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Datasheet for the decision of 24 October 2023

Case Number: T 2634/19 - 3.5.04

Application Number: 16162352.5

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Language of the proceedings: EN

Title of invention:
SYSTEMS AND METHODS FOR VIDEO PLAY CONTROL

Applicant:
Hangzhou Hikvision Digital Technology Co., Ltd.

Headword:

Relevant legal provisions:
EPC Art. 84, 123(2)
RPBA 2020 Art. 13(1), 13(2)

Keyword:
Main request - claims - clarity (no)
Auxiliary requests I and II - amendments - added subject-matter (yes)
Auxiliary requests Ibis, IIbis and IIter - amendment to appeal case - amendment overcomes issues raised (no)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
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Beschwerdekammern

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Case Number: T 2634/19 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 24 October 2023

Appellant: (Applicant)	Hangzhou Hikvision Digital Technology Co., Ltd. No. 555 Qianmo Road Binjiang District Hangzhou 310052 (CN)
Representative:	Goddar, Heinz J. Boehmert & Boehmert Pettenkoferstr. 22 80336 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 18 March 2019 refusing European patent application No. 16162352.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	B. Willems
Members:	A. Seeger
	B. Müller

Summary of Facts and Submissions

I. The appeal is against the examining division's decision to refuse European patent application No. 16 162 352.5, published as EP 3 073 754 A1.

II. The decision under appeal was based on the grounds that claim 1 of the main request and the then auxiliary request was not clear (Article 84 EPC) and that claim 1 of the then auxiliary request did not meet the requirements of Article 123(2) EPC.

III. The applicant (appellant) filed notice of appeal. With the statement of grounds of appeal, the appellant filed claims according to a main request and auxiliary requests I and II. According to the appellant, the claims of the main request were identical to the claims of the main request on which the decision under appeal was based. The appellant indicated a basis in the application as filed for the claimed subject-matter and provided arguments to support its opinion that the claims met the requirements of Article 84 EPC.

IV. The appellant was summoned to oral proceedings. In a communication under Article 15(1) RPBA 2020, the board gave the following preliminary opinion.

(a) Claim 1 of the main request was not clear (Article 84 EPC).
(b) Claim 1 of auxiliary requests I and II did not meet the requirements of Article 123(2) EPC.
(c) Claim 1 of auxiliary request II was not clear (Article 84 EPC).

V. By letter dated 22 September 2023, the appellant filed amended claims according to new auxiliary requests Ibis, IIbis and IIter and submitted arguments to support its opinion that the claims of all requests on file met the requirements of Articles 84 and 123(2) EPC.

VI. The board held oral proceedings on 24 October 2023.

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 filed with the statement of grounds of appeal or, alternatively, auxiliary request I filed with the statement of grounds of appeal, or auxiliary request Ibis filed with the letter dated 22 September 2023, or auxiliary request II filed with the statement of grounds of appeal, or auxiliary request IIbis or IIter filed with the letter dated 22 September 2023.

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

VII. Claim 1 of the main request reads as follows:

"A method for controlling video display, comprising:
determining, by one or more processors, whether a coding frame extracted from a video coding stream is an I Frame (S120);
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame after the I Frame (S210); and

controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame comprises:
calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;
if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

VIII. Claim 1 of auxiliary request I reads as follows (amendments compared to claim 1 of the main request are underlined):

"A method for controlling video display, comprising:
determining, by one or more processors, whether a coding frame extracted from a video coding stream is an I Frame (S120);
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame after the I Frame (S210);
<u>wherein an adjacent coding frame after the I Frame is a refreshment P Frame; wherein a Refreshment P Frame is a</u>

forward prediction reference frame; wherein the timestamps are receiving timestamps; and
controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame comprises:
calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;
if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

IX. Claim 1 of auxiliary request Ibis reads as follows (amendments compared to claim 1 of the main request are underlined):

"A method for controlling video display, comprising:
determining, by one or more processors, whether a coding frame extracted from a video coding stream is an I Frame (S120);
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame after the I Frame (S210);
wherein an adjacent coding frame after the I Frame is a

refreshment P Frame; wherein a Refreshment P Frame is a forward prediction reference frame; and
controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame comprises:
calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame after the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;
if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

X. Claim 1 of auxiliary request II reads as follows (features added compared to claim 1 of the main request are underlined; deleted features are ~~struck through~~):

"A method for controlling video display, comprising:
determining, by one or more processors, whether a coding frame including a serial number extracted from a video coding stream in which the serial numbers of adjacent coding frames are continuous under normal conditions is an I Frame (S120);
wherein under normal conditions, the timestamp of the I frame is smaller than the timestamps of other coding

frames in the group of picture that contains the I frame;
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame following according to the serial number~~after~~ the I Frame (S210); wherein the timestamps are receiving timestamps; and
controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame comprises:
calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;
if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

XI. Claim 1 of auxiliary request IIbis reads as follows (features added compared to claim 1 of the main request are underlined; deleted features are ~~struck through~~):

"A method for controlling video display, comprising:

determining, by one or more processors, whether a coding frame including a serial number extracted from a video coding stream is an I Frame (S120),
wherein the serial numbers of the I frame (S120) and adjacent coding frames in form of refreshment P frames are continuous under normal conditions; wherein further under normal conditions, when the video coding stream is displayed according to the time stamp and serial numbers of two adjacent frames are continuous, the timestamp of the I frame is smaller than the timestamps of other coding frames in the group of picture that contains the I frame;
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame following according to the serial number~~after~~ the I Frame (S210) under normal conditions; wherein the timestamps are receiving timestamps; and
controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame comprises:
calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;

if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

XII. Claim 1 of auxiliary request IIIter reads as follows (features added compared to claim 1 of the main request are underlined; deleted features are ~~struck through~~):

"A method for controlling video display, comprising:
determining, by one or more processors, whether a coding frame including a serial number extracted from a video coding stream is an I Frame (S120),
wherein the serial numbers of the I frame (S120) and adjacent coding frames in form of refreshment P frames are continuous under normal conditions; wherein further under normal conditions, when the video coding stream is displayed according to the time stamp and when serial numbers of two adjacent frames are continuous, the timestamp of the I frame is smaller than the timestamps of other coding frames in the group of picture that contains the I frame;
if the coding frame extracted from the video coding stream is an I Frame, acquiring, by the one or more processors, a timestamp of the I Frame and a timestamp of an adjacent coding frame following according to the serial number~~after~~ the I Frame (S210) under normal conditions; and
controlling, by the one or more processors, display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S230, S240, S320, S420);
wherein controlling the display of the I Frame based on the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame comprises:

calculating a difference between the timestamp of the I Frame and the timestamp of the adjacent coding frame following~~after~~ the I Frame (S520); and
controlling the display of the I Frame based on the difference (S550);
wherein controlling the display of the I Frame based on the difference comprises:
determining whether the difference exceeds a preset threshold;
if the difference exceeds the preset threshold, not displaying the I Frame; and
if the difference does not exceed the preset threshold, displaying the I Frame."

XIII. The appellant's arguments relevant to the present decision may be summarised as follows.

(a) The person skilled in the art would have taken from the original application documents, in particular the description paragraphs [0052], [0054] and [0057] as originally filed, based on their common general knowledge, that the time stamp referred to in claim 1 of all requests was a receiving time stamp.

(b) Even an interpretation according to which the time stamp could be a decoding time stamp or a presentation time stamp would not lead to uncertainty for the person skilled in the art but only to a broader scope of protection. Also in this case, it was undoubtedly possible to carry out the claimed subject-matter.

Reasons for the Decision

1. The appeal is admissible.

2. Main request - clarity (Article 84 EPC)

2.1 Claims must be clear in themselves when read by the person skilled in the art, without any reference to the content of the description. The meaning of the essential features should be clear for the person skilled in the art from the wording of the claim alone (see Case Law of the Boards of Appeal of the European Patent Office, 10th edition, 2022, "Case Law", II.A.3.1).

2.2 Claim 1 comprises the features of "*a timestamp of the I frame*" and "*a timestamp of an adjacent coding frame after the I frame*".

2.3 In these features, it is not clear what kind of "*timestamp*" is meant, namely:
(a) a decoding time stamp (indicating when a frame should be decoded)
(b) a presentation time stamp (indicating when a frame should be displayed)
(c) a receiving time stamp (indicating when a frame has been received)

2.4 The appellant argued that the person skilled in the art would have taken from the original application documents that the time stamps referred to in claim 1 were receiving time stamps, i.e. an indication when a frame has been received (see point XIII.(a) above).

The appellant submitted that decoding time stamps were obviously irrelevant for controlling the display of frames and their use could be ruled out.

The appellant submitted further that presentation time stamps were set up during encoding and could not be subject to changes. Hence, the time stamps could not be presentation time stamps.

The appellant concluded that the time stamps had to be receiving time stamps because only those could be subject to unexpected differences due to transmission errors or the like.

2.5 The board is not convinced by these arguments for the following reasons. If due to transmission errors several frames following the I frame do not arrive at a receiver, the next arriving frame may have a decoding/ presentation time stamp significantly larger than the decoding/presentation time stamp of the I frame. Hence, it is not excluded that a difference between these two time stamps is used to identify a length of a gap between the I frame and the next available frame. Based on the length of this gap, it may be decided whether to display the I frame.

Therefore, the board is not convinced that the time stamps necessarily have to be receiving time stamps.

2.6 The appellant further argued that an interpretation according to which the time stamp could be a decoding time stamp or a presentation time stamp would not lead to uncertainty for the person skilled in the art but only to a broader scope of protection. Also, if the time stamp was a decoding/presentation time stamp, it was undoubtedly possible to carry out the claimed subject-matter by using a receiving time stamp or a decoding/presentation time stamp (see point XIII.(b) above).

2.7 The board is not convinced by this argument for the following reasons.

The board finds it helpful to consider the following scenario. Coding frames of a video coding stream are transmitted. After the first I frame is transmitted, there is a temporary interruption of the transmission which is resolved later on. Thus, all coding frames arrive in sequence at a receiver, but the frames after the I frame arrive with a delay.

If in this scenario the time stamps were coding time stamps or presentation time stamps, the difference between them would simply be the regular difference between subsequent frames and would not exceed the preset threshold. Hence, according to the method of claim 1, the first I frame would be displayed.

However, if in this scenario the time stamps were receiving time stamps, the difference between the time stamp of the first I frame and the time stamp of the next frame received after the temporary interruption would be as large as the duration of the temporary interruption. Hence, according to the method of claim 1, the first I frame would not be displayed if the preset threshold were smaller than the duration of the temporary interruption.

Hence, the method of claim 1 would lead to opposite outcomes depending on whether the feature of a "*timestamp*" in claim 1 is regarded as a coding/ presentation time stamp or as a receiving time stamp.

Therefore, without specifying whether a "*timestamp*" in claim 1 is a coding time stamp, a presentation time stamp or a receiving time stamp, the matter for which

protection is sought by claim 1 is not clear. As a consequence, claim 1 does not meet the requirements of Article 84 EPC.

3. Auxiliary requests I and II - added subject-matter (Article 123(2) EPC)

3.1 According to the consistent interpretation of Article 123(2) EPC by the Enlarged Board of Appeal, any amendment to the parts of a European patent application relating to the disclosure can only be made within the limits of what the person skilled in the art would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole disclosure of the description, claims and drawings of the application as filed (see Case Law, II.E.1.1).

3.2 Claim 1 of auxiliary requests I and II contains the amended feature that "*the timestamps are receiving timestamps*".

3.3 The appellant argued that the person skilled in the art would clearly and unambiguously take from the disclosure in paragraphs [0052], [0054] and [0057] as originally filed, based on their common general knowledge, that the time stamp referred to in claim 1 of auxiliary request I was a receiving time stamp (see XIII.(a) above).

The appellant referred to the passage in paragraph [0052], which stated that "*if a sending end (e.g., a sending terminal) of the coding stream does not send positioning information to a receiving end (or a decoding end), it is possible to cause great*

difference between timestamps of the I frame and the Pn1 frame (a refreshment P frame)".

The appellant also referred to paragraph [0057], which stated that "*display control command refers to positioning information that includes a timestamp of the target frame*".

The appellant argued that if no positioning information including time stamps was sent, the difference between time stamps mentioned in paragraph [0052] could only be a difference between receiving time stamps.

Furthermore, the time stamps mentioned in paragraph [0052] had to be receiving time stamps because only those could be subject to unexpected differences due to transmission errors or the like.

3.4 The board is not convinced by these arguments for the following reasons.

Firstly, unexpected differences can also occur between coding or presentation time stamps if coding frames do not arrive at a receiver due to erasures on a transmission channel (see point 2.5 above).

Secondly, paragraph [0057] discloses that "*the frame information includes, but is not limited to, timestamp, serial number, relevant tag, display control command, display configuration information, etc. For example, a timestamp is a character sequence and can uniquely identify a certain time. Each frame of data has the timestamp*".

Hence, from the statement that no positioning information, i.e. a part of the display control

information, is transmitted, it cannot be directly and unambiguously derived that no time stamp is transmitted and thus the difference between time stamps mentioned in paragraph [0052] could only be a difference between receiving time stamps. This is also corroborated by the further disclosure in paragraph [0057]: "*The positioning information is used for identifying the positioned target information without affecting the timestamp of the coding frame*".

Thirdly, paragraph [0054] of the description sets out: "*In a coding stream generated using the video encoding method described herein, a timestamp of an I frame is Ti, and a timestamp of a refreshment P frame (e.g., Pn1 as shown in Figure 3) is Tpn1. Then, the difference between the timestamps is Td=Tpn1-Ti. Theoretically, the maximum Td can be close to the duration of one GOP*". This passage of the description implies that time stamps exist when a coding stream is generated using the described encoding method. In other words, the time stamps exist before such a coding stream is transmitted and received. This is in contradiction with the interpretation that a time stamp is a receiving time stamp.

3.5 In view of the above, the board is not convinced that the person skilled in the art would directly and unambiguously derive from the application as originally filed that time stamps are "*receiving timestamps*".

3.6 As a consequence, claim 1 of auxiliary requests I and II does not meet the requirements of Article 123(2) EPC.

4. Auxiliary requests Ibis, IIbis and IIter - admittance (Article 13(2) RPBA 2020)

4.1 Auxiliary requests Ibis, IIbis and IIter were filed after notification of the summons to oral proceedings. These auxiliary requests are therefore amendments within the meaning of Article 13(2) RPBA 2020.

4.2 Under Article 13(2) RPBA 2020, any amendment to a party's appeal case made after notification of a summons to oral proceedings is, in principle, not to be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons.

Article 13(2) RPBA 2020 imposes the most stringent limitations on appeal submissions made at an advanced stage of the proceedings (see Supplementary publication 2, OJ EPO 2020, Explanatory remarks on Article 13(2), first paragraph, second sentence).

When exercising its discretion under Article 13(2) RPBA 2020, the board may also rely on criteria set out in Article 13(1) RPBA 2020 (see *ibid.*, Explanatory remarks on Article 13(2), fourth paragraph).

Under Article 13(1) RPBA 2020, the board is to exercise its discretion in view of, inter alia, whether the appellant has demonstrated that any such amendment, prima facie, overcomes the issues raised by the board.

4.3 Claim 1 of auxiliary requests Ibis and IIter contains the same features as objected to in point 2. above for the main request. Hence, these auxiliary requests do not, prima facie, overcome the objection under Article 84 EPC raised by the board against claim 1 of the main request.

Claim 1 of auxiliary requests IIbis contains the same feature as objected to in point 3. above for auxiliary requests I and II. Hence, auxiliary request IIbis does not, prima facie, overcome the objection under Article 123(2) EPC raised by the board against claim 1 of auxiliary requests I and II.

The appellant has not put forward any arguments beyond those provided for the main request and auxiliary requests I and II.

4.4 Therefore, the board exercised its discretion under Article 13(2) RPBA 2020, taking into account the criteria set out in Article 13(1) RPBA 2020, in deciding not to admit auxiliary requests Ibis, IIbis and IIter into the appeal proceedings.

5. Conclusion

The main request is not allowable because claim 1 of this request is not clear (Article 84 EPC). Auxiliary requests I and II are not allowable because claim 1 of each of these requests does not meet the requirements of Article 123(2) EPC. Auxiliary requests Ibis, IIbis and IIter were not admitted into the appeal proceedings under Article 13(2) RPBA 2020 taking the criteria set out in Article 13(1) RPBA 2020 into account. Since none of the appellant's requests is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Boelicke B. Willems

Decision electronically authenticated