Kirchhoffer, Haricharan Lakshman, Detlev Marpe, Simon Oudin, Matthias Preiss, Heiko Schwarz, Mischa Siekmann, Karsten Suehring, and Thomas Wiegand, "Description of video coding technology proposed by Fraunhofer HHI," JCTVC-A116, April, 2010

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0013]

However, these techniques illustrate processes in the same view only and cannot perform inter-view vector prediction in the case of multi-view encoding. Thus, encoding efficiency may decrease.

[0014]

Embodiments of the present invention are made in view of the situations, and aim to suppress a decrease in the encoding efficiency.

SOLUTIONS TO PROBLEMS

[0014a]

According to a first aspect of the present invention, there is provided an image processing device including: circuitry configured to set a candidate of a predictive vector by setting a co-located vector as unavailable as the candidate of the predictive vector for a coding vector in a current block of a current picture where a reference picture of the coding vector is of a different type of two reference picture types than a reference picture of the co-located vector, wherein the co-located vector is in a co-located block included in a co-located picture of a time different from the current picture but of a same view as the current picture, and wherein the two reference picture types comprise a long-term reference picture type and a short-term reference picture type; reconstruct the coding vector using the predictive vector in the current block according to the candidate of the predictive vector and a difference vector between the coding vector and the generated predictive vector; and decode the

current block using the coding vector.

[0014b]

According to a second aspect of the present invention, there is provided an image processing method, including: setting a candidate of a predictive vector by setting a co-located vector as unavailable as the candidate of the predictive vector for a coding vector in a current block of a current picture where a reference picture of the coding vector is of a different type of two reference picture types than a reference picture of the co-located vector, wherein the co-located vector is in a co-located block included in a co-located picture of a time different from the current picture but of a same view as the current picture, and wherein the two reference picture types comprise a long-term reference picture type and a short-term reference picture type; reconstructing the coding vector using the predictive vector in the current block according to the candidate of the predictive vector and a difference vector between the coding vector and the generated predictive vector; and decoding the current block using the coding vector.

[0015]

Disclosed herein is an image processing device including: a predictive vector generating unit that generates a predictive vector of a current parallax vector of a current block used in prediction using correlation in a parallax direction using a reference parallax vector referred when generating a predictive motion vector, when encoding the current parallax vector; and a difference vector generating unit that generates a difference vector between the current parallax vector and the predictive vector generated by the predictive vector generating unit.

[0016]

The predictive vector generating unit may generate a predictive vector of the current parallax vector using a parallax vector of a co-located block included in a co-located

CLAIMS

1. An image processing device comprising:

circuitry configured to:

set a candidate of a predictive vector by setting a co-located vector as unavailable as the candidate of the predictive vector for a coding vector in a current block of a current picture where a reference picture of the coding vector is of a different type of two reference picture types than a reference picture of the co-located vector, wherein the co-located vector is in a co-located block included in a co-located picture of a time different from the current picture but of a same view as the current picture, and wherein the two reference picture types comprise a long-term reference picture type and a short-term reference picture type;

reconstruct the coding vector using the predictive vector in the current block according to the candidate of the predictive vector and a difference vector between the coding vector and the generated predictive vector; and

decode the current block using the coding vector.

2. The image processing device according to claim 1, wherein

the circuitry is further configured to set the candidate of the predictive vector using POC (Picture Order Count) that indicates an output order of pictures.

3. The image processing device according to claim 1, wherein

the circuitry is further configured to set the co-located vector as unavailable as the candidate of the predictive vector where the coding vector comprises a motion vector having a short-term reference picture and the co-located vector comprises an inter-view vector having a long-term reference picture.

4. The image processing device according to claim 3, wherein

the circuitry is further configured to set the co-located vector as unavailable as the candidate of the predictive vector where the coding vector comprises an inter-view vector having a long-term reference picture and the co-located vector comprises a motion vector having a short-term reference picture.

5. The image processing device according to claim 1, wherein the circuitry comprises a Central Processing Unit (CPU).

6. An image processing method, comprising:

setting a candidate of a predictive vector by setting a co-located vector as unavailable as the candidate of the predictive vector for a coding vector in a current block of a current picture where a reference picture of the coding vector is of a different type of two reference picture types than a reference picture of the co-located vector, wherein the co-located vector is in a co-located block included in a co-located picture of a time different from the current picture but of a same view as the current picture, and wherein the two reference picture types comprise a long-term reference picture type and a short-term reference picture type;

reconstructing the coding vector using the predictive vector in the current block according to the candidate of the predictive vector and a difference vector between the coding vector and the generated predictive vector; and

decoding the current block using the coding vector.

7. The image processing method according to claim 6, wherein the candidate of the predictive vector is set using POC (Picture Order Count) that indicates an output order of pictures.

8. The image processing method according to claim 6, wherein the co-located vector is set as unavailable as the candidate of the predictive vector where the coding vector comprises a motion vector having a short-term reference picture and the co-located vector comprises an inter-view vector having a long-term reference picture.

9. The image processing method according to claim 8, wherein the co-located vector is set as unavailable as the candidate of the predictive vector where the coding vector comprises an inter-view vector having a long-term reference picture and the co-located vector comprises a motion vector having a short-term reference picture.