Appeal Decision

Appeal No. 2019-12580

Appellant PANASONIC INTELLECTUAL PROPERTY CORPORATION OF AMERICA

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The case of appeal against the examiner's decision of refusal of Japanese Patent Application No. 2016-515852, entitled "ENCODING METHOD, DECODING METHOD, ENCODING APPARATUS, AND DECODING APPARATUS" (International published on November 5, 2015, WO 2015/166639) has resulted in the following appeal decision.

Conclusion

The appeal of the case was groundless.

Reason

No. 1 History of the procedures

The present application was filed on April 17, 2015 as an International Patent Application (Priority date: April 28, 2014, February 5, 2015, Priority claim under the Paris Convention: May 28, 2014, United States). The history of the procedures thereafter is as follows.

Dated January 10, 2019 : Notice of reasons for refusal
April 18, 2019 : Submission of Written opinion and Written amendment
Dated May 17, 2019 : Examiner's decision of refusal
September 24, 2019 : Appeal against the examiner's decision of refusal and Written amendment
October 18, 2019 : Reconsideration report

No. 2 Decision to dismiss the amendment regarding the written amendment dated September 24, 2019

[Conclusion of Decision to Dismiss Amendment]
The amendment dated September 24, 2019 shall be dismissed.

[Reason]
1 Details of the Amendment

The written amendment dated September 24, 2019 (hereinafter referred to as "the Amendment") is to amend Claims 1 to 18 of the scope of claims amended by the written amendment dated April 18, 2019 to Claims 1 to 18 of the scope of claims according to the Amendment. The Amendment includes matters to amend Claim 15 before the Amendment to Claim 15 after the Amendment (the amended portions are underlined).

(Claim 15 before the Amendment)
[Claim 15]

An encoding method for encoding a video image by block including

deriving a motion vector using a first image and a different reconstructed image in encoding processing, wherein

a bit stream includes first information indicating whether to enable a function for deriving a motion vector in a decoder, and second information to be used for determining the first image to be used in encoding,

the second information indicates one of a plurality of candidates, and

positions of the reconstructed image to be used as the first image are different in accordance with the second information.

(Claim 15 after the Amendment)
[Claim 15]

An encoding method for encoding a video image by block including

deriving a motion vector using a first image and a different reconstructed image in encoding processing, wherein

a bit stream includes first information indicating whether to enable a function for deriving a motion vector in a decoder, and second information to be used for determining the first image to be used in encoding,

the second information <u>is one index</u> indicating <u>one of</u> a plurality of candidates of <u>the first image</u>, and

positions of the reconstructed image to be used as the first image are different in accordance with the second information.

2 Suitability of the amendment

(1) Judgment on the object of the amendment

The amendment according to Claim 15 is to amend, regarding "second information to be used for determining the first image to be used in encoding", the description before the Amendment, "the second information indicates one of a plurality of candidates", to the description after the Amendment, "the second information is one index indicating one of a plurality of candidates of the first image".

The amendment is to specify "a plurality of candidates" before the amendment as "a plurality of candidates of the first image", to specify the second information which "indicates one of a plurality of candidates" as "one index indicating one of a plurality of candidates of the first image", and to limit the second information by making the concept thereof narrower as one index indicating one candidate. Accordingly, it can be said that the amendment is intended for restriction of the scope of claims.

In each amendment, the invention according to Claim 15 before the Amendment and the invention according to Claim 15 after the Amendment belong to the same industrial field and aim to solve the same problems. Thus, the amendment relating to Claim 15 falls under the provisions of Article 17-2(5)(ii) of the Patent Act.

(2) Judgment on the scope of the amendment and unity

The specification, the scope of claims, and drawings originally attached to the application (hereinafter referred to as "specifications, etc.") include the following descriptions. (The underlines were added by the body for emphasis.)

"[0062]

The selector is realized by some functions of the motion vector predictor 131. That is to say, the selector selects one nearby template from N (N being an integer equal to or greater than 2) nearby templates that are predefined for the current block and represent different regions spatially adjacent to the current block."

"[0064]

The coding method for executing the motion estimating processing using a nearby template according to the present exemplary embodiment is described with reference to FIG. 8 to FIG. 10.

[0065]

FIG. 8 is a flowchart illustrating one example of the coding processing according to the present exemplary embodiment.

[0066]

The controller 130 of the coding apparatus 100 identifies the plurality of predefined nearby templates for the current block in first step S1001. In the next step, step S1002, the motion vector predictor 131 selects one nearby template from the plurality of predefined nearby templates based on a predefined standard. In step S1003 the motion vector predictor 131 derives the motion vector using the selected nearby template during the motion estimating processing. In step S1004 the inter predictor 108 makes the motion compensation using the derived motion vector. The current block is coded by this motion compensation. In final step S1008 the writing unit 136 writes one or more identification parameters for specifying the selected nearby template into the bit stream Bs.

"[0097]

FIG. 16A to FIG. 16C are diagrams illustrating exemplary positions of parameters for selecting the nearby template. As illustrated in FIGS. 16A(i) to 16A(iv), a unique identification parameter for selecting one nearby template (this parameter is also enabled when a nearby template is selected from the subset) is an identification parameter for identifying a nearby template to be selected, and is particularly a parameter unique to the nearby template."

According to the above descriptions in the specifications, etc., the amended matters are based on the descriptions especially in [0062], [0066], and [0097]. Thus, the amendment relating to Claim 15, which is made within the scope of matters described in the specifications, etc. at the filing of the application, falls under the provisions of Article 17-2(3) of the Patent Act.

The amendment relating to Claim 15 is, as described above, an amendment intended for restriction of the scope of claims. The invention according to Claim 15 before the Amendment and the invention according to Claim 15 after the Amendment satisfy the requirements of unity of invention. Thus, the amendment relating to Claim 15 falls under the provisions of Article 17-2(4) of the Patent Act.

(3) Judgment on independent requirements for patentability

As described above, the amendment relating to Claim 15 is intended for restriction of the scope of claims. Then we will examine below whether the invention according to Claim 15 after the Amendment falls under the provisions of Article 126(7) of the Patent Act which is applied mutatis mutandis in the provisions of Article 17-2(6) of the Patent Act (whether the appellant can be granted a patent independently at the time of patent application).

(3-1) The Amended invention

The invention according to Claim 15 after the Amendment (hereinafter referred to as "the Amended invention") is as follows. (The reference letters of constituent components of the Amended invention were added by the body for segmenting the description of the claim. The recitations of the claim are referred to as Matters specifying the invention A to E by using the reference letters in the claim.)

(The Amended invention)

A An encoding method for encoding a video image by block including

B deriving a motion vector using a first image and a different reconstructed image in encoding processing, wherein

C a bit stream includes first information indicating whether to enable a function for deriving a motion vector in a decoder, and second information to be used for determining the first image to be used in encoding,

D the second information is one index indicating one of a plurality of candidates of the first image, and

E positions of the reconstructed image to be used as the first image are different in accordance with the second information.

(3-2) Described matters in Cited documents, etc.

A Cited Document 2

Cited Document 2 cited in the reasons for refusal stated in the examiner's decision,

Yu-Wen Huang et al., TE1: Decoder-Side Motion Vector Derivation with Switchable Template Matching, Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, 2nd Meeting: Geneva, CH, July, 2010, JCTVC-B076, pp. 1-11,

includes the following description (the underlines were added by the body for emphasis).

(A) "Abstract

This contribution describes MediaTek's work on decoder-side motion vector derivation (DMVD). In prior arts, template matching (TM) is always used to obtain motion information. In this proposal, it is suggested to adopt a switchable TM, and therefore two DMVD modes, DMVD_DIRECT and DMVD_TM, are provided. ... For DMVD_TM, TM is enabled. The TM search algorithm begins with an initial stage followed by a refinement stage. Moreover, adaptive template shape and boundary weighting are newly developed to improve the coding efficiency with low complexity overhead."

(B) "1 Introduction

DMVD was first proposed by RWTH Aachen University [1][2][3][4][5][6]. The main concept is that since reference picture indices and MVs can be derived by TM on both encoder and decoder sides, they do not have to be transmitted. ... Besides RWTH Aachen University, we also proposed our DMVD in [7] at the first JCT-VC meeting in April 2010. ... Recently, we keep improving our DMVD to achieve better coding efficiency and less decoding complexity. The most significant difference from prior arts is that TM can be turned on or off. When TM is off, we call this mode DMVD_DIRECT. When TM is on, we call it DMVD_TM."

(C) "2 Algorithm description

First, we describe common properties of our DMVD work. ... Currently, our DMVD implementation is based on KTA2.6r1 [10]. DMVD is allowed for three levels of CUs including 16x16, 32x32, and 64x64. A dmvd_enable_flag is sent for each supported 2Nx2N CU (N=8, 16, 32) when "the current CU is not split into four NxN CUs" and "the current CU is not coded with 2NxN or Nx2N prediction unit (PU) mode" in order to distinguish between the conventional 2Nx2N PU mode and the proposed DMVD mode. If DMVD is applied, a dmvd_no_residue_flag is further sent for the current CU to indicate if prediction residues are coded or not, and a dmvd_template_match_flag is also sent for the current CU to select between DMVD_DIRECT and DMVD_TM, which will be described in Section 2.1 and Section 2.2, respectively."

(D) "2.2 DMVD_TM mode

When dmvd_template_match_flag is 1, DMVD_TM is applied. For each PU of a DMVD_TM CU, motion information is derived by TM. A few DMVD_TM parameters, including hypothesis number, matching criterion, boundary weighting, and

template shape, are provided at picture parameter set (PPS) or CU level."

(E) "2.2.4 Template shape
In addition to the L-shape template, 3 more template shapes are allowed. The L-shape mode, left mode, upper mode, and corner mode are shown in Figure 6. For each DMVD_TM_CU, dmvd_tm_mode_b1 and dmvd_tm_mode_b0 are compressed by CABAC and sent to decoders for signaling the best mode. For easier explanation, neighboring 4x4 blocks to be included in the template region are numbered from 1 to 2N+1 as shown in Figure 6, where N varies with the CU size. The L-shape template contains all 4x4 blocks numbered from 1 to 2N+1, while left, upper, and corner modes contain 4x4 blocks numbered from 1 to N, from N+2 to 2N+1, and from N/2+1 to 3/2N+1, respectively."

(F) "

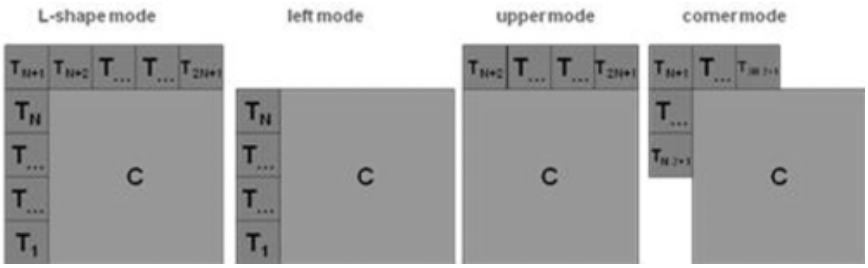


Figure 6 Illustration of 4 modes of template shapes"

(G) "References
[1] Steffen Kamp, Michael Evertz, and Mathias Wien, "Decoder Side Motion Vector Derivation" ITU-T SG16 Q.6 Document, VCEG-AG16, Oct. 2007."

B Document referred in Cited Document 2 (Reference Document)

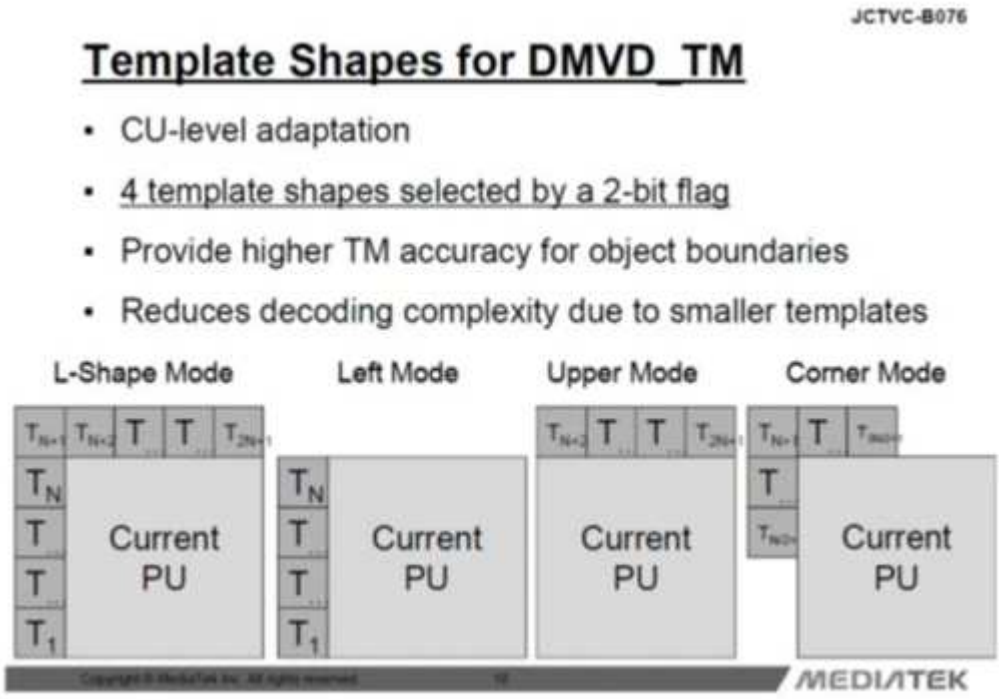
The document in (G), which is referred to as "References [1]" in (B) of Cited Document 2, Steffen Kamp, Michael Evertz, and Mathias Wien, "Decoder Side Motion Vector Derivation" ITU-T SG16 Q.6 Document, VCEG-AG16, Oct. 2007 (hereinafter referred to as Reference Document) includes the following descriptions on pp. 1 l. 14 to l. 22.

"Inter-Prediction using Template Matching (TM)
In the case of inter-prediction the template matching process can be seen as a motion

vector search at the decoder side. Here, template matching is performed very similarly to traditional motion estimation techniques: Motion vectors are evaluated by calculating a cost function for accordingly displacing template-shaped regions in the reference frames. The best motion vector for the template is then used to predict the target area. Only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search. Thus the decoder is able to execute the template matching process and predict the target area without additional side information."

C Document associated with Cited Document 2

The document JCTVC-B706_presentation.ppt of TE1: Decoder-Side Motion Vector Derivation with Switchable Template Matching, Yu-Wen Huang, Ching-Yeh Chen, Chih-Wei Hsu, Jian-Liang Lin, Yu-Pao Tsai, Jicheng An, and Shawmin Lei, http://phenix.int-evry.fr/jct/doc_end_user/documents/2_Geneva/wg11/JCTVC-B076.zip, which is stored in association with Cited Document 2 JCTVC-B076.doc in http://phenix.int-evry.fr/jct/doc_end_user/documents/2_Geneva/wg11/JCTVC-B076.zip where Cited Document 2 is stored, includes the following description on the 10th slide.



(3-3) Cited Invention

A As indicated in (3-2) A (A), Cited Document 2 adopts template matching (TM) regarding decoder-side motion vector derivation (DMVD).

B The above Reference Document is referred as document [1] in which the DMVD was proposed, in (3-2) A (B) and (G), and describes the following matters regarding template matching in the DMVD.
· The template matching process can be seen as a motion vector search at the decoder side.
· Motion vectors are evaluated by calculating a cost function for accordingly displacing template-shaped regions in the reference frames, and the best motion vector for the template is used to predict the target area.
· Only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search, and the decoder is able to execute the template matching process and predict the target area.

Accordingly, Reference Document describes, regarding the template matching process in DMVD, that the template matching process can be seen as a motion vector search at the decoder side, which is executed in a decoder, only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search, and best motion vector for the template is used to predict the target area.

Therefore, Cited Document 2 based on Reference Document is a document that describes, regarding deriving motion vector by template matching process in DMVD, that the template matching process can be seen as a motion vector search at the decoder side, only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search, and best motion vector for the template is used to predict the target area.

C Accordingly, the template matching process can be seen as a motion vector search at the decoder side, while the matter described in (3-2) A (A) relates to decoder-side motion vector derivation (DMVD) and can be a method of executing processing that adopts template matching (TM).

D As described above, it is recognized that Cited Document 2 describes the following invention (hereinafter referred to as "Cited Invention"). Constituting components of the Cited Invention are referred to as Components (a1) to (d2) by using the reference symbols (a1) to (d2).

(Cited Invention)

(a1) A method which is decoder-side motion vector derivation (DMVD), adopts a switchable template matching (TM), wherein, for DMVD_TM, TM is enabled, adaptive template shape is newly developed to improve the coding efficiency, ((3-2) A (A), (3-3) C)

(a2) DMVD is configured so that reference picture indices and MVs can be derived by TM on both encoder and decoder sides, ((3-2) A (B))

(a3) the template matching process can be seen as a motion vector search at the decoder side, which is executed in a decoder, only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search, and the best motion vector for the template is used to predict the target, ((3-3) B)

(b) a dmvd_template_match_flag is sent for the current CU to select between DMVD_DIRECT and DMVD_TM, ((3-2) A (C))

(c) when dmvd_template_match_flag is 1, DMVD_TM is applied, for each PU of a DMVD_TM CU, motion information is derived by TM, a few DMVD_TM parameters including template shapes are provided at CU level, ((3-2) A (D))

(d1) in addition to the L-shape template, 3 more template shapes are allowed and they are L-shape mode, left mode, upper mode, and corner mode shown in FIG. 6, ((3-2) A (E), (F))

L-shape mode Left mode Upper mode Corner mode

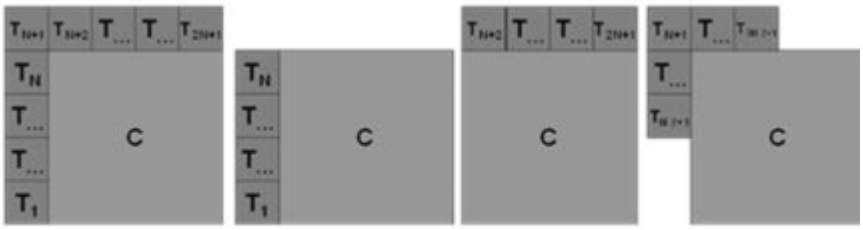


FIG. 6 Four modes of template shapes

(d2) for each DMVD_TM CU, dmvd_tm_mode_b1 and dmvd_tm_mode_b0 are compressed by CABAC and sent to decoders for signaling the best mode, ((3-2) A (E))

(a1) to improve the coding efficiency.

(3-4) Comparison between the Invention and the Cited Invention

The Invention and the Cited Invention are compared below.

A Regarding the Matter specifying Invention A

The "decoder-side motion vector derivation (DMVD)" in the Component (a1) of the Cited Invention can, as indicated in the Component (a2), derive reference picture indices and MVs (motion vectors), at the encoder side, by TM (template matching).

According to the matter indicated in the Component (b), "for the current CU to select between DMVD_DIRECT and DMVD_TM", and the matter indicated in the Component (c), "for each PU of a DMVD_TM CU, motion information is derived by TM, a few DMVD_TM parameters including template shapes are provided at CU level", it can be said that encoding is performed for each DMVD_TM CU.

Accordingly, the "decoder-side motion vector derivation (DMVD)" in the Component (a1) of the Cited Invention, which derives reference picture indices and MVs at the encoder side by template matching in the Component (a2), based on the Components (b) and (c), corresponds to the Matter specifying Invention A of the Amended invention "An encoding method for encoding a video image by block".

B Regarding the Matter specifying Invention B

The "decoder-side motion vector derivation (DMVD)" in the Component (a1) of the Cited Invention, which derives reference picture indices and MVs (motion vector) at the encoder side by template matching in the Component (a2), is configured, as indicated in the Component (a3), so that only those areas of the image where a reconstruction or at least a prediction signal already exists are accessed for the search, and the best motion vector for the template is derived. Thus, it can be said that areas of the image already reconstructed and a template are used.

Accordingly, the "template" and the "reconstructed image" in the Component (a3) correspond to the "first image" and the "different reconstructed image" in the Matter specifying Invention B of the Amended invention, respectively.

The "decoder-side motion vector derivation (DMVD)" in the Component (a1) of the Cited Invention, which derives reference picture indices and MVs at the encoder side by template matching in the Component (a2), based on the Component (a3), corresponds to the Matter specifying Invention B of the Amended invention, "deriving a motion vector using a first image and a different reconstructed image in encoding processing."

C Regarding the Matter specifying Invention C

(A) Regarding the matters described in the Components (b) and (c) of the Cited Invention, "a dmvd_template_match_flag is sent for the current CU to select between DMVD_DIRECT and DMVD_TM, and when dmvd_template_match_flag is 1,

DMVD_TM is applied", "for DMVD_TM, TM is enabled" as indicated in the Component (a1). Thus, it can be said that when the transmitted dmvd_template_match_flag is 1, template matching in decoder-side motion vector derivation is enabled.

As indicated in A, encoding is performed for each CU. Thus, it can be said that the matter in the Component (b) that the dmvd_template_match_flag is sent for the current CU means that it is sent as a code stream (bit stream) together with a coded current CU.

Therefore, the dmvd_template_match_flag in the Component (b) corresponds to the "first information indicating whether to enable a function for deriving a motion vector in a decoder" included in the "bit stream" in the Matter specifying Invention C of the Amended Invention.

(B) As indicated in B, the "template" in the Component (a3) corresponds to the "first image" of the Amended invention.

The following matters are recognized from the description in the Component (c) of the Cited Invention "a few DMVD_TM parameters including template shapes are provided at CU level", the description in the Component (d1) "in addition to the L-shape template, 3 more template shapes are allowed, the L-shape mode, left mode, upper mode, and corner mode are shown in FIG. 6", and the description in the Component (d2) "for each DMVD_TM CU, dmvd_tm_mode_b1 and dmvd_tm_mode_b0 signal the best mode":

. The template shapes in the DMVD_TM parameters are the L-shape mode, left mode, upper mode, and corner mode shown in FIG. 6.

. The dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 are DMVD_TM parameters relating to template shape provided at CU level, for signaling the best mode of template shapes of four modes.

Thus, it can be said that the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 are information to be used for determining a template and signaled as a code stream (bit stream) together with the coded current CU.

Therefore, the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Component (d2) correspond to the "second information to be used for determining the first image to be used in encoding" included in the "bit stream" in the Matter specifying the Invention C of the Amended Invention.

D Regarding the Matter specifying the Invention D

As indicated in C (B), it can be said that the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Component (d2) signal the best mode of template shapes of four modes, and correspond to "the second information indicating one of a plurality of candidates of the first image" in the Matter specifying the Invention D of the Amended invention.

However, the second information of the Amended Invention is one index, while it is unclear whether the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Component (d2) are one index or not.

E Regarding the Matter specifying the Invention E

As indicated in D, the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Component (d2) signal the best mode of template shapes of four modes, and as indicated in C (B), the four modes of template shapes are the L-shape mode, left mode, upper mode, and corner mode shown in FIG. 6, and they are obviously different in position.

Therefore, it can be said that the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Component (d2) are configured, as is the case with the second information in the Component E of the Amended Invention, so that "positions of the reconstructed image to be used as the first image are different" in accordance with values thereof.

On the basis of the above comparison, a corresponding feature and a different feature are as follows.

(Corresponding Feature)

A An encoding method for encoding a video image by block including

B deriving a motion vector using a first image and a different reconstructed image in encoding processing, wherein

C a bit stream includes first information indicating whether to enable a function for deriving a motion vector in a decoder, and second information to be used for determining the first image to be used in encoding,

D' the second information is one of a plurality of candidates of the first image, and

E positions of the reconstructed image to be used as the first image are different in accordance with the second information.

(Different Feature)

Regarding the Component D', in the Amended Invention, the "second information" which indicates one of a plurality of candidates of the first image is configured by "one index". However, it is unclear whether the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 in the Cited Invention are configured by one index or not.

(3-5) Judgment on the Different Feature

According to the matters described in the above document associated with Cited Document 2, the matter that a two-bit flag is used for selecting a template shape in DMVD_TM from four template shapes is merely a well-known technical matter. It can be said that a person skilled in the art could have conceived of applying the matters described in the document associated with Cited Document 2 to configure the two-bit flag, without difficulty, in implementing the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 to be sent to a decoder, for signaling the best mode of the L-shape mode, left mode, upper mode, and corner mode, or for selection from four template shapes, in the Cited Invention.

When the two-bit flag is used selection from four template shapes, the two-bit flag is not used as separate two pieces of one-bit information but is used as one index for two bits. Thus, this is nothing less than the configuration relating to the above different feature.

(4) Appellant's allegation

The Appellant alleges as follows in "3. Reasons that the Invention should be granted a patent" "(c-2) Regarding Cited Document 2" in the written appeal dated September 24, 2019. The allegation is examined below.

(The Appellant's allegation)

"(c-2) Regarding Cited Document 2

In fact, Cited Document 2 includes the description, "dmvd_tm_mode_b1 and dmvd_tm_mode_b0 are... (Omitted) ...sent to decoders for signaling the best mode". Cited Document 2 discloses that one mode is indicated by using the two pieces of information, dmvd_tm_mode_b1 and dmvd_tm_mode_b0; however, it does not describe or indicate one piece of information which uniquely determines one mode, or a configuration where "the control information is one index which indicates one of N nearby templates". Therefore, the effect of reducing the throughput of a decoder by uniquely selecting one of a plurality of candidates of nearby templates used in encoding

with a smaller number of codes is not produced.

Instead, the disclosure of using the two pieces of information, dmvd_tm_mode_b1 and dmvd_tm_mode_b0, in Cited Document 2 is considered to indicate that a person skilled in the art could not easily conceive of a configuration that "the control information is one index which indicates one of N nearby templates" in the field of DMVD_TM mode. Therefore, even if Cited Documents 1 and 2 are combined, the invention according to Claim 1 after the Amendment cannot be easily conceived.

The decoding method in Claim 8 after the Amendment is a method corresponding to the encoding method in Claim 1. The same as Claim 1 after the Amendment applies to the decoding method.

In Claim 15 after the Amendment, as is the case with Claim 1 after the Amendment, the "second information to be used for determining the first image to be used in encoding" is "one index indicating one of a plurality of candidates of the first image". The invention of the decoding method according to Claim 16 after the Amendment is an invention corresponding to the invention of the encoding method in Claim 15. Therefore, the same as Claim 1 after the Amendment applies to new Claims 15 and 16 after the Amendment.

Thus, novelty and inventive step relating to Claims 1, 8, 15, and 16 after the Amendment should not be denied by Cited Documents 1 and 2. Regarding the inventions according to Claims 2-7, 9-14, 17, and 18 after the Amendment which have the same characteristics as the inventions according to Claims 1, 8, 15, and 16 after the Amendment, novelty and inventive step of the inventions according to Claims 2-7, 9-14, 17, and 18 should not be denied."

The above allegation is examined below.

According to the judgment on the different feature in (3-5), in the Cited Invention, a person skilled in the art could have easily conceived of configuring the dmvd_tm_mode_b1 and the dmvd_tm_mode_b0 sent to a decoder for signaling the best mode of the L-shape mode, left mode, upper mode, and corner mode, as a two-bit flag for selecting one of four template shapes. And the two-bit flag is not used as separate two pieces of one-bit information but is used as one index for two bits.

This configuration can produce the effect of reducing the throughput of a decoder by uniquely selecting one of a plurality of candidates of nearby templates used in encoding with a smaller number of codes, 2 bits.

Accordingly, the Appellant's allegation cannot be accepted.

(5) Summary

As described above, the Amended Invention could have been easily made by a person skilled in the art on the basis of the invention described in Cited Document 2 and the matters described in the document associated with Cited Document 2. Thus, the Appellant should not be granted a patent independently at the time of patent application under the provisions of Article 29(2) of the Patent Act.

3 Closing

As above, since the Amendment violates the provisions of Article 126(7) of the Patent Act which is applied mutatis mutandis in the provisions of Article 17-2(6) of the Patent Act, the Amendment should be dismissed under the provisions of Article 53(1) which is applied mutatis mutandis pursuant to the provisions of Article 159(1).

No. 3 Regarding the Invention

1 The Invention

The Amendment dated September 24, 2019 was dismissed as above. The inventions according to claims of the application are as specified by the matters recited in Claims 1 to 18 of the scope of claims amended by the written amendment submitted on April 18, 2019. Among the inventions, the invention according to Claim 15 (hereinafter referred to as "the Invention") is as specified by the matters recited in (Claim 15 before the Amendment) indicated in No. 2 1.

2 Reasons for refusal stated in the examiner's decision

The details of the reasons for refusal dated January 10, 2019, which are reasons for refusal stated in the examiner's decision, are outlined below.

Note

(Novelty) The inventions according to Claims 1-2, 5-6, 8-9, and 15-16 of the application are inventions described in the following publication distributed or inventions which were made publicly available through an electric telecommunication line in Japan or a foreign country, prior to the filing of the application. Thus, the Appellant should not be granted a patent for the inventions under the provisions of Article 29(1)(iii) of the Patent Act.

(Inventive step) The Inventions according to Claims 1-2, 5-6, 8-9, and 15-16 of the application are inventions which could have been easily made by a person ordinarily skilled in the art of the invention prior to the filing of the application, on the basis of

inventions described in the following publication distributed or inventions which were made publicly available through an electric telecommunication line in Japan or a foreign country, prior to the filing of the application. Thus, the Appellant should not be granted a patent for the inventions under the provisions of Article 29(2) of the Patent Act.

Cited Document 2: Yu-Wen Huang et al., TE1: Decoder-Side Motion Vector Derivation with Switchable Template Matching, Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, 2nd Meeting: Geneva, CH, July, 2010, JCTVC-B076, pp.1-11

3 Cited Invention

The described matters in Cited Document 2 cited in the reasons for refusal stated in the examiner's decision are as indicated in No. 2 2 (3-2) A, and the Invention described in Cited Document 2 (Cited invention) is as recognized in No. 2 2 (3-3) D.

4 Comparison, Judgment

The Invention is, regarding the "second information" or the "second information to be used for determining the first image to be used in encoding", which is "one index indicating one of a plurality of candidates of the first image", to make the concept thereof more generic by using the description, "indicating one of a plurality of candidates", excluding the matter specifying the invention, "of the first image", and the matter specifying the invention, "one index indicating one", limited in (Claim 15 after the Amendment) in No. 2 1.

As indicated in the comparison between the Amended invention and the Cited Invention in No. 2 2 (3-4), the Amended invention and the Cited Invention are different in that the second information "indicating one of a plurality of candidates of the first image" in the Component D of the Amended invention is configured by one index; however, they are identical in other points.

Accordingly, there is no difference between the Cited Invention and the Invention excluding the above different feature from the Amended Invention. Thus, the Invention is the invention described in the Cited Document 2.

No. 4 Closing

As described above, the Invention is the invention described in Cited Document 2. Thus, the Appellant should not be granted a patent for the invention under the

provisions of Article 29(1)(iii) of the Patent Act.

The present application should be refused without examining other claims.

Therefore, the appeal decision shall be made as described in the conclusion.

October, 20, 2020

Chief administrative judge: SHIMIZU, Masakazu

Administrative judge: KAWASAKI, Hiroshi

Administrative judge: CHIBA, Teruhisa