CLAIMS

1. A method of processing video data, comprising:

determining, during a conversion between a current video unit of a video region of a video and a bitstream of the video, that a coding tool is used for the current video unit;

performing the conversion by using the coding tool during the conversion, in which the current video unit is constructed based on at least one of:

1) a forward mapping process for a luma component of the current video unit, in which prediction samples of the luma component are converted from an original domain to a reshaped domain;

2) an inverse mapping process, which is an inverse operation of the forward mapping process, in which reconstructed samples of the luma component of the current video unit in the reshaped domain are converted to the original domain; or

3) a scaling process, in which residual samples of a chroma component of the current video unit are scaled before being used to reconstruct the chroma component, and

wherein model information of the coding tool for the current video unit is included in the bitstream, and

wherein the video region is a picture, and one or more video units correspond to one or more slices, wherein in response to the picture comprising multiple slices including the current video unit, each of the multiple slices share the same model information of the coding tool as the current video unit.

2. The method of claim 1, wherein the model of the coding tool includes a piecewise linear model which is used to map the prediction samples of the luma component of the current video unit into particular values during the forward mapping process.

3. The method of claim 2, wherein a value of at least one variable of the piecewise linear model is dependent on a bit depth of the video.

4. The method of claim 2 or 3, wherein a range of a value of a code word for an i-th piecewise of the piecewise linear model is dependent on a bit depth of the video, and the code word for the i-th piecewise is associated with the particular values.

5. The method of any of claims 1-4, wherein the model information of the coding tool for the current video unit comprises a first syntax element and a second syntax element, the first syntax element specifying a difference between a maximum allowed bin index and a maximum bin index to be used in the forward mapping process, and the second syntax element specifying a minimum bin index to be used in the forward mapping process.

6. The method of claim 5, wherein a value of the first syntax element is in a range from 0 to the maximum allowed bin index.

7. The method of claim 5 or 6, wherein a value of the second syntax element is smaller than or equal to the maximum bin index to be used in the forward mapping process.

8. The method of any of claims 5-7, wherein a value of the second syntax element is in a range from 0 to the maximum bin index to be used in the forward mapping process.

9. The method of any of claims 5-8, wherein the maximum allowed bin index is equal to 15.

10. The method of any of claims 1-9, wherein a filtering process is applied on the converted reconstructed samples in the original domain generated in the inverse mapping process.

11. The method of any of claims 4-10, wherein the value of the code word for the i-th piecewise is determined based on the model information of the coding tool for the current video unit.

12. The method of any of claims 1-11, wherein a usage flag of the coding tool is included in a sequence parameter set.

13. The method of any of claims 1-12, wherein the conversion includes encoding the current video block into the bitstream.

14. The method of any of claims 1-12, wherein the conversion includes decoding the current video block 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, during a conversion between a current video unit of a video region of a video and a bitstream of the video, that a coding tool is used for the current video unit;

perform the conversion by using the coding tool during the conversion, in which the current video unit is constructed based on at least one of:

1) a forward mapping process for a luma component of the current video unit, in which prediction samples of the luma component are converted from an original domain to a reshaped domain;

2) an inverse mapping process, which is an inverse operation of the forward mapping process, in which reconstructed samples of the luma component of the current video unit in the reshaped domain are converted to the original domain; or

3) a scaling process, in which residual samples of a chroma component of the current video unit are scaled before being used to reconstruct the chroma component, and

wherein model information of the coding tool for the current video unit is included in the bitstream, and

wherein the video region is a picture, and one or more video units correspond to one or more slices, wherein in response to the picture comprising multiple slices including the current video unit, each of the multiple slices share the same model information of the coding tool as the current video unit.

16. The apparatus of claim 15, wherein the model information of the coding tool for the current video unit comprises a first syntax element and a second syntax element, the first syntax element specifying a difference between a maximum allowed bin index and a maximum bin index to be used

in the forward mapping process, and the second syntax element specifying a minimum bin index to be used in the forward mapping process.

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

determine, during a conversion between a current video unit of a video region of a video and a bitstream of the video, that a coding tool is used for the current video unit;

perform the conversion by using the coding tool during the conversion, in which the current video unit is constructed based on at least one of:

1) a forward mapping process for a luma component of the current video unit, in which prediction samples of the luma component are converted from an original domain to a reshaped domain;

2) an inverse mapping process, which is an inverse operation of the forward mapping process, in which reconstructed samples of the luma component of the current video unit in the reshaped domain are converted to the original domain; or

3) a scaling process, in which residual samples of a chroma component of the current video unit are scaled before being used to reconstruct the chroma component, and

wherein model information of the coding tool for the current video unit is included in the bitstream, and

wherein the video region is a picture, and one or more video units correspond to one or more slices, wherein in response to the picture comprising multiple slices including the current video unit, each of the multiple slices share the same model information of the coding tool as the current video unit.

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:

determining, for a current video unit of a video region, that a coding tool is used for the current video unit;

generating the bitstream by using the coding tool, in which the current video unit is constructed based on at least one of:

1) a forward mapping process for a luma component of the current video unit, in which prediction samples of the luma component are converted from an original domain to a reshaped domain;

2) an inverse mapping process, which is an inverse operation of the forward mapping process, in which reconstructed samples of the luma component of the current video unit in the reshaped domain are converted to the original domain; or

3) a scaling process, in which residual samples of a chroma component of the current video unit are scaled before being used to reconstruct the chroma component, and

wherein model information of the coding tool for the current video unit is included in the bitstream, and

wherein the video region is a picture, and one or more video units correspond to one or more slices, wherein in response to the picture comprising multiple slices including the current video unit, each of the multiple slices share the same model information of the coding tool as the current video unit.