

CLAIMS

What is claimed is:

1. A method of video decoding, executable by a processor, the method comprising:
decoding coded syntax elements corresponding to a wrap-around padding process based on shifting a reference block by a reference wrap-around padding width value that is determined based on locations of luma samples in the reference block; and
reconstructing at least one coded current picture using the wrap-around padding process, wherein the wrap-around padding process is applied at boundaries of subpictures.
2. The method of claim 1, wherein the decoded syntax elements indicate an offset value for wrap-around processing; or left and right padding width information.
3. The method of claim 2, wherein a flag indicates whether syntax elements corresponding to the wrap-around padding process are present in a parameter set.
4. The method of claim 3, wherein a pixel position for a motion compensated prediction in a reference picture is determined by interpreting the syntax elements corresponding to the wrap-around padding process with a clipping process.
5. The method of claim 4, wherein a fractional pixel is interpolated for the motion compensated prediction based on the determined pixel position.
6. The method of claim 5, wherein an overwrapped region is blended to remove a seam artifact as a post processing.
7. The method of claim 1, wherein the wrap-around padding process is applied at a tile or a tile group boundary.
8. The method of claim 1, wherein the at least one coded current picture is a reference for motion compensation.
9. The method of claim 8, wherein the wrap-around padding process is applied at a boundary of the at least one coded current picture.

10. The method of claim 1, wherein the wrap-around padding process is applied at a horizontal, a vertical boundary or at both the vertical and horizontal boundaries.
11. The method of claim 10, wherein a flag in a high level syntax structure indicates whether the wrap-around padding process is applied at the horizontal, the vertical boundary or both the vertical and horizontal boundaries.
12. A method of video encoding, executable by a processor, the method comprising:
 - determining syntax elements corresponding to a wrap-around padding process based on shifting a reference block by a reference wrap-around padding width value, wherein the reference wrap-around padding width value is determined based on locations of luma samples in the reference block; and
 - encoding at least one picture using the wrap-around padding process, wherein the wrap-around padding process is applied at boundaries of subpictures.
13. The method of claim 12, wherein the syntax elements indicate one of: an offset value for wrap-around processing, or left and right padding width information.
14. The method of claim 13, wherein a flag indicates whether the syntax elements corresponding to the wrap-around padding process are present in a parameter set.
15. The method of claim 14, wherein a pixel position for a motion compensated prediction in a reference picture is determined by interpreting the syntax elements corresponding to the wrap-around padding process with a clipping process.
16. The method of claim 15, wherein a fractional pixel is interpolated for the motion compensated prediction based on the determined pixel position.
17. The method of claim 16, wherein an overwrapped region is blended to remove a seam artifact as a post processing.
18. The method of claim 12, wherein the wrap-around padding process is applied at a tile or

a tile group boundary.

19. The method of claim 12, wherein the at least one picture comprises a reference for motion compensation.

20. The method of claim 19, wherein the wrap-around padding process is applied at a boundary of the at least one picture.

21. The method of claim 12, wherein the wrap-around padding process is applied at a horizontal, a vertical boundary, or at both the vertical and horizontal boundaries.

22. The method of claim 21, wherein a flag in a high level syntax structure indicates whether the wrap-around padding process is applied at the horizontal, the vertical boundary or both the vertical and horizontal boundaries.

23. A method of processing a video bitstream, the method comprising:
storing the video bitstream in a computer readable storage medium, wherein the video bitstream is generated by the method according to any one of claims 12 to 22.

24. A computer system for video coding, the computer system comprising:
one or more computer-readable non-transitory storage media configured to store computer program code; and
one or more computer processors configured to access said computer program code and operate as instructed by said computer program code to perform the method according to any one of claims 1 to 11.

25. A computer system for video coding, the computer system comprising:
one or more computer-readable non-transitory storage media configured to store computer program code; and
one or more computer processors configured to access said computer program code and operate as instructed by said computer program code to perform the method in any one of claims 12 to 22.

26. A non-transitory computer readable medium having stored thereon a computer program for video coding, the computer program configured to cause one or more computer processors to perform the steps in the method according to any one of claims 1 to 23.