CLAIMS

1. A moving picture decoding method for decoding a coded image included in a bit stream, the method comprising:

performing context adaptive binary arithmetic decoding in which a variable probability value is used, on first information among multiple types of SAO information that are included in the bit stream and used for sample adaptive offset (SAO) which is a process of assigning an offset value to a pixel value of a pixel included in an image generated by decoding the coded image; and

~~continuously~~ performing bypass arithmetic decoding in which a fixed probability value is used, on second information and third information that are among the multiple types of the SAO information and located after the first information in the bit stream~~, wherein a variable probability is not used in the bypass arithmetic decoding~~.

2. The moving picture decoding method according to Claim 1,

wherein one of the second information and the third information is sao_band_position indicating a range of pixel values to which the SAO is applied.

3. The moving picture decoding method according to Claim 2,

wherein the other of the second information and the third information is sao_offset_sign indicating whether an offset value is positive or negative, the offset value being assigned to a pixel value to which the SAO is applied.

4. The moving picture decoding method according to Claim 3,

wherein in the ~~continuously~~ performing of the bypass arithmetic decoding in which a fixed probability value is used, the sao_band_position is decoded after the sao_offset_sign is decoded.

5. The moving picture decoding method according to any one of Claim 1 to 4,

wherein a pixel to which the SAO is applied includes components of multiple types including luminance and chrominance, and

the first information, the second information, and the third information are decoded for each of the components.

6. The moving picture decoding method according to any one of Claim 1 to 5,

wherein in the ~~continuously~~ performing of the bypass arithmetic decoding in which a fixed probability value is used, the bypass arithmetic decoding is performed on at least one other information among the multiple types of the SAO information immediately before or immediately after the decoding of the second information and the third information.

7. The moving picture decoding method according to any one of Claim 1 to 6,

wherein the first information is part of sao_type_idx indicating that the SAO is not to be performed or a type of the SAO.

8. A moving picture decoding apparatus which comprises control circuitry and storage accessible from the control circuitry, and decodes a coded image included in a bit stream,

wherein the control circuitry executes the moving picture decoding method according to any one of Claim 1 to 7.

9. A moving picture coding method for coding an input image to generate a bit stream, the method comprising:

performing context adaptive binary arithmetic coding in which a variable probability value is used, on first information among multiple types of sample adaptive offset (SAO) information used for SAO that is a process of assigning an offset value to a pixel value of a pixel included in an image generated by coding the input image;

performing bypass arithmetic coding in which a fixed

probability value is used, on second information and third information among the multiple types of the SAO information,

wherein the coded second and third information are placed after the coded first information in the bit stream.

10. The moving picture coding method according to Claim 9,

wherein one of the second information and the third information is sao band position indicating a range of pixel values to which the SAO is applied.

11. The moving picture coding method according to Claim 10,

wherein the other of the second information and the third information is sao offset sign indicating whether an offset value is positive or negative, the offset value being assigned to a pixel value to which the SAO is applied.

12. The moving picture coding method according to Claim 11,

wherein in the performing of the bypass arithmetic decoding in which a fixed probability value is used, the sao band position is coded after the sao offset sign is coded.

13. The moving picture coding method according to any one of Claim 9 to Claim 12,

wherein a pixel to which the SAO is applied includes components of multiple types including luminance and chrominance, and

the first information, the second information, and the third information are coded for each of the components.

14. The moving picture coding method according to any one of Claim 9 to Claim 13,

wherein in the performing of the bypass arithmetic decoding in which a fixed probability value is used, the bypass arithmetic coding is further performed on at least one other information among the multiple types of the SAO information immediately before or

immediately after the coding of the second information and the third information.

15. The moving picture coding method according to any one of Claim 9 to Claim 14,

wherein the first information is part of sao type idx indicating that the SAO is not to be performed or a type of the SAO.

16. A moving picture coding apparatus, which comprises control circuitry and storage accessible from the control circuitry, and codes an image to generate a bit stream,

wherein the control circuitry executes the moving picture coding method according to any one of Claims 9 to 15.

17. A moving picture decoding and coding apparatus comprising:

the moving picture decoding apparatus according to Claim 8; and

the moving picture coding apparatus according to Claim 16.