# C L A I M S

1. A method for encoding an image, comprising:
obtaining the image;
encoding the image into a bitstream based on a first coding parameter, wherein the first coding parameter is indicative of a first displacement between a first target rate control parameter and a first reference rate control parameter; and
encoding the first coding parameter into the bitstream.

2. The method of claim 1, wherein the first coding parameter is represented by a fixed-point value.

3. The method of claim 1 or 2, wherein the first coding parameter is signaled with N bits, wherein N is an integer less than or equal to 16.

4. The method of claim 3, wherein N is equal to 12.

5. The method of any one of claims 1-4, wherein the first displacement is one of a ratio and a difference.

6. The method of any one of claims 1-5, wherein the first coding parameter, the first target rate control parameter and the first reference rate control parameter are for coding luma data of the image.

7. The method of any one of claims 1-5, wherein the first coding parameter, the first target rate control parameter and the first reference rate control parameter are for coding a primary component of the image.

8. The method of claim 7, wherein the primary component is a luma component.

9. The method of any one of claims 1-8, wherein the first coding parameter is signaled using one or more of the following codes:
- binary code;
- unary code;
- truncated unary code; and
- exp-Golomb code.

10. The method of any one of claims 1-9, wherein at least one of the first coding parameter, the first target rate control parameter and the first reference rate control parameter is in logarithmic scale.

11. The method of any one of claims 1-10, wherein encoding the first coding parameter into the bitstream comprises:
obtaining an adjusted value of the first coding parameter; and
encoding the adjusted value of the first coding parameter into the bitstream.

12. The method of claim 11, wherein the adjusted value of the first coding parameter is obtained by adding $2^{N-1}$ to a value of the first coding parameter, wherein N is the number of bits used to signal the first coding parameter.

13. The method of any one of claims 1 to 12, wherein the first target rate control parameter is a rate control parameter selected by an encoder and the first reference rate control parameter is a rate control parameter used in model training.

14. A method for decoding an image, comprising:
receiving a bitstream comprising coded data of the image;

parsing the bitstream to obtain a first coding parameter, wherein the first coding parameter is indicative of a first displacement between a first target rate control parameter and a first reference rate control parameter; and
reconstructing the image based on the first coding parameter.

15. The method of claim 14, wherein the first coding parameter is represented by a fixed-point value.

16. The method of claim 14 or 15, wherein the first coding parameter is signaled with N bits, wherein N is an integer less than or equal to 16.

17. The method of claim 16, wherein N is equal to 12.

18. The method of any one of claims 14-17, wherein the first displacement is one of a ratio and a difference.

19. The method of any one of claims 14-18, wherein the first coding parameter, the first target rate control parameter and the first reference rate control parameter are for coding luma data of the image.

20. The method of any one of claims 14-19, wherein the first coding parameter is signaled using one or more of the following codes:

- binary code;
- unary code;
- truncated unary code; and
- exp-Golomb code.

21. The method of claim any one of claims 14-20, wherein at least one of the first coding parameter, the first target rate control parameter and the first reference rate control parameter is in logarithmic scale.

22. The method of any one of claims 14-21, wherein the reconstructing the image based on the first coding parameter comprises:

obtaining an intermediate parameter by subtracting $2^{N-1}$ from the first coding parameter, wherein N is the number of bits used to signal the first coding parameter; and

reconstructing the image based on the intermediate parameter.

23. An encoding device for encoding an image, comprising:
an obtaining unit configured to obtain the image;
an encoding unit configured to encode the image into a bitstream based on a first coding parameter, wherein the first coding parameter is indicative of a first displacement between a first target rate control parameter and a first reference rate control parameter; and
wherein the encoding unit is further configured to encode the first coding parameter into the bitstream.

24. The encoding device of claim 23, wherein the encoding device is further configured to perform the method of any one of the claims 2-13.

25. A decoding device for decoding an image, comprising:
a receiving unit configured to receive a bitstream comprising coded data of the image;
a parsing unit configured to parse the bitstream to obtain a first coding parameter, wherein the first coding parameter is indicative of a first displacement between a first target rate control parameter and a first reference rate control parameter; and
a reconstructing unit configured to reconstruct the image based on the first coding parameter.

26. The decoding device of claim 25, wherein the device is further configured to perform the method of any one of claims 15-22.

27. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program that can be executed by one or more processors, and when the computer program is executed by the one or more processors, the one or more processors performs the method according to any one of claims 1-22.

28. A coder comprising processing circuitry for carrying out the method according to any one of claims 1-22.

29. A storage medium, wherein the storage medium stores a bitstream obtained by using the method according to any one of claims 1-13.