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Datasheet for the decision of 27 September 2010

Case Number: T 1604/06 - 3.5.04

Application Number: 98900693.7

Publication Number: 0898427

IPC: H04N 7/50

Language of the proceedings: EN

Title of invention:
Moving image estimating system

Applicant:
MITSUBISHI DENKI KABUSHIKI KAISHA

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)
RPBA Art. 12(4), 13(1)

Relevant legal provisions (EPC 1973):
EPC Art. 84

Keyword:
"Amendments - added subject-matter (yes)"
"Claims - support by description (no)"
"Admissibility of requests filed in response to the board's communication (no)"
"Admissibility of requests filed in oral proceedings (no)"

Decisions cited:
T 0409/91, T 0484/92

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1604/06 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 27 September 2010

Appellant: MITSUBISHI DENKI KABUSHIKI KAISHA
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 14 March 2006 refusing European application No. 98900693.7 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: F. Edlinger
Members: A. Dumont
B. Müller

Summary of Facts and Submissions

I. The appeal is directed against the decision by the examining division to refuse European patent application 98 900 693.7, published as EP 0 898 427 A1.

II. The examining division refused the application *inter alia* on the ground that claim 1 of the main request was not supported by the description, contrary to Article 84 EPC 1973.

III. With the statement of grounds of appeal the appellant filed a new claim 1 of a main request, a first and a second auxiliary request, respectively, with claim 1 of the second auxiliary request corresponding to claim 1 of the main request of the decision under appeal.

IV. In an annex to the summons to oral proceedings the board *inter alia* expressed its provisional agreement with the examining division as to the objections under Article 84 EPC 1973 regarding claim 1 of the second auxiliary request, and also raised the additional question of added subject-matter under Article 123(2) EPC with respect to the features objected to under Article 84 EPC 1973. Concerning the main request and the first auxiliary request, the board further raised the question of their admissibility, since features had been removed with respect to claim 1 of the main request on which the decision under appeal was based.

V. With a letter dated 27 August 2010 the appellant filed new claims 1 of a main request and of a first and a second auxiliary request, with claim 1 of the second auxiliary request being maintained unamended.

VI. In the oral proceedings before the board on 27 September 2010 the appellant filed claim 1 of a third and a fourth auxiliary request.

VII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claim 1 of the main request or, alternatively, of the first to fourth auxiliary requests, in that order, the description underlying the decision under appeal or amended as necessary and the drawings underlying the decision under appeal. Should the board not be willing to take a final decision, the case should be remitted to the examining division.

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

"A moving picture prediction system for predicting a moving picture to be implemented in at least one of an encoder and a decoder, the moving picture prediction system comprising:

a plurality of reference picture memory areas, each area storing picture data of a reference picture to be used for prediction; and a prediction picture generation section including,
a motion compensator for receiving a parameter representing a motion of a picture to be predicted and a reference memory indicator signal representing the reference picture memory area to be used for prediction, and for generating a predicted picture by using the reference picture stored in the reference picture memory area indicated by the reference memory indicator signal; and

a memory update unit for controlling the number of the reference pictures to be stored in the reference picture memory areas based upon a given control signal."

IX. Claim 1 of the first auxiliary request reads like claim 1 of the main request, with the last paragraph replaced by:

"a memory update unit for controlling the number of the reference pictures to be stored in the reference picture memory areas by increasing or decreasing the number of reference picture memory areas based upon a given control signal."

X. Claim 1 of the second auxiliary request reads as follows:

"A moving picture prediction system for predicting a moving picture to be implemented in at least one of an encoder and a decoder, the moving picture prediction system comprising:

a plurality of reference picture memory areas, each memory area for storing picture data of one reference picture each to be used for prediction; and

a prediction picture generation section including a motion compensator for receiving a parameter representing a motion of a picture to be predicted, and for generating a predicted picture by using the reference picture data stored in the plurality of the reference picture memory areas and

a memory update unit for updating the picture data in at least one of the plurality of memory areas and for controlling the number of reference picture memory areas by decreasing the number of reference picture memory areas by releasing a memory area based upon a given control signal."

XI. Claim 1 of the third auxiliary request reads as follows:

"A moving picture prediction system for predicting a moving picture to be implemented in at least one of an encoder and a decoder, the moving picture prediction system comprising:

a plurality of reference memories containing a plurality of reference picture memory areas, each area storing picture data of a reference picture to be used for prediction; and

a prediction picture generation section including,
a motion compensator for receiving a parameter representing a motion of a picture to be predicted and a reference memory indicator signal representing the reference memory to be used for prediction, and for generating a predicted picture by using the reference picture stored in the reference picture memory area in the reference memory indicated by the reference memory indicator signal; and
a memory update unit for controlling the number of the reference pictures to be stored in the reference picture memory areas based upon a given control signal."

XII. Claim 1 of the fourth auxiliary request reads as follows:

"A moving picture prediction system for predicting a moving picture to be implemented in at least one of an encoder and a decoder, the moving picture prediction system comprising:

a plurality of reference memories containing a plurality of reference picture memory areas, each memory area storing picture data of one reference picture each to be used for prediction; and

a prediction picture generation section including a motion compensator for receiving a parameter representing a motion of a picture to be predicted and a reference memory indicator signal representing the reference memory to be used for prediction, and for generating a predicted picture by using the picture data stored in the plurality of the reference picture memory areas in the reference memory indicated by the reference memory indicator signal, and
a memory update unit for updating the picture data in at least one of the plurality of memory areas and for controlling the number of reference picture memory areas by decreasing the number of reference picture memory areas by releasing a memory area from the areas of use based upon a given control signal."

XIII. The reasoning in the decision under appeal as to lack of support by the description for claim 1 of the former main request (now the second auxiliary request) may be summarised as follows.

The teaching as to how the invention is to be carried out is given solely in embodiment 5, where additional reference pictures are stored in a memory at a scene change (memory expansion), and where memory areas for reference pictures rarely used for prediction are released (memory contraction). Merely decreasing the number of memory areas based upon "any given control signal" does not solve the technical problem of enhancing prediction efficiency and effectively using memory resources mentioned in the description, as reference pictures significant for prediction may be removed in such a case. Thus claim 1 lacks features essential to the definition of the invention.

XIV. The argumentation by the appellant may be summarised as follows.

The general inventive concept lies in adaptively and flexibly controlling the number of stored reference pictures to be used for motion picture prediction. This concept has become standard H.264 and departs from standard MPEG-4, where a predefined number of reference pictures is stored and used.

This inventive concept is mentioned in paragraph [0044] of the application as published. It is further clearly described in relation to embodiment 5, which discloses a dynamic allocation of memory areas and a flexible variation of the number of memories in response to different conditions (see in particular paragraphs [0155] and [0148]). This was acknowledged by the examining division not raising an objection under Article 123(2) EPC.

A skilled person would have recognised that the general concept may be claimed by reciting a control, or variation, of the number of reference picture areas based upon a given control signal, and that an exact implementation as in embodiment 5 is not essential. The skilled person would also easily find an implementation with a suitable control signal to vary the number of memory areas and thus the number of reference pictures. Thus a broad claim directed to this general concept complies with Article 84 EPC 1973 (see also decisions T 484/92 and T 409/91) as well as with Article 123(2) EPC.

As to the admissibility of the amended claims filed during the appeal proceedings, they are *bona fide* attempts either to overcome the objections raised by the board in its communication accompanying the summons to oral proceedings or to address the reasons in the decision under appeal. In particular, claim 1 of the main request and the first auxiliary request contains the additional feature of a reference memory indicator signal limiting the scope compared to the main request on which the decision under appeal was based.

Reasons for the Decision

1. The appeal is admissible.

2. Second auxiliary request

2.1 It is established jurisprudence that proceedings before the boards of appeal in *ex parte* cases are primarily concerned with examining the contested decision

(G 10/93, OJ 1995, 172, point 4). Therefore, and in view of the reasons set out below, the board considers it appropriate to deal first with the second auxiliary request, which corresponds to the main request refused by the examining division.

2.2 Claim 1 is directed to a moving picture prediction system where the number of reference picture areas is controlled by decreasing the number based upon a "given control signal". There is no explicit disclosure in the application as filed for this wording in the context of the last feature. Claim 7 and page 17, lines 15 to 19, of the application as filed disclosed that the predicted picture is generated "through a change of either one of a number and a size of the plurality of memories in response to a change in the moving picture at each time instance". The concept as now claimed is implemented in "Embodiment 5" on pages 54 to 57 of the description as originally filed (corresponding to paragraphs [0148] to [0158] in the application as published).

2.3 The board agrees with the appellant that, in the context of present claim 1, controlling or varying memory areas required for prediction (see the sentence bridging pages 56 and 57) corresponds to varying the number of memories used for storing reference pictures (see in particular page 17, lines 15 to 19 and page 54, lines 7 to 12).

2.4 Embodiment 5 relates to a modification of the memory update unit according to figure 1, in which a plurality of memories (for instance a, b and c) are used for storing picture segments of different significance or

characteristics (see page 27, line 22 to page 28, line 5), which memories may be updated at different time intervals (regular or adaptive periods of time for different memory areas; see for instance page 33, line 4 to page 34, line 10). This particular update behaviour contrasts with the prior art acknowledged in the description, which adopts a rigid update scheme (see page 11, lines 3 to 6 and page 13, line 22 to page 14, line 2). The variation (in each of the memories a, b and c) is consistently associated in embodiment 5 with particular circumstances resulting from a substantial change in the moving picture (see in particular "change in a video object at each time instant" on page 54, lines 7 to 12; and "picture substantially different from the past record ... due to a scene change or the like" on page 54, lines 20 to 22), which also finds a correspondence on page 17, lines 15 to 19 ("change in the moving picture at each time instance").

2.5 These particular circumstances will lead to a different frequency of use for different areas in the memories (a, b and c) and to a different update behaviour. For instance, memory areas containing a reference picture rarely used for prediction will be contracted based upon a corresponding indicator signal (79 in figure 14) (see page 56, lines 17 to 21), which is reflected by the feature "decreasing the number of reference picture memory areas by releasing a memory area" in claim 1.

2.6 According to embodiment 5, this contraction (as well as the complementary expansion) is consistently based on an activity indicator reflecting the frequency of use (see page 55, lines 7 to 18 and page 56, lines 7 to 21).

Therefore, the skilled person cannot derive a clear and unambiguous disclosure from the application as filed that a variation, in particular a controlled decrease, in the number of reference picture memory areas could be based upon an unspecified "given control signal", regardless of memory activity or frequency of use.

2.7 The appellant argues that the sentence bridging pages 56 and 57 ("In addition, the dynamic allocation of memory areas required for prediction contributes to the enhancement of prediction efficiency and the effective use of memory resources") provides a basis for a broad definition of a "given control signal" in claim 1 because it does not associate dynamic allocation of memory areas with any criterion. However, this passage merely refers to an advantage of dynamic allocation and does not disclose how controlling the number of reference picture areas is carried out. The board could not find any hint in the application as filed which would have led the skilled person to abstract this sentence from its context, which is that of embodiment 5, to derive the feature that controlling the number of reference picture areas may be based upon an unspecified "given control signal" (or "any given control signal", as per the wording in the decision under appeal).

2.8 The appellant further argues that the introductory paragraph on page 54, lines 7 to 12, of embodiment 5 ("...where the number of memories... can be varied flexibly in response to a change in a video object at each time instance") also provides a basis for the formulation in claim 1. The board notes that this sentence expressly refers to the circumstance of a

change in a video object. The subsequent paragraphs describe how the number of memories can be varied flexibly by expansion or contraction, when a video object changes. In the board's view, the skilled person would also not have read this paragraph, in particular a phrase member thereof, out of its context, which is that of embodiment 5.

2.9 The appellant further referred to decisions T 484/92 and T 409/91. T 484/92 states that it is very difficult to formulate any general rule covering all situations and determining whether in any given case the claims of a patent may contain a generalisation of the particular disclosure (see point 3.2 of the reasons), in a case where there were alternative ways of performing the invention at the disposal of the person skilled in the art, which would be apparent upon reading the description, based on his common general knowledge (see point 3.6 of the reasons). Furthermore, T 409/91 states that the patent monopoly should be justified by the technical contribution to the art and the definitions in the claims should essentially correspond to the scope of the invention as disclosed in the description (see point 3.3 of the reasons).

The above decisions relate to the question whether a claim was supported by the description. The board nevertheless agrees that a patent application should be read by the person skilled in the art on the basis of common general knowledge. However, the board does not see in the particulars of these two decisions, or in the general considerations they set out, any reasons to find that the examining division misinterpreted Article 84 EPC 1973 and should have come to a different

conclusion. This applies *a fortiori* to the issue in the present case under Article 123(2) EPC since the relevant criterion here is not support by the description, but direct and unambiguous disclosure in the application as filed.

2.10 In conclusion, the board considers that a skilled person having the required common general knowledge could not directly and unambiguously derive from the application as filed the feature of "controlling the number of reference picture memory areas by decreasing the number of reference picture memory areas by releasing a memory area based upon a given control signal" according to claim 1. This feature constitutes therefore a generalisation of the original disclosure, in particular of embodiment 5, which infringes Article 123(2) EPC. Claim 1 is thus also not supported by the description and also infringes Article 84 EPC 1973, as found in the decision under appeal.

2.11 As a result, the second auxiliary request is not allowable.

3. Main request and first auxiliary request

3.1 These requests were filed in response to the communication accompanying the summons to oral proceedings issued by the board.

3.2 Essentially, claim 1 of these requests is not limited to an update unit for controlling the number of reference picture memory areas by decreasing the number. Moreover these claims use a different definition of "picture data of **a** reference picture" instead of

"picture data of **one** reference picture" (emphasis by the board). Additionally, they set out that the motion compensator receives a "reference memory indicator signal representing the reference picture memory area to be used for prediction". This feature limits the scope of the motion compensator and is derivable from page 30, lines 4 to 24, as originally filed. The indicator signal (25 in figure 3), together with the motion parameter, determines which memory (a, b or c) and memory area is used for prediction. Thus it may indirectly determine the activity or frequency of use of the memory areas.

3.3 However, a relationship between this additional reference memory indicator signal in the motion compensator and the still unspecified "given control signal" used in the memory update unit, as objected to by the board (and also, incidentally, in the decision under appeal), is not *prima facie* apparent. The amendments to claim 1 of these requests over claim 1 of the main request on which the decision under appeal was based thus do not address the essential objection raised in the decision under appeal (and in the board's communication), namely that of an unspecified "given control signal". Instead these claims introduce other amendments, such as any other (than decreasing) variation of the number of memory areas and a different definition of the picture data (of **a** reference picture) stored therein. These latter amendments (and the removal of further features indicated in the annex accompanying the summons to oral proceedings) could have been presented in the first-instance proceedings. The board thus considered the filing of the previous main and first auxiliary requests with the statement of

grounds of appeal as inadmissible under Article 12(4) RPBA. Furthermore, exercising its discretion under Article 13(1) RPBA, the board also declined to admit the current main request and the first auxiliary request filed in preparation of the oral proceedings, because the amendments made therein, *prima facie,* still do not overcome the essential objection relating to the unspecified "given control signal" and present additional problems not dealt with in the decision under appeal.

4. Third and fourth auxiliary requests

4.1 These requests were filed in the oral proceedings after discussion of the previous requests with the board.

4.2 In essence, these requests additionally make a distinction between reference memories and the plurality of reference picture memory areas contained therein, seemingly responding to a question raised by the board in its communication (see point 6.1 thereof).

4.3 Both requests still set out the memory update unit for controlling the number of reference pictures to be stored in the reference picture memory areas based upon the same unspecified "given control signal" as the previous requests, which was the matter discussed beforehand both in the first-instance proceedings and up to, and including, the oral proceedings before the board. Although some of the amendments may be considered as reactions to further objections raised either in the decision under appeal or by the board, the amendments do not address the above objection of an unspecified "given control signal" and must therefore

share the fate of the requests filed in preparation of the oral proceedings. It would have been inconsistent with the need for procedural economy to admit such amendments at a very late stage, namely in the oral proceedings before the board, when the above objection had already been extensively discussed. The board thus declined to admit these amendments, exercising its discretion under Article 13(1) RPBA. The appellant did not argue to the contrary.

4.4 As a result, the board decided to exercise its power pursuant to Article 13(1) RPBA and held that the third and fourth auxiliary requests were inadmissible.

5. In conclusion, since the second auxiliary request is unallowable and the other requests are inadmissible, the appeal must be dismissed.

6. Since the board, in accordance with Article 111(1) EPC 1973, has taken a final decision in the present case, the appellant's lowest-ranking request - that the case be remitted to the examining division - does not apply.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar The Chairman

L. Fernández Gómez F. Edlinger