

[Technical Problem]

[0005]

However, a conventional image decoding method and a conventional image coding method have a problem of complexity in the configuration for performing processing according to the methods.

[0006]

~~In view of this, Embodiments of the present invention provides an image decoding method, an image coding method and others which are capable of decoding and coding images with simple configuration.~~

[Solution to Problem]

[0007]

~~An~~According to a first aspect of the present invention, there is provided an image decoding method according to an aspect of the present invention is an image decoding method of decoding, on a per-block basis, a coded image included in a bitstream. The image decoding method includes: performing arithmetic decoding on a current block to be decoded; determining whether or not the current block is at an end of a slice; determining whether or not the current block is at an end of a sub-stream when it is determined that the current block is not at the end of the slice, the sub-stream being a structural unit of the image that is different from the slice; and performing arithmetic decoding on a sub-last bit and performing arithmetic decoding termination as first termination, when it is determined that the current block is at the end of the sub-stream.

[0007a]

According to a second aspect of the present invention, there is provided an image coding method of coding an image on a per-block basis to generate a bitstream, the image coding method comprising: performing arithmetic coding on a current block to be coded; determining whether or not the current block is at an end of a slice; determining whether or not the current block is at an end of a sub-stream when it is determined that the current block is not at the end of the slice, the sub-stream being a structural unit of the image that is different from the slice; and performing arithmetic coding on a sub-last bit and performing arithmetic coding termination as first termination, when it is determined that the current block is at the end of the sub-stream.

[0007b]

According to a third aspect of the present invention, there is provided an image decoding apparatus which decodes, on a per-block basis, a coded image included in a bitstream, the image decoding apparatus comprising:

processing circuitry; and storage accessible from the processing circuitry, wherein, using the storage, the processing circuitry: performs arithmetic decoding on a current block to be decoded; determines whether or not the current block is at an end of a slice; determines whether or not the current block is at an end of a sub-stream when it is determined that the current block is not at the end of the slice, the sub-stream being a structural unit of the image that is different from the slice; and performs arithmetic decoding on a sub-last bit and performs arithmetic decoding termination as first termination, when it is determined that the current block is at the end of the sub-stream.

[0007c]

According to a fourth aspect of the present invention, there is provided an image coding apparatus which codes an image on a per-block basis to generate a bitstream, the image coding apparatus comprising: processing circuitry; and storage accessible from the processing circuitry, wherein, using the storage, the processing circuitry: performs arithmetic coding on a current block to be coded; determines whether or not the current block is at an end of a slice; determines whether or not the current block is at an end of a sub-stream when it is determined that the current block is not at the end of the slice, the sub-stream being a structural unit of the image that is different from the slice; and performs arithmetic coding on a sub-last bit and performs arithmetic coding termination as first termination, when it is determined that the current block is at the end of the sub-stream.

[0007d]

According to a fifth aspect of the present invention, there is provided an image coding and decoding apparatus comprising the image decoding apparatus according to the third aspect and the image coding apparatus according to the fourth aspect.

[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 compact disc read only memory (CD-ROM), or any combination of systems, methods, integrated circuits, computer programs, or computer-readable recording media.

[Advantageous Effects of Invention]

[0009]

An image decoding method and an image coding method according to embodiments of the present invention simplify configuration for