CLAIMS

1. A method of video processing, comprising:

determining, for a conversion between a current block of a current picture of a video and a bitstream of the video, whether to disable a coding tool for the current block; and

performing the conversion based on the determining,

wherein the coding tool is disabled when a dimension of a reference picture of one or more reference pictures of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture of one or more reference pictures of the current block is different from a dimension of a scaling window in the current picture.

2. The method of claim 1, wherein the coding tool comprises a first refinement coding tool, and

wherein the first refinement coding tool refines a signaled motion vector based on at least one motion vector with an offset to the signaled motion vector.

3. The method of claim 1 or 2, wherein the coding tool comprises a second refinement coding tool, and

wherein the second refinement coding tool obtains a motion vector refinement based on at least one gradient value corresponding to a sample in a reference block of the current block.

4. The method of any one of claims 1 to 3, wherein an affine mode is applied to the current block and initial prediction samples of a sub-block of the current block is generated,

wherein the coding tool comprises a third refinement coding tool,

wherein the third refinement coding tool is applied to generate final prediction samples for the sub-block by deriving a prediction refinement based on motion vector differences dMvH and/or dMvV, and

wherein dMvH and dMvV indicate motion vector differences along a horizontal direction and a vertical direction.

5. The method of claim 4, wherein the third refinement coding tool is disabled for a first reference picture list of the current block when a dimension of a reference picture in the first reference picture list is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in the first reference picture list is different from a dimension of a scaling window in the current picture, and

wherein the third refinement coding tool is disabled for a second reference picture list of the current block when a dimension of a reference picture in the second reference picture list is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in the second reference picture list is different from a dimension of a scaling window in the current picture.

6. The method of any one of claims 1 to 5, wherein whether the coding tool is disabled is determined based on values of one or more constraint active flags associated with the one or more reference pictures respectively.

7. The method of claim 6, wherein when a dimension of a reference picture in a first reference picture list of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in a first reference picture list of the current block is different from a dimension of a scaling window in the current picture, a value of a first constraint active flag is set to be unequal to 0, and

when a dimension of a reference picture in a second reference picture list of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in a second reference picture list of the current block is different from a dimension of a scaling window in the current picture, a value of a second constraint active flag is set to be unequal to 0.

8. The method of claim 6 or 7, wherein the one or more constraint active flags are derived during a reference picture list construction process.

9. The method of any one of claims 1 to 8, wherein a dimension of a scaling window is determined based on at least one of 1) scaling_win_left_offset, 2) scaling_win_right_offset, 3) scaling_win_bottom_offset, or 4) scaling_win_top_offset.

10. The method of any one of claims 1 to 9, wherein an adaptive motion vector resolution is enabled for the current block when a dimension of a reference picture of one or more reference pictures of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture of one or more reference pictures of the current block is different from a dimension of a scaling window in the current picture.

11. The method of any one of claims 1 to 10, wherein the conversion includes encoding the current picture into the bitstream.

12. The method of any one of claims 1 to 10, wherein the conversion includes decoding the current picture from the bitstream.

13. 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 block of a current picture of a video and a bitstream of the video, whether to disable a coding tool for the current block; and

perform the conversion based on the determining,

wherein the coding tool is disabled when a dimension of a reference picture of one or more reference pictures of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture of one or more reference pictures of the current block is different from a dimension of a scaling window in the current picture.

14. The apparatus of claim 13, wherein the coding tool comprises a first refinement coding tool, and

wherein the first refinement coding tool refines a signaled motion vector based on at least one motion vector with an offset to the signaled motion vector.

15. The apparatus of claim 13 or 14, wherein the coding tool comprises a second refinement coding tool, and

wherein the second refinement coding tool obtains a motion vector refinement based on at least one gradient value corresponding to a sample in a reference block of the current block.

16. The apparatus of any one of claims 13 to 15, wherein an affine mode is applied to the current block and initial prediction samples of a sub-block of the current block is generated,

wherein the coding tool comprises a third refinement coding tool,

wherein the third refinement coding tool is applied to generate final prediction samples for the sub-block by deriving a prediction refinement based on motion vector differences dMvH and/or dMvV, and

wherein dMvH and dMvV indicate motion vector differences along a horizontal direction and a vertical direction.

17. The apparatus of claim 16, wherein the third refinement coding tool is disabled for a first reference picture list of the current block when a dimension of a reference picture in the first reference picture list is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in the first reference picture list is different from a dimension of a scaling window in the current picture, and

wherein the third refinement coding tool is disabled for a second reference picture list of the current block when a dimension of a reference picture in the second reference picture list is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture in the second reference picture list is different from a dimension of a scaling window in the current picture.

18. The apparatus of any one of claims 13 to 17, wherein whether the coding tool is disabled is determined based on values of one or more constraint active flags associated with the one or more reference pictures respectively.

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

determine, for a conversion between a current block of a current picture of a video and a bitstream of the video, whether to disable a coding tool for the current block; and

perform the conversion based on the determining,

wherein the coding tool is disabled when a dimension of a reference picture of one or more reference pictures of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture of one or more reference pictures of the current block is different from a dimension of a scaling window in the current picture.

20. 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 block of a current picture of a video, whether to disable a coding tool for the current block; and

generating the bitstream based on the determining,

wherein the coding tool is disabled when a dimension of a reference picture of one or more reference pictures of the current block is different from a dimension of the current picture, or a dimension of a scaling window in a reference picture of one or more reference pictures of the current block is different from a dimension of a scaling window in the current picture.