

Non-Patent Documents

Non-Patent Document 1: Benjamin Bross, Woo-Jin Han, Jens-Rainer Ohm, Gary J. Sullivan, Thomas Wiegand, "High efficiency video coding (HEVC) text specification draft 6", JCTVC-H1003 ver21, Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG117th Meeting: Geneva, CH, 21-30 November, 2011

Non-Patent Document 2: Jizheng Xu, "AHG10: Selective inter-layer prediction signalling for HEVC scalable extension", JCTVC-J0239, Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 1110th Meeting: Stockholm, SE, 11-20 July 2012

SUMMARY OF THE INVENTION

15 PROBLEMS TO BE SOLVED BY THE INVENTION

[0015]

However, in the conventional method, the information for controlling the on/off (on/off) of the prediction process between the layers has been generated and transmitted for every picture. Therefore, there has been a risk that the code amount would increase due to the transmission of the information to thereby deteriorate the encoding efficiency.

[0016]

25 ~~The Embodiments of the present invention has been made in view of the above and is to suppress the deterioration in encoding efficiency.~~

SOLUTIONS TO PROBLEMS

[0016a]

30 According to a first aspect of the present invention, there is provided an image processing device comprising: an

encoding unit that encodes the image by performing inter-layer prediction, which is prediction between a plurality of layers of the image, on only a sublayer specified by inter-layer prediction control information that controls whether to perform the inter-layer prediction using information related to a sublayer.

[0016b]

According to a second aspect of the present invention, there is provided an image processing method comprising: encoding the image by performing inter-layer prediction, which is prediction between a plurality of layers of the image, on only a sublayer specified by inter-layer prediction control information that controls whether to perform the inter-layer prediction using information related to a sublayer.

[0017]

~~An aspect of the present technique~~ Disclosed herein is an image processing device including: a reception unit that receives encoded data in which an image with a plurality of main layers is encoded,

parameter set (vps_extension).

[0025]

The inter-layer syntax prediction control information may be transmitted as a nal unit (nal_unit), a picture parameter set (PPS (Picture Parameter Set)), or a slice header (SliceHeader).

[0026]

~~Further, an aspect of the present technique Disclosed~~
herein is an image processing method including: receiving
10 encoded data in which an image with a plurality of main layers is encoded, and inter-layer prediction control information controlling whether to perform inter-layer prediction, which is prediction between the plurality of main layers, with the use of a sublayer; and decoding each main layer of the received
15 encoded data by performing the inter-layer prediction on only the sublayer specified by the received inter-layer prediction control information.

[0027]

~~Another aspect of the present technique Disclosed herein~~
20 is an image processing device including: an encoding unit that encodes each main layer of the image data by performing inter-layer prediction, which is prediction between a plurality of main layers, on only a sublayer specified by inter-layer prediction control information that controls
25 whether to perform the inter-layer prediction with the use of a sublayer; and a transmission unit that transmits encoded data obtained by encoding by the encoding unit, and the inter-layer prediction control information.

[0028]

30 If a current picture of a current main layer belongs to the sublayer specified as the sublayer for which the

and the inter-layer syntax prediction control information that are set independently from each other as the inter-layer prediction control information.

[0033]

5 The inter-layer pixel prediction control information may control using the sublayer, whether to perform the inter-layer pixel prediction; the encoding unit may perform the inter-layer pixel prediction on only the sublayers specified by the inter-layer pixel prediction control information; the
10 inter-layer syntax prediction control information may control whether to perform the inter-layer syntax prediction for each picture or slice; and the encoding unit may perform the inter-layer syntax prediction on only the picture or slice specified by the inter-layer syntax prediction control
15 information.

[0034]

 The transmission unit may transmit the inter-layer pixel prediction control information as a nal unit (nal_unit), a video parameter set (VPS (Video Parameter Set)), or an
20 extension video parameter set (vps_extension).

[0035]

 The transmission unit may transmit the inter-layer syntax prediction control information as a nal unit (nal_unit), a picture parameter set (PPS (Picture Parameter Set)), or a
25 slice header (SliceHeader).

[0036]

~~Further, another aspect of the present technique~~
| Disclosed herein is an image processing method including:
encoding each main layer of the image data by performing
30 inter-layer prediction, which is prediction between a plurality of main layers, on only a sublayer specified by inter-layer prediction control

information that controls whether to perform the inter-layer prediction with the use of a sublayer; and transmitting encoded data obtained by the encoding, and the inter-layer prediction control information.

5 [0037]

In an ~~aspect~~embodiment of the present ~~technique~~invention, the encoded data in which the image with the plural main layers is encoded, and the inter-layer prediction control information that controls whether to perform the inter-layer prediction, which is the prediction between the main layers, using the sublayer are received and the inter-layer prediction is performed on just the sublayer specified by the received inter-layer prediction control information; thus, each main layer of the received encoded data is decoded.

15 [0038]

In another ~~aspect~~embodiment of the present ~~technique~~invention, the inter-layer prediction is performed on just the sublayer specified by the inter-layer prediction control information that controls whether to perform the inter-layer prediction, which is the prediction between the main layers, using the sublayer; thus, each main layer of the image data is encoded and the encoded data obtained by the encoding and the inter-layer prediction control information are transmitted.

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EFFECTS OF THE INVENTION

[0039]

According to embodiments the present ~~disclosure~~invention, the image can be encoded and decoded and particularly, the deterioration in encoding efficiency can be suppressed.

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BRIEF DESCRIPTION OF DRAWINGS