CLAIMS

1. A method of processing video data, comprising:

determining, for a conversion between a current video block of a current picture of a video and a bitstream of the video, that a first prediction mode is applied on the current video block, wherein the first prediction mode is an intra block copy (IBC) mode;

maintaining, for the first prediction mode, a virtual IBC buffer of a defined size comprising reference samples derived from a reference region from the current picture;

deriving, for the current video block, a prediction block based on reference samples in the virtual IBC buffer; and

performing the conversion at least based on the prediction block,

wherein a subset of reference samples in the virtual IBC buffer are unavailable for deriving the prediction block,

wherein when a size of the current video block is smaller than a value of a variable denoted as Vsize, locations of the subset of reference samples are determined based on Vsize,

wherein when a size of the current video block is greater than Vsize, the locations of the subset of reference samples are determined further based on the size of the current video block,

wherein the locations of the subset of reference samples are determined further based on (x0, y0), wherein y0 % Vsize = 0, (x0, y0) specifies a location relative to top-left of the current picture, Vsize = min(ctbSize, 64), and ctbSize denotes a size of a coding tree block including the current video block, and

wherein the locations of the subset of reference samples are determined further based on a value of x0 % Vsize, and wherein % is a modulo operation.

2. The method of claim 1, wherein a width of the virtual IBC buffer is m×Vsize, and a height of the virtual IBC buffer is n×Vsize, where m and n are integers greater than 0.

3. The method of claim 2, wherein the values of m and n depend on the size of the coding tree block.

4. The method of claim 2, wherein m=4, and n=2.

5. The method of any one of claims 1-4, wherein the subset of reference samples locates at positions (x, y) in the virtual IBC buffer, wherein x lies in a first predetermined range in the virtual IBC buffer determined based on x0, and y lies in a second predetermined range in the virtual IBC buffer determined based on y0, and wherein x0 % Vsize = 0, and (x0, y0) denotes an upper-left corner of a virtual unit within the current picture.

6. The method of claim 5, wherein the first predetermined range and the second predetermined range are further determined based on Vsize.

7. The method of any one of claims 1-6, wherein all samples in the virtual IBC buffer is reset to a given value before coding a picture or a slice.

8. The method of any one of claims 1-7, wherein the conversion includes encoding the current video block into the bitstream.

9. The method of any one of claims 1-7, wherein the conversion includes decoding the current video block from the bitstream.

10. 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 current video block of a current picture of a video and a bitstream of the video, that a first prediction mode is applied on the current video block, wherein the first prediction mode is an intra block copy (IBC) mode;

maintain, for the first prediction mode, a virtual IBC buffer of a defined size comprising reference samples derived from a reference region from the current picture;

derive, for the current video block, a prediction block based on reference samples in the virtual IBC buffer; and

perform the conversion at least based on the prediction block,

wherein a subset of reference samples in the virtual IBC buffer are unavailable for deriving the prediction block,

wherein when a size of the current video block is smaller than a value of a variable denoted as Vsize, locations of the subset of reference samples are determined based on Vsize,

wherein when a size of the current video block is greater than Vsize, the locations of the subset of reference samples are determined further based on the size of the current video block,

wherein the locations of the subset of reference samples are determined further based on (x0, y0), wherein y0 % Vsize = 0, (x0, y0) specifies a location relative to top-left of the current picture, Vsize = min(ctbSize, 64), and ctbSize denotes a size of a coding tree block including the current video block, and

wherein the locations of the subset of reference samples are determined further based on a value of x0 % Vsize, and wherein % is a modulo operation.

11. The apparatus of claim 10, wherein a width of the virtual IBC buffer is m×Vsize, and a height of the virtual IBC buffer is n×Vsize, where m and n are integers greater than 0.

12. The apparatus of claim 10 or 11, wherein the subset of reference samples locates at positions (x, y) in the virtual IBC buffer, wherein x lies in a first predetermined range in the virtual IBC buffer determined based on x0, and y lies in a second predetermined range in the virtual IBC buffer determined based on y0, and wherein x0 % Vsize = 0, and (x0, y0) denotes an upper-left corner of a virtual unit within the current picture.

13. The apparatus of claim 12, wherein the first predetermined range and the second predetermined range are further determined based on Vsize.

14. The apparatus of any one of claims 10-13, wherein all samples in the virtual IBC buffer is reset to a given value before coding a picture or a slice.

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

determine, for a conversion between a current video block of a current picture of a video and a bitstream of the video, that a first prediction mode is applied on the current video block, wherein the first prediction mode is an intra block copy (IBC) mode;

maintain, for the first prediction mode, a virtual IBC buffer of a defined size comprising reference samples derived from a reference region from the current picture;

derive, for the current video block, a prediction block based on reference samples in the virtual IBC buffer; and

perform the conversion at least based on the prediction block;

wherein a subset of reference samples in the virtual IBC buffer are unavailable for deriving the prediction block,

wherein when a size of the current video block is smaller than a value of a variable denoted as Vsize, locations of the subset of reference samples are determined based on Vsize,

wherein when a size of the current video block is greater than Vsize, the locations of the subset of reference samples are determined further based on the size of the current video block,

wherein the locations of the subset of reference samples are determined further based on (x0, y0), wherein y0 % Vsize = 0, (x0, y0) specifies a location relative to top-left of the current picture, Vsize = min(ctbSize, 64), and ctbSize denotes a size of a coding tree block including the current video block, and

wherein the locations of the subset of reference samples are determined further based on a value of x0 % Vsize, and wherein % is a modulo operation.

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

determining, that a first prediction mode is applied on a current video block of a current picture of a video, wherein the first prediction mode is an intra block copy (IBC) mode;

maintaining, for the first prediction mode, a virtual IBC buffer of a defined size comprising reference samples derived from a reference region from the current picture;

deriving, for the current video block, a prediction block based on reference samples in the virtual IBC buffer; and

generating the bitstream from the current video block at least based on the prediction block,

wherein a subset of reference samples in the virtual IBC buffer are unavailable for deriving the prediction block,

wherein when a size of the current video block is smaller than a value of a variable denoted as Vsize, locations of the subset of reference samples are determined based on Vsize,

wherein when a size of the current video block is greater than Vsize, the locations of the subset of reference samples are determined further based on the size of the current video block,

wherein the locations of the subset of reference samples are determined further based on (x0, y0), wherein y0 % Vsize = 0, (x0, y0) specifies a location relative to top-left of the current

picture, Vsize = min(ctbSize, 64), and ctbSize denotes a size of a coding tree block including the current video block, and

wherein the locations of the subset of reference samples are determined further based on a value of x0 % Vsize, and wherein % is a modulo operation.