

addition, as stated above, since the number of pieces of bit data input into the CABAC decoding unit 161 is unfixed, the slowest processing speed can not be estimated.

[0039] Therefore, in a case in which the video-information decoding apparatus 120 should have a guarantee of real-time processing and a fixed processing time, it can not have the guarantee if a large number of pieces of bit data are input into the CABAC decoding apparatus 161 or the number of pieces of bit data is unfixed. Especially, as compared with the video-information encoding apparatus 100, in the video-information decoding apparatus 120, the real-time decoding and display of video information are highly demanded. Therefore, the fact that real-time processing can not be guaranteed is a problem.

[0040] Accordingly, ~~embodiments~~one object of the present invention is to address the above-problem. In embodiments of the present invention, considering the above problems, the amount of data to be input to/output from a CABAC encoding unit and decoding unit is limited in a unit of encoding such as 1 picture, slice, macroblock or block, and a mechanism for the limitation is applied to a video-information encoding apparatus and decoding apparatus, and its bitstreams.

[0041] Further, in embodiments of the present invention, considering the above problems, uncompressed video data is encoded and a mechanism for the encoding is applied to a video-information encoding apparatus and decoding apparatus, and its bitstreams.

[0042] Still further, in embodiments of the present invention, considering the above problems, the same method is applied to CAVLC as well as CABAC.

[0043] By limiting the amount of data to be input to/output from the aforementioned CABAC encoding unit and decoding unit and encoding uncompressed data, a video-information encoding apparatus and decoding apparatus can have a guarantee of a fixed processing time, and an apparatus with a guarantee of the processing time can be realized. In addition, similar effects can be obtained in CAVLC as well as CABAC.

[0043a] According to a first aspect, there is provided an encoding apparatus for coding a unit of data, the apparatus comprising:

- an encoding processing means capable of processing said unit of data and outputting said processed unit of data as non-compressed information;

- a context processing means capable of storing a previous context value existing before processing of said unit of data; and

- wherein the encoding processing means is arranged to finish or initialize the encoding processing with said previous context value if said processed unit of data is output as non-compressed information.

[0043b] According to a second aspect, there is provided an encoding method for coding a unit of data, the method comprising:

- processing said unit of data;

- storing a previous context value existing before said processing of said unit of data; and

- finishing or initializing the encoding processing with said previous context value if said processed unit of data is output as non-compressed information.

[0043c] According to a third aspect, there is provided a decoding apparatus for decoding a bit stream, the apparatus comprising:

- an obtaining means capable of obtaining information from said bit stream indicating whether or not a unit of data from said bit stream is non-compressed information;

- a decoding means capable of decoding processing the unit of data from said bit stream;

- a context processing means capable of storing a previous context value existing before decoding the unit of data or storing a predetermined context value or storing a calculated context value; and

- wherein the decoding means is arranged to suspend or initialize the decoding processing with the previous context value if said unit of data is non-compressed information based on the information obtained by said obtaining means.

[0043d] According to a fourth aspect, there is provided a decoding method for decoding a bit stream, the method comprising:

- obtaining information from said bit stream indicating whether or not a unit of data from said bit stream is non-compressed information;

- decoding processing the unit of data from said bit stream;

- storing a previous context value existing before decoding the unit of data or storing a predetermined context value or storing a calculated context value; and

- suspending or initializing the decoding processing with the previous context value if said unit of data is non-compressed information based on the information obtained.

BRIEF DESCRIPTION OF DRAWINGS

[0044] A more complete appreciation of the present invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

[0045] Fig. 1 shows an example of a construction of a video-information encoding apparatus of the present invention;