to 21.

23. A computer-readable medium having code stored thereon, the code, when executed, causing a processor to implement a method recited in any one or more of claims 1 to 21.
24. A computer readable medium that stores a coded representation generated according to any of claims 1 to 21.