CLAIMS

1. A method of processing video data, comprising:

determining, for a conversion between a video region of a video and a bitstream of the video, whether a first coding mode associated with a first block of the video region and a second coding mode associated with a second block of the video region are enabled based on a dimension constraint;

wherein the dimension constraint states a same allowed maximum dimension for the first block to use the first coding mode and for the second block to use the second coding mode,

wherein, for an encoding process, both the first coding mode and the second coding mode do not apply a transform operation, or for a decoding process, both the first coding mode and the second coding mode do not apply an inverse transform operation, and

wherein the first coding mode includes a transform skip mode, and the second coding mode includes a differential coding mode, and wherein in the differential coding mode, differences between quantized residuals derived with an intra prediction mode of a block and predictions of the quantized residuals are included in the bitstream; and

performing the conversion based on the determining.

2. The method of claim 1, wherein a single first syntax element that indicates the allowed maximum dimension is included in the bitstream to control usage of the first coding mode and the second coding mode.

3. The method of claim 2, wherein the first syntax element is included in the bitstream in case that the first coding mode is enabled.

4. The method of any one of claims 1 to 3, wherein the first coding mode is enabled at a level which is not a coding unit level.

5. The method of any one of claims 1 to 4, wherein whether to enable the second coding mode depends on whether the first coding mode is enabled.

6. The method of any one of claims 1 to 5, wherein a second syntax element that indicates

on/off control for the second coding mode is included in the bitstream under a conditional check of whether the first coding mode is allowed.

7. The method of claim 6, wherein the second syntax element included at a sequence parameter set (SPS) level or a coding unit level.

8. The method of any one of claims 1 to 7, wherein in the first coding mode, a quantization operation is also skipped in the encoding process and an inverse quantization operation is also skipped in the decoding process.

9. The method of any one of claims 1 to 8, wherein the allowed maximum dimension is also used for a third coding mode associated with a third block of the video region, and wherein the third coding mode allows coefficient values at a transform domain of the third block to be same as values of a residual block of the third block.

10. The method of any one of claims 1 to 9, wherein in case that the second coding mode is allowed for the second block, the first coding mode is applied to one or more residual blocks of the second block.

11. The method of any one of claims 1 to 10, wherein the differences are represented using a block based differential pulse coding modulation representation.

12. The method of any one of claims 1 to 11, wherein the first block and the second block are a same block.

13. The method of any one of claims 1 to 12, wherein the conversion includes encoding the video region into the bitstream.

14. The method of any one of claims 1 to 12, wherein the conversion includes decoding the video region from the bitstream.

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:

determine, for a conversion between a video region of a video and a bitstream of the video, whether a first coding mode associated with a first block of the video region and a second coding mode associated with a second block of the video region are enabled based on a dimension constraint;

wherein the dimension constraint states a same allowed maximum dimension for the first block to use the first coding mode and for the second block to use the second coding mode,

wherein, for an encoding process, both the first coding mode and the second coding mode do not apply a transform operation, or for a decoding process, both the first coding mode and the second coding mode do not apply an inverse transform operation, and

wherein the first coding mode includes a transform skip mode, and the second coding mode includes a differential coding mode, and wherein in the differential coding mode, differences between quantized residuals derived with an intra prediction mode of a block and predictions of the quantized residuals are included in the bitstream; and

perform the conversion based on the determining.

16. The apparatus of claim 15, wherein a single first syntax element that indicates the allowed maximum dimension is included in the bitstream to control usage of the first coding mode and the second coding mode, and the first syntax element is included in the bitstream in case that the first coding mode is enabled, and

wherein the first coding mode is enabled at a level which is not a coding unit level.

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

determine, for a conversion between a video region of a video and a bitstream of the video, whether a first coding mode associated with a first block of the video region and a second coding mode associated with a second block of the video region are enabled based on a dimension constraint;

wherein the dimension constraint states a same allowed maximum dimension for the first

block to use the first coding mode and for the second block to use the second coding mode,

wherein, for an encoding process, both the first coding mode and the second coding mode do not apply a transform operation, or for a decoding process, both the first coding mode and the second coding mode do not apply an inverse transform operation, and

wherein the first coding mode includes a transform skip mode, and the second coding mode includes a differential coding mode, and wherein in the differential coding mode, differences between quantized residuals derived with an intra prediction mode of a block and predictions of the quantized residuals are included in the bitstream; and

perform the conversion based on the determining.

18. The non-transitory computer-readable storage medium of claim 17, wherein a single first syntax element that indicates the allowed maximum dimension is included in the bitstream to control usage of the first coding mode and the second coding mode, and the first syntax element is included in the bitstream in case that the first coding mode is enabled, and

wherein the first coding mode is enabled at a level which is not a coding unit level.

19. 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:

determining whether a first coding mode associated with a first block of a video region of the video and a second coding mode associated with a second block of the video region are enabled based on a dimension constraint;

wherein the dimension constraint states a same allowed maximum dimension for the first block to use the first coding mode and for the second block to use the second coding mode,

wherein, for an encoding process, both the first coding mode and the second coding mode do not apply a transform operation, or for a decoding process, both the first coding mode and the second coding mode do not apply an inverse transform operation, and

wherein the first coding mode includes a transform skip mode, and the second coding mode includes a differential coding mode, and wherein in the differential coding mode, differences between quantized residuals derived with an intra prediction mode of a block and predictions of the quantized residuals are included in the bitstream; and

generating the bitstream based on the determining.

20. The non-transitory computer-readable recording medium of claim 19, wherein a single first syntax element that indicates the allowed maximum dimension is included in the bitstream to control usage of the first coding mode and the second coding mode, and the first syntax element is included in the bitstream in case that the first coding mode is enabled, and

wherein the first coding mode is enabled at a level which is not a coding unit level.