video coding (HEVC) text specification draft 8", July 2012, page 73, "dependent_slice_flag", Internet <URL: http://phenix. IT-sudparis. eu/jct/>

[Summary of Invention]

[Technical Problem]

[0006] However, there is a problem that an image coding method, an image decoding method, and the like do not have sufficient processing efficiency.

[0007] Therefore, embodiments of the present invention provides an image coding method and an image decoding method that are capable of increase processing efficiency.

[Solution to Problem]

[0008] AnAccording to a first aspect of the present invention, there is provided an image coding method according to an aspect of the present invention is an image coding method of performing coding processing by partitioning a picture into a plurality of slices, the image coding method comprising transmitting a bitstream which includes: a dependent slice enabling flag indicating whether or not the picture includes a dependent slice on which the coding processing is performed depending on a result of the coding processing on a slice different from a current slice; a slice address indicating a starting position of the current slice; and a dependency indication indicating whether or not the current slice is the dependent slice, wherein the dependent slice enabling flag is disposed in a parameter set common to the slices, the slice address is disposed in a slice header of the current slice, and the dependency indication is disposed in the slice header, and is disposed before the slice address and after a syntax element identifying the parameter set.

[0009] AnAccording to a second 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 performing decoding processing by partitioning a picture into a plurality of slices, the image decoding method comprising extracting, from a coded bitstream, a dependent slice enabling flag indicating whether or not the picture includes a dependent slice on which the decoding processing is performed depending on a result of the decoding processing on a slice different from a current slice, a slice address

indicating a starting position of the current slice, and a dependency indication indicating whether or not the current slice is the dependent slice, wherein the dependent slice enabling flag is disposed in a parameter set common to the slices, the slice address is disposed in a slice header of the current slice, and the dependency indication is disposed in the slice header, and is disposed before the slice address and after a syntax element identifying the parameter set.

[0009a] According to the third aspect of the present invention, there is provided an image coding apparatus which performs coding processing by partitioning a picture into a plurality of slices, the image coding apparatus comprising a coder which transmits a bitstream which includes: a dependent slice enabling flag indicating whether or not the picture includes a dependent slice on which the coding processing is performed depending on a result of the coding processing on a slice different from a current slice; a slice address indicating a starting position of the current slice; and a dependency indication indicating whether or not the current slice is the dependent slice, wherein the dependent slice enabling flag is disposed in a parameter set common to the slices, the slice address is disposed in a slice header of the current slice, and the dependency indication is disposed in the slice header, and is disposed before the slice address and after a syntax element identifying the parameter set.

[0009b] According to the fourth aspect of the present invention, there is provided an image decoding apparatus which performs decoding processing by partitioning a picture into a plurality of slices, the image decoding apparatus comprising a decoder which extracts, from a coded bitstream, a dependent slice enabling flag indicating whether or not the picture includes a dependent slice on which the decoding processing is performed depending on a result of the decoding processing on a slice different from a current slice, a slice address indicating a starting position of the current slice, and a dependency indication indicating whether or not the current slice is the dependent slice, wherein the dependent slice enabling flag is disposed in a parameter set common to the slices, the slice address is disposed in a slice header of the current slice, and the dependency indication is disposed in the slice header, and is disposed before the slice address and after a syntax

element identifying the parameter set.

[0009c] According to a fifth aspect of the present invention, there is provided an image coding and decoding apparatus comprising the image coding apparatus according to the third aspect and the image decoding apparatus according to the fourth aspect.

[0010] General and specific aspects disclosed above 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]

[0011] An image coding method and an image decoding method according to embodiments of the present invention are capable of increasing coding efficiency.

[Brief Description of Drawings]

[0012] These and other objects, advantages and features of the disclosure will become apparent from the following description thereof taken in conjunction with the accompanying drawings that illustrate a specific embodiment of the present invention.

[FIG. 1]

FIG. 1 is a block diagram showing an example of an encoder conforming to HEVC.

[FIG. 2]

FIG. 2 is a block diagram showing an example of a decoder conforming to HEVC.

[FIG. 3]

FIG. 3 is a diagram showing an example of a configuration of an image in the wavefront parallel processing (WPP).

[FIG. 4]

FIG. 4 is a diagram showing an example of a relationship between a normal slice and a dependent slice in the wavefront parallel processing.