[Citation List]

[Non Patent Literature]

[0004]

[NPL 1] Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11 9th Meeting: Geneva, CH, 27 April – 7 May 2012, JCTVC-I1003_d1, "High efficiency video coding (HEVC) text specification draft 7"

[NPL 2] ITU-T Recommendation H.264 "Advanced video coding for generic audiovisual services", March, 2010

[NPL 3] Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11 9th Meeting: Geneva, CH, 27 April – 7 May 2012, JCTVC-I0602, "BoG report on integrated text of SAO adoptions on top of JCTVC-I0030"

[Summary of Invention]

[Technical Problem]

[0005]

However, a moving picture coding method and a moving picture decoding method using the SAO of NPL 3 cannot make processing efficient.

[0006]

In view of this, one non-limiting and exemplary embodiment provides a moving picture coding method and a moving picture decoding method that can make processing efficient.

[Solution to Problem]

[0007]

~~A moving picture coding method according to an aspect of the present invention is a moving picture coding method for coding an input image to generate a bit stream, the method including: 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;~~

~~and continuously 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.~~

According to a first aspect, there is provided 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 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.

According to a second aspect, there is provided 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 above moving picture decoding method.

According to a third aspect, there is provided 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.

According to a fourth aspect, there is provided 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 above moving picture coding method.

According to a fifth aspect, there is provided a moving picture decoding and coding apparatus comprising: the above moving picture decoding apparatus; and the above moving picture coding apparatus.

[0008]

These general and specific aspects may be implemented using a system, a method, an integrated circuit, a computer program, or a computer-readable recording medium such as a CD-ROM, or any combination of systems, methods, integrated circuits, computer programs, or computer-readable recording media.

[Advantageous Effects of Invention]

[0009]

A moving picture coding method and a moving picture decoding method in embodiments of the present invention can make processing efficient.

[Brief Description of Drawings]

[0010]

[FIG. 1A] FIG. 1A is a table showing information used for offset processing referred to as SAO.

[FIG. 1B] FIG. 1B is a table showing other information used for offset processing referred to as SAO.

[FIG. 1C] FIG. 1C is a table showing other information used for offset processing referred to as SAO.

[FIG. 1D] FIG. 1D is a table showing other information used for offset processing referred to as SAO.

[FIG. 2] FIG. 2 is a block diagram showing a functional configuration of a SAO information decoding unit.

[FIG. 3] FIG. 3 is a flow chart showing an operation flow of the SAO information decoding unit.

[FIG. 4] FIG. 4 is a flow chart showing context adaptive binary arithmetic decoding.

[FIG. 5] FIG. 5 is a flow chart showing bypass arithmetic decoding.