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**Datasheet for the decision
of 16 October 2024**

Case Number: T 1708/21 - 3.5.04

Application Number: 13757485.1

Publication Number: 2824920

IPC: H04N19/52, H04N13/00

Language of the proceedings: EN

Title of invention:

METHOD FOR CODING VIDEO, METHOD FOR DECODING VIDEO, DEVICE FOR
CODING VIDEO, DEVICE FOR DECODING VIDEO, AND DEVICE FOR
CODING/DECODING VIDEO

Applicant:

Sun Patent Trust

Headword:

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step - (no)

Decisions cited:

T 1148/15, T 1448/15

Catchword:



Beschwerdekammern
Boards of Appeal
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Case Number: T 1708/21 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 16 October 2024

Appellant: Sun Patent Trust
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 25 May 2021
refusing European patent application
No. 13757485.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair B. Le Guen
Members: M. Paci
W. Ungler

Summary of Facts and Submissions

- I. The appeal is against the examining division's decision refusing European patent application No. 13 757 485.1, published as international patent application WO 2013/132792 A1.
- II. In the decision under appeal, the examining division cited the following document, *inter alia*.
- D1: B. Bross et al.: "High efficiency video coding (HEVC) text specification draft 6", Joint Collaborative Team on Video Coding (JCT-VC) of ITU-T SG16 WP3 and ISO/IEC JTC1/SC29/WG11, 7th Meeting, Geneva, Switzerland, 21 to 30 November 2011, no. JCTVC-H1003_dI, 17 February 2012, XP055068694
- III. The decision under appeal was based on the grounds that the subject-matter of claim 1 of the **main request and the first to third auxiliary requests then on file** did not involve an inventive step in view of document D1.
- IV. The applicant (appellant) filed notice of appeal. In its statement of grounds of appeal, the appellant maintained the main request and first to third auxiliary requests underlying the decision under appeal.
- V. A summons to oral proceedings was issued. In a communication under Article 15(1) RPBA the board gave the following preliminary opinion.

- The subject-matter of claims 1, 4, 7 and 8 of the main request did not involve an inventive step in view of document D1 (Article 56 EPC).
- The subject-matter of claims 1, 3, 5 and 6 of the first, second and third auxiliary requests did not involve an inventive step in view of document D1 (Article 56 EPC).
- Even if the appellant were correct that two arguments present in the Reasons for the decision had not been presented in the oral proceedings, these arguments would not amount to a substantial procedural violation which could justify remittal of the case to the department of first instance (Article 11 RPBA and Article 111(1) EPC) or reimbursement of the appeal fee (Rule 103 EPC).

VI. The board held oral proceedings on 16 October 2024.

The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request underlying the decision under appeal or, alternatively, of one of the first to third auxiliary requests underlying the decision under appeal.

At the end of the oral proceedings, the Chair announced the board's decision.

VII. Claim 1 of the appellant's **main request** reads as follows:

"A moving picture coding method for coding a current block to be coded included in a current picture to be coded by inter predictive coding using a motion vector, the moving picture coding method comprising:

assigning one or more reference picture indexes to a reference picture list;

coding (S111) a first flag (*enable_temporal_mvp_flag*) indicating whether or not temporal motion vector prediction using a temporal motion vector predictor which is a motion vector of a block included in a coded picture different from the current picture is used;

A) when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is used:

coding (S113) a collocated reference picture index (*collocated_ref_idx*) for specifying the coded picture among a plurality of pictures indicated by the one or more reference picture indexes;

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference picture index (*collocated_ref_idx*);

coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and

outputting the coded first flag (*enable_temporal_mvp_flag*), the coded collocated reference picture index (*collocated_ref_idx*), and the coded motion vector;

B) when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is not used:

deriving (S117) a plurality of second motion vector predictor candidates that do not include the temporal motion vector predictor, the second motion vector predictor candidates including (i) a spatial motion

vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) a replacement vector, as a replacement for the temporal motion vector predictor, which has a value of zero;
coding (S118) a motion vector used for performing inter predictive coding on the current block, using one of the second motion vector predictor candidates; and outputting the coded first flag (enable_temporal_mvp_flag) and the coded motion vector; wherein when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is not used, the collocated reference picture index (collocated_ref_idx) is not coded."

VIII. Claim 1 of the appellant's **first auxiliary request** reads as follows (with additions to claim 1 of the **main request** being underlined and deletions being ~~struck-through~~):

"A moving picture coding method for coding a current block to be coded included in a current picture to be coded by inter predictive coding using a motion vector, the moving picture coding method comprising:
assigning one or more reference picture indexes to a first reference picture list and a second reference picture list;
coding (S111) a first flag (enable_temporal_mvp_flag) indicating whether or not temporal motion vector prediction using a temporal motion vector predictor which is a motion vector of a block included in a coded picture different from the current picture is used;
A) when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is used:

coding a reference direction flag
(collocated from l0 flag) which indicates whether the
first reference picture list is used or not;

(a) when the reference direction flag
(collocated from l0 flag) indicates the first reference
picture list is used:

coding (S113) a collocated reference picture index
(collocated_ref_idx) for specifying the coded picture
among a plurality of pictures indicated by the one or
more reference picture indexes in the first reference
picture list;

deriving (S114) a plurality of first motion vector
predictor candidates including (i) a spatial motion
vector predictor which is a motion vector of a block
adjacent to the current block in the current picture
and (ii) the temporal motion vector predictor being
calculated based on a motion vector of the coded
picture which is specified by the collocated reference
picture index (collocated_ref_idx) in the first
reference picture list;

coding (S115) a motion vector used for performing inter
predictive coding on the current block, using one of
the first motion vector predictor candidates; and
outputting the coded first flag

(enable_temporal_mvp_flag), the coded reference
direction flag (collocated from l0 flag), the coded
collocated reference picture index
(collocated_ref_idx), and the coded motion vector;

(b) when the reference direction flag
(collocated from l0 flag) indicates the first reference
picture list is not used:

coding (S113) a collocated reference picture index
(collocated ref idx) for specifying the coded picture
among a plurality of pictures indicated by the one or
more reference picture indexes in the second reference
picture list;

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference picture index (collocated_ref_idx) in the second reference picture list;

coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and outputting the coded first flag, the coded reference direction flag (collocated from 10 flag), the coded collocated reference picture index and the coded motion vector;

B) when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is not used:

deriving (S117) a plurality of second motion vector predictor candidates that do not include the temporal motion vector predictor, the second motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) a replacement vector, as a replacement for the temporal motion vector predictor, which has a value of zero;

coding (S118) a motion vector used for performing inter predictive coding on the current block, using one of the second motion vector predictor candidates; and outputting the coded first flag

(enable_temporal_mvp_flag) and the coded motion vector; wherein when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is not used, the reference direction flag

(collocated from 10 flag) and the collocated reference picture index (collocated_ref_idx) is~~are~~ not coded."

IX. Claim 1 of the appellant's **second auxiliary request** reads as follows (with additions to claim 1 of the **first auxiliary request** being underlined and deletions being ~~struck-through~~):

"A moving picture coding method for coding a current block to be coded included in a current picture to be coded by inter predictive coding using a motion vector, the moving picture coding method comprising:
assigning one or more reference picture indexes to a first reference picture list and a second reference picture list;
deriving a first number of reference pictures in the first reference picture list and a second number of reference pictures in the second reference picture list;
coding (S111) a first flag (enable_temporal_mvp_flag) indicating whether or not temporal motion vector prediction using a temporal motion vector predictor which is a motion vector of a block included in a coded picture different from the current picture is used;
A) when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is used:
coding a reference direction flag (collocated_from_10_flag) which indicates whether the first reference picture list is used or not;
(a) when the reference direction flag (collocated_from_10_flag) indicates the first reference picture list is used and the first number of reference pictures indicates more than or equal to two:
coding (S113) a collocated reference picture index (collocated_ref_idx) for specifying the coded picture

among a plurality of pictures indicated by the one or more reference picture indexes in the first reference picture list;

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference picture index (*collocated_ref_idx*) in the first reference picture list;

coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and outputting the coded first flag

(*enable_temporal_mvp_flag*), the coded reference direction flag (*collocated_from_l0_flag*), the coded collocated reference picture index (*collocated_ref_idx*), and the coded motion vector;

(b) when the reference direction flag (*collocated_from_l0_flag*) indicates the first reference picture list is not used and the second number of reference pictures indicates more than or equal to two:

coding (S113) a collocated reference picture index (*collocated_ref_idx*) for specifying the coded picture among a plurality of pictures indicated by the one or more reference picture indexes in the second reference picture list;

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference

picture index (*collocated_ref_idx*) in the second reference picture list;
coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and outputting the coded first flag, the coded reference direction flag (*collocated_from_l0_flag*), the coded collocated reference picture index and the coded motion vector;

B) when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is not used:
deriving (S117) a plurality of second motion vector predictor candidates that do not include the temporal motion vector predictor, the second motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) a replacement vector, as a replacement for the temporal motion vector predictor, which has a value of zero;
coding (S118) a motion vector used for performing inter predictive coding on the current block, using one of the second motion vector predictor candidates; and outputting the coded first flag (*enable_temporal_mvp_flag*) and the coded motion vector; wherein when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is not used, the reference direction flag (*collocated_from_l0_flag*) and the collocated reference picture index (*collocated_ref_idx*) are not coded; and wherein when the first number of reference pictures indicates less than two or the second number of reference pictures indicates less than two, the collocated reference picture index is not coded."

- X. Claim 1 of the appellant's **third auxiliary request** reads as follows (with additions to claim 1 of the **second auxiliary request** being underlined and deletions being ~~struck through~~):

"A moving picture coding method for coding a current block to be coded included in a current picture to be coded by inter predictive coding using a motion vector, the moving picture coding method comprising:
assigning ~~one or more~~ first reference picture indexes according to a first reference picture list and a second reference picture list; deriving a first number of available reference pictures in ~~the a~~ first reference picture list ~~and a~~;
assigning second reference picture indexes according to a number of available reference pictures in the a second reference picture list;
coding (S111) a first flag (enable_temporal_mvp_flag) indicating whether or not temporal motion vector prediction using a temporal motion vector predictor which is a motion vector of a block included in a coded picture different from the current picture is used;
A) when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is used:
coding a reference direction flag (collocated_from_10_flag) which indicates whether the first reference picture list is used or ~~not~~ the second reference picture list is used;
(a) when the reference direction flag (collocated_from_10_flag) indicates the first reference picture list is used and the ~~first~~ number of available reference pictures ~~indicates in the first reference picture list is more than or equal to two~~ one:
coding (S113) a collocated reference picture index (collocated_ref_idx) for specifying the ~~coded~~ picture

~~among a plurality of pictures indicated by the one or more reference picture indexes to be used for deriving a temporal motion vector in the first reference picture list;~~

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference picture index (`collocated_ref_idx`) in the first reference picture list;

coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and outputting the coded first flag

(`enable_temporal_mvp_flag`), the coded reference direction flag (`collocated_from_l0_flag`), the coded collocated reference picture index

(`collocated_ref_idx`), and the coded motion vector;

(b) when the reference direction flag

(`collocated_from_l0_flag`) indicates the ~~first~~ second reference picture list is ~~not~~ used and the ~~second~~ number of available reference pictures ~~indicates in the second reference picture list is more than or equal to two~~ one:

coding (S113) a collocated reference picture index (`collocated_ref_idx`) for specifying the ~~coded picture among a plurality of pictures indicated by the one or more reference picture indexes to be used for deriving a temporal motion vector in the second reference picture list;~~

deriving (S114) a plurality of first motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block

adjacent to the current block in the current picture and (ii) the temporal motion vector predictor being calculated based on a motion vector of the coded picture which is specified by the collocated reference picture index (*collocated_ref_idx*) in the second reference picture list;

coding (S115) a motion vector used for performing inter predictive coding on the current block, using one of the first motion vector predictor candidates; and outputting the coded first flag, the coded reference direction flag (*collocated_from_10_flag*), the coded collocated reference picture index and the coded motion vector;

B) when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is not used:

deriving (S117) a plurality of second motion vector predictor candidates that do not include the temporal motion vector predictor, the second motion vector predictor candidates including (i) a spatial motion vector predictor which is a motion vector of a block adjacent to the current block in the current picture and (ii) a replacement vector, as a replacement for the temporal motion vector predictor, which has a value of zero;

coding (S118) a motion vector used for performing inter predictive coding on the current block, using one of the second motion vector predictor candidates; and outputting the coded first flag (*enable_temporal_mvp_flag*) and the coded motion vector; wherein when the first flag (*enable_temporal_mvp_flag*) indicates that the temporal motion vector prediction is not used, the reference direction flag (*collocated_from_10_flag*) and the collocated reference picture index (*collocated_ref_idx*) are not coded; and wherein

~~wherein~~ when the first number of available reference pictures ~~indicates~~ in the first reference picture list is less than two and the reference direction flag (collocated from 10 flag) indicates the first reference picture list is used, or when the ~~second~~ number of available reference pictures ~~indicates~~ in the second reference picture list is less than two and the reference direction flag (collocated from 10 flag) indicates the second reference picture list is used, the collocated reference picture index is not coded."

Reasons for the Decision

1. The appeal is admissible.

Main request - inventive step (Articles 52(1) and 56 EPC)

2. Closest prior art

The appellant has not disputed the examining division's finding that document D1 may be regarded as the prior art closest to the subject-matter of claim 1.

The board also concurs with this finding.

Document D1 is specification draft 6 of the HEVC standard.

3. Disclosure of document D1 and distinguishing features

The appellant has not disputed the examining division's finding that document D1 disclosed all the features of claim 1, except for the following features (see points 12.2 and 12.3 of the Reasons for the decision

and the first sentence of section III of the statement of grounds of appeal):

"wherein when the first flag (enable_temporal_mvp_flag) indicates that the temporal motion vector prediction is not used, the collocated reference picture index (collocated_ref_idx) is not coded".

The board also concurs with this finding.

4. Objective technical problem

4.1 According to the examining division, the objective technical problem addressed was *"that the collocated reference picture index is included in the bitstream of D1 even when it is not used in the decoding process"* (see point 12.4 of the Reasons for the decision).

4.2 The appellant argued that the examining division's formulation contained a pointer to the solution and submitted that the objective technical problem should be formulated as *"how to improve compression efficiency"* (see section III.2 of the statement of grounds of appeal).

4.3 The board's view regarding the objective technical problem is set out below.

4.3.1 According to the case law of the boards of appeal, the objective technical problem determines the angle of vision that the skilled person will adopt when considering the remaining prior art in the third step of the problem-and-solution approach. For a fair and objective assessment of inventive step, it is therefore important that the objective technical problem is

formulated neither too narrowly nor too broadly. In most cases, the objective technical problem can be formulated as how to achieve the technical effect. It is usually a problem the skilled person is familiar with because it relates to known drawbacks of the prior art in the technical field of the invention (see Case Law of the Boards of Appeal of the European Patent Office, 10th edition 2022, "Case Law", I.D.4.2: please note that the decision number T 1448/15 cited here is incorrect and should read T 1148/15). The objective technical problem has to be formulated in such a way that it does not contain pointers to the solution or partially anticipate the solution (see Case Law, I.D. 4.2.1).

- 4.3.2 In the case in hand, it is undisputed that a technical effect of the distinguishing features is that coding efficiency is improved by not coding the collocated reference picture index when temporal motion vector prediction is not used (see, for instance, paragraphs [0022] and [0024] of the description of the application as filed).

However, the examining division considered that the distinguishing features also had the technical effect of correcting a mistake in the draft standard (D1) because encoding information that was useless went against the very principle of data compression (see point 12.7 of the Reasons for the decision).

The board concurs with the appellant that the encoding of information that is not used in the draft standard (D1) was not a mistake because it would not have caused a processing error either in the encoding device or in the decoding device (see first two paragraphs of section III.2 of the statement of grounds of appeal).

Instead, it was a sub-optimal implementation with regard to coding efficiency.

Moreover, the board concurs with the appellant that the examining division's formulation of the objective technical problem contains a pointer to the solution by essentially stating that the collocated reference picture index should not be included in the bitstream in D1.

Therefore, in the board's view, the objective technical problem, formulated as how to achieve the technical effect, should be "*how to improve coding efficiency*", which is essentially the same formulation as proposed by the appellant.

5. Obviousness

5.1 The examining division held that the skilled person would have noticed that the coding design in the draft standard (D1) was deficient because information (the collocated reference picture index "*collocated_ref_idx*") was coded which was not used at all in the decoding process. The solution of not coding this unnecessary information would thus have been obvious to the skilled person (see points 12.9 and 12.10 of the Reasons for the decision).

5.2 The appellant's arguments may be summarised as follows.

(1) Document D1 specified a complex standard. The skilled person would not have been aware of where to start to improve the coding efficiency of the standard (see third paragraph on page 6 of the statement of grounds of appeal).

(2) The skilled person would not have noticed any problems when implementing an encoder compliant with D1. In cases in which the collocated reference picture index "*collocated_ref_idx*" was not used by the decoder, the skilled person would have set its value to a default or invalid value. It was a common feature in the field of video coding to initially set parameters to a default value, which was later changed only when needed (see first paragraph on page 7 of the statement of grounds of appeal).

(3) Moreover, document D1 already provided guidance to set the collocated reference picture index "*collocated_ref_idx*" to zero when its value was not needed (see "*When collocated_ref_idx is not present, it is inferred to be equal to 0*" in the paragraph bridging pages 76 and 77 of D1). The skilled person would have followed this guidance and thus would have coded and transmitted the parameter "*collocated_ref_idx*" with a value set to zero in the bitstream, even when the parameter was not needed. This guidance provided teaching leading away from omitting the parameter when it was not needed.

5.3 The board's view on obviousness is set out below.

As pointed out by the examining division (see point 12.9 of the Reasons), document D1 was a draft standard under development. Every participant in the standardisation process was thus invited to check it for mistakes and to propose improvements.

The board concurs with the examining division that since coding efficiency was of utmost importance for the HEVC standard, the skilled person would have

reviewed the draft standard (D1) in search of coding inefficiencies.

The board concurs with the examining division that the skilled person would have noticed that the collocated reference picture index "*collocated_ref_idx*" was coded and inserted into the bitstream when it was not needed, i.e. when the "*enable_temporal_mvp_flag*" indicated that the temporal motion vector prediction was not used (see page 35 of D1). The skilled person would thus have regarded the removal of the collocated reference picture index "*collocated_ref_idx*" as an obvious solution to improve the coding efficiency.

With regard to the appellant's **argument (1)** above that the skilled person would not have noticed the coding inefficiency because document D1 was a complex draft standard, the board does not find it persuasive. Indeed, the skilled person attempting to simulate the draft standard would have been faced with the question of what value the encoder should give to the collocated reference picture index "*collocated_ref_idx*" when the "*enable_temporal_mvp_flag*" indicated that the temporal motion vector prediction was not used. At least at this stage, the skilled person would have noticed that this information was not used by the decoder and thus should not be inserted into the bitstream in order to improve the coding efficiency. As pointed out by the examining division, encoding information that is useless goes against the very principle of data compression (see point 12.7 of the Reasons for the decision).

With regard to the appellant's **arguments (2) and (3)** above that the skilled person would have set the parameter "*collocated_ref_idx*" to zero instead of omitting it from the transmission, the board does not

find these arguments persuasive for the reasons set out below.

It would have been obvious to the skilled person that not transmitting a parameter which is not needed reduced the number of bits inserted into the bitstream (and thus improved coding efficiency) compared with transmitting the parameter with a default or invalid value, even if this value was zero. Moreover, the sentence "*When `collocated_ref_idx` is not present, it is inferred to be equal to 0*" in the paragraph bridging pages 76 and 77 of D1 does not provide guidance for **the encoder** to set the value of "`collocated_ref_idx`" to zero when this parameter is not needed. Indeed, this sentence refers to **the decoder**, not the encoder, and essentially states that when the encoder omits this parameter, the decoder assumes it to have a value equal to zero. Hence, contrary to the appellant's assertion, this sentence teaches that this parameter may be omitted by the encoder (the method of claim 1 is an encoding method). In any case, the quoted sentence is of little relevance to claim 1 because it concerns a different situation in which the collocated reference picture index is not needed because there is only a single picture in the index (see page 35, lines 32 and 33 of D1).

6. Conclusion on inventive step for the main request

For the above reasons, the board considers that the coding method of claim 1 of the main request does not involve an inventive step in view of document D1.

7. Conclusion on the main request

Since the subject-matter of claim 1 does not involve an inventive step, the main request is not allowable.

First auxiliary request - inventive step (Articles 52(1) and 56 EPC)

8. Claim 1 of the first auxiliary request differs from claim 1 of the main request essentially in that

(a) a reference direction flag ("*collocated_from_10_flag*") is used to identify whether the coded picture is in a first or second reference picture list and

(b) the reference direction flag is not coded when the first flag ("*enable_temporal_mvp_flag*") indicates that the temporal motion vector prediction is not used.

9. The board concurs with the examining division (see points 13.1 and 13.2 of the Reasons for the decision) that additional feature (a) is disclosed in D1 (see penultimate paragraph on page 76) and that feature (b) is obvious because, when the "*enable_temporal_mvp_flag*" indicates that the temporal motion vector prediction is not used, the skilled person would not code the reference direction flag "*collocated_from_10_flag*" for the same reasons as they would not code the collocated reference picture index "*collocated_ref_idx*".

10. The appellant's arguments regarding the reference direction flag "*collocated_from_10_flag*" were essentially the same as those regarding the collocated reference picture index "*collocated_ref_idx*" submitted for the main request.

11. The board does not find these arguments persuasive for essentially the same reasons as for the main request.
12. The appellant also submitted the following argument for the first time on appeal during the oral proceedings.

The flag "*enable_temporal_mvp_flag*" disclosed in D1 (corresponding to the first flag in claim 1) had already been proposed at the Geneva meeting of the standardisation committee at the end of November 2011, i.e. approximately three months before the priority date of the current application on 6 March 2012. The fact that no proposal to omit the collocated reference picture index "*collocated_ref_idx*" and/or the reference direction flag "*collocated_from_10_flag*" had been submitted to the standardisation committee during that three-month period had to be viewed as an indication that such a solution was not obvious.

13. In the board's view, the fact that the solution in claim 1 of the first auxiliary request had not been proposed to the standardisation committee within a relatively short period of time (three months), even if true, is not sufficient to conclude that the method of claim 1 involves an inventive step. The relatively short period of time of three months cannot be equated to a long-felt need and is thus, at best, only a weak secondary indicator.
14. Conclusion on inventive step for the first auxiliary request

For the above reasons, the board considers that the coding method of claim 1 of the first auxiliary request

does not involve an inventive step in view of document D1.

15. Conclusion on the first auxiliary request

Since the subject-matter of claim 1 does not involve an inventive step, the first auxiliary request is not allowable.

Second auxiliary request - inventive step (Articles 52(1) and 56 EPC)

16. Claim 1 of the second auxiliary request differs from claim 1 of the first auxiliary request in that a first number of reference pictures in the first reference picture list and a second number of reference pictures in the second reference picture list are used for deriving the syntax relating to the collocated reference picture index, wherein the index is not coded if the number of reference pictures is less than 2.
17. The board concurs with the examining division (see point 14.1 of the Reasons for the decision) that the same parameters ("*num_ref_idx_l0_active_minus1*", "*num_ref_idx_l1_active_minus1*") are also used in D1 in a completely analogous manner (see the identical syntax on page 35 of D1 and in Figure 19B of the application as filed). The two reference picture lists in D1 (see points 3.90 and 3.91 of D1) also have a number of reference pictures each.
18. The appellant did not submit any arguments going beyond those already submitted regarding the main request and first auxiliary request.

19. Conclusion on inventive step for the second auxiliary request

For the above reasons, the board came to the conclusion that the coding method of claim 1 of the second auxiliary request does not involve an inventive step in view of document D1.

20. Conclusion on the second auxiliary request

Since the subject-matter of claim 1 does not involve an inventive step, the second auxiliary request is not allowable.

Third auxiliary request - inventive step (Articles 52(1) and 56 EPC)

21. Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary request essentially in that

- the reference picture indexes are assigned "*according to a number of available reference pictures*" in the corresponding (first or second) reference picture list and
- the reference direction flag indicates whether the first or the second reference picture list is used.

22. The board concurs with the examining division (see points 15.1 to 15.3 of the Reasons for the decision) that the first feature is a trivial assignment of indices {0, 1, 2, ... , n-1} to n reference pictures and that the second feature is a mere clarification without a change in scope.

23. The appellant did not submit any arguments going beyond those already submitted regarding the higher-ranking requests.

24. Conclusion on inventive step for the third auxiliary request

For the above reasons, the board came to the conclusion that the coding method of claim 1 of the third auxiliary request does not involve an inventive step in view of document D1.

25. Conclusion on the third auxiliary request

Since the subject-matter of claim 1 does not involve an inventive step, the third auxiliary request is not allowable.

Obiter dictum - right to be heard - Article 113(1) EPC

26. The appellant mentioned that two of the examining division's arguments in the Reasons for the decision had not been presented at the oral proceedings (see fourth and last paragraphs on page 6 of the statement of grounds of appeal); however, the appellant neither alleged that a *substantial* procedural violation had been committed nor requested reimbursement of the appeal fee.

27. The board notes that the two arguments in question are closely related to the other arguments used by the examining division and are not decisive for the outcome of the decision under appeal. The first argument in point 12.8 of the Reasons for the decision is an alternative formulation of the objective technical problem, which is not used in the examining division's

logical chain of reasoning. The second argument in point 12.9 of the Reasons for the decision is merely an example (see the second sentence starting with "*For example*").

28. For the above reasons, the board considers that even if the appellant were correct that the above two arguments were not raised during the oral proceedings, this would not amount to a substantial procedural violation (see Case Law, V.A.11.6.2) which could justify remittal of the case to the department of first instance (Article 11 RPBA and Article 111(1) EPC) or reimbursement of the appeal fee (Rule 103 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Boelicke

B. Le Guen

Decision electronically authenticated