What is claimed is:

1. An image decoding method performed by a decoding apparatus, comprising:

obtaining image information including residual information through a bitstream;

generating reconstructed samples of a current picture, based on the residual information; and

generating modified reconstructed samples, based on an in-loop filtering process for the reconstructed samples,

wherein the image information includes a sequence parameter set (SPS),

wherein the SPS includes an SPS virtual boundaries enabled flag, and

wherein the in-loop filtering process is performed across the virtual boundaries, based on the SPS virtual boundaries enabled flag.

2. The image decoding method of claim 1,

wherein the SPS further includes an SPS virtual boundaries present flag, and

wherein whether information on positions of the virtual boundaries and information on the number of the virtual boundaries are included in the SPS is determined based on the SPS virtual boundaries present flag.

3. The image decoding method of claim 2, wherein the SPS includes information on the number of vertical virtual boundaries, based on that a value of the SPS virtual boundaries present flag is 1.

4. The image decoding method of claim 3,

wherein the SPS includes information on positions of the vertical virtual boundaries, and

wherein the number of pieces of the information on positions of the vertical virtual boundaries is determined based on the information on the number of vertical virtual boundaries.

5. The image decoding method of claim 2, wherein the SPS includes information on the number of horizontal virtual boundaries, based on that a value of the SPS virtual boundaries present flag is 1.

6. The image decoding method of claim 5,

wherein the SPS includes information on positions of the horizontal virtual boundaries, and

wherein the number of pieces of the information on positions of the horizontal virtual boundaries is determined based on the information on the number of horizontal virtual boundaries.

7. The image decoding method of claim 2,

wherein the image information includes picture header information, and

wherein the picture header information includes a picture header virtual boundaries present flag, based on that a value of the SPS virtual boundaries enabled flag is 1 and a value of the SPS virtual boundaries present flag is 0.

8. The image decoding method of claim 7, wherein the picture header information includes information on the number of vertical virtual boundaries, based on that a value of the picture header virtual boundaries present flag is 1.

9. The image decoding method of claim 8,

wherein the picture header information includes information on positions of the vertical virtual boundaries, and

wherein the number of pieces of the information on positions of the vertical virtual boundaries is determined based on the information on the number of vertical virtual boundaries.

10. The image decoding method of claim 7, wherein the picture header information includes information on the number of horizontal virtual boundaries, based on that a value of the picture header virtual boundaries present flag is 1.

11. The image decoding method of claim 10,

wherein the picture header information includes information on positions of horizontal virtual boundaries, and

wherein the number of pieces of information on positions of the horizontal virtual boundaries is determined based on the information on the number of horizontal virtual boundaries.

12. The image decoding method of claim 1, wherein a sum of the number of vertical virtual boundaries and the number of horizontal virtual boundaries is greater than 0, based on that the SPS includes information on positions of the vertical virtual boundaries and information on positions of the horizontal virtual boundaries.

13. The image decoding method of claim 1,

wherein information related to the in-loop filtering further includes an SPS virtual boundaries present flag, a picture header virtual boundaries present flag, and a gradual decoding refresh (GDR) enabled flag, and

wherein a value of the SPS virtual boundaries enabled flag is 1, a value of the SPS virtual boundaries present flag is 0, and a value of the picture header virtual boundaries present flag is 1, based on that a value of the GDR enabled flag is 1.

14. An image encoding method performed by an encoding apparatus, comprising:

generating residual samples for a current block;

generating residual information, based on the residual samples for the current block;

generating in-loop filtering-related information for reconstructed samples of a current picture; and

encoding image information including the residual information and the in-loop filtering-related information,

wherein the image information includes a sequence parameter set (SPS), and

wherein the in-loop filtering-related information includes an SPS virtual boundaries enabled flag related to whether an in-loop filtering process is performed across virtual boundaries.

15. The image encoding method of claim 14,

wherein the SPS includes the virtual boundaries enabled flag and an SPS virtual

boundaries present flag, and

wherein whether information on positions of the virtual boundaries and information on the number of the virtual boundaries are included in the SPS is determined based on the SPS virtual boundaries present flag.

16. The image encoding method of claim 15, wherein the SPS includes information on the number of vertical virtual boundaries, based on that a value of the SPS virtual boundaries present flag is 1.

17. The image encoding method of claim 16,

wherein the SPS includes information on positions of the vertical virtual boundaries, and

wherein the number of pieces of the information on positions of the vertical virtual boundaries is determined based on the information on the number of vertical virtual boundaries.

18. The image encoding method of claim 15, wherein the SPS includes information on the number of horizontal virtual boundaries, based on that a value of the SPS virtual boundaries present flag is 1.

19. A non-transitory computer readable storage medium storing a bitstream generated by an image encoding method, the method comprising:

generating residual samples for a current block;

generating residual information, based on the residual samples for the current block;

generating in-loop filtering-related information for reconstructed samples of a current picture; and

encoding image information including the residual information and the in-loop filtering-related information,

wherein the image information includes a sequence parameter set (SPS), and

wherein the in-loop filtering-related information includes an SPS virtual boundaries enabled flag related to whether an in-loop filtering process is performed across virtual boundaries.

20.A transmission method of data for an image, the method comprising:

obtaining a bitstream for the image, wherein the bitstream is generated based on generating residual samples for a current block, generating residual information, based on the residual samples for the current block, generating in-loop filtering-related information for reconstructed samples of a current picture, and encoding image information including the residual information and the in-loop filtering-related information; and

transmitting the data comprising the bitstream,

wherein the image information includes a sequence parameter set (SPS), and

wherein the in-loop filtering-related information includes an SPS virtual boundaries enabled flag related to whether an in-loop filtering process is performed across virtual boundaries.