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File Number: T 770/90 - 3.5.1  
Application No.: 86 201 167.3  
Publication No.: 0 209 180  
Title of invention: Image enhancement circuit

Classification: G06F 15/68

D E C I S I O N  
of 17 April 1991

Applicant: Philips' Gloeilampenfabrieken N.V.

Headword:

EPC Art. 84, 123(2)

Keyword: "Claim 1, refused by Examining Division, (not supported by original application documents)"  
"Added subject-matter to Claim 1 (not allowed)"  
"Remittal to first instance (auxiliary request)"

Headnote



**Europäisches  
Patentamt**

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Patent Office**

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Beschwerdekammern

Boards of Appeal

Chambres de recours

**Case Number : T 770/90 - 3.5.1**

**D E C I S I O N**  
**of the Technical Board of Appeal 3.5.1**  
**of 17 April 1991**

**Appellant :**

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**Representative :**

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**Decision under appeal :**

**Decision of Examining Division of the European**  
**Patent Office dated 10 July 1990 refusing**  
**European patent application No. 86 201 167.3**  
**pursuant to Article 97(1) EPC.**

**Composition of the Board :**

**Chairman :** P.K.J. van den Berg  
**Members :** R. Randes  
M.V.E. Lewenton

**Summary of Facts and Submissions**

- I. European patent application No. 86 201 167.3 filed on 3 July 1986 having priority from the Netherlands and published on 21 January 1987 was refused by decision of Examining Division of the European Patent Office on 10 July 1990.

This decision was based on Claims 1 to 3 filed on 30 March 1989.

The refused Claim 1 reads as follows:

"An image enhancement circuit for converting a series of quasi-stationary low-quality image signals into an image signal of high quality, comprising an input (31) for reception of the low-quality image signals; an output (32) at which the high-quality image signal occurs; a difference-producing circuit (34) having a first input coupled to the input of the image enhancement circuit, a second input and an output on which difference image signals are produced; a weighting network (35) for weighting difference image signals applied thereto with a predetermined weighting factor and having an input which is coupled to the output of the difference-producing circuit and having an output; an accumulator circuit (33) having an input (331) coupled to the output of the weighting network (35) and an output (332) coupled to the output (32) of the image enhancement circuit and to the second input of the difference-producing circuit, characterized in that the weighting factor of the weighting circuit (35) depends on the ordinal number of the received difference image signal applied thereto."

Refused Claim 1 fully corresponded to original Claim 1, but the wording had been amended in order to improve the clarity.

- II. The reason given for the refusal was that the subject-matter of Claim 1 lacked clarity and therefore did not meet the requirements of Article 84 EPC. It was noticed that Claim 1 said nothing about the kind of dependency, i.e. the relationship between the weighting factor and the corresponding ordinal number (see the wording of the characterising part) that would lead to the desired result. It was moreover pointed out that the wording of Claim 1 also covered embodiments which were neither disclosed in the application nor operable. Therefore Claim 1 was considered to be both unclear and speculative.
- III. Notice of Appeal was filed and the fee was paid on 5 September 1990. The Statement of Grounds of Appeal was filed on the same day.

In addition to Claim 1, refused by the Examining Division, an alternative Claim 1 according to an auxiliary request was filed. Claim 1 of the auxiliary request was distinguished from the said refused Claim 1 by the addition of the following phrase at the end of the refused Claim 1:

"whereby the successive weighting factors decrease monotonically".

The Appellant argued that refused Claim 1 was supported by the application. The embodiments according to Claims 2 and 3 were clearly supported by the description, which also the Examining Division had admitted. As these embodiments were covered by the general wording of the characterising

part of Claim 1 this wording must apparently be supported by the description. The Appellant pointed out that not every possible embodiment must be explicitly disclosed in the description.

The Appellant observed that he was not aware of any provision under EPO stating that the wording of a claim was not allowed to include any non-working example one could think of. However, Claim 1 of the auxiliary request was said to be supported by the description and was said to exclude non-working examples.

- IV. In a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal the Rapporteur expressed the provisional opinion that the refusal of the application was justified, as the refused Claim 1 did not meet the requirements of Article 84. It was true that the refused Claim 1 could be interpreted as suggested by the Appellant, i.e. in the way that the weighting factor was a function of the ordinal number  $n$ . This interpretation, however, did not help to find the needed dependency, instead there apparently existed an infinite number of non-working examples. Therefore Claim 1 was not supported by the description.

The Rapporteur also expressed the provisional opinion that the alternative Claim 1 of the auxiliary request did not meet the requirements of Article 123(2) EPC.

The fact that the magnitudes of the successive weighting factors defined in both the second and third original claims decreased monotonically did not mean that the additional feature of alternative Claim 1 of the auxiliary request was explicitly or implicitly supported by the original application. It was true that original Claim 1 did not exclude such a definition. However, original

Claim 1 (corresponding to refused Claim 1) was so broadly formulated that no real information about the invention could be found therein. The Rapporteur also referred to T 509/89, wherein it was pointed out that

"when taking into consideration the original claims in assessing the admissibility of amendments under Art. 123(2) EPC, it is their information content which is decisive and not their legal effect (scope), which is relevant only for the purpose of Art. 123(3) EPC".

Moreover alternative Claim 1 according to the auxiliary request, like the refused Claim 1, did not appear to meet the requirements of Article 84, since it appeared to identify a scope which was much too broad (not supported by the description) and since it did not contain all essential and necessary features.

- V. Oral Proceedings were held on 17 April 1991, in the course of which the Appellant filed a main request, including Claims 1 to 3 and an auxiliary request including independent Claims 1 and 2.

Claim 1 of the main request is distinguished from refused Claim 1 by the following additional phrase at the end of refused Claim 1:

"whereby the weighting factor for the first difference image signal is equal to one, the weighting factors for the successive further difference image signals are smaller than one and monotonically decrease with increasing ordinal number".

Both independent Claims 1 and 2 of the auxiliary request have the same pre-characterising part as the said refused Claim 1. The characterising part of Claim 1 of the

auxiliary request is based on original Claim 2 and reads as follows:

"characterised in that the weighting factor of the weighting circuit depends on the ordinal number of the received difference image signal, and that the actual weighting factor is equal to the reciprocal value of that ordinal number".

The characterising part of independent Claim 2 of the auxiliary request is based on original Claim 3 and reads as follows:

"characterised in that the weighting factor of the weighting circuit depends on the ordinal number of the received difference image signal, and that the relation between the weighting factor  $k(i)$  and the ordinal number  $i$  of the received difference image signal is equal to

$$k(i) = 2 - \text{RND}(2 \log i)$$

where  $\text{RND}(2 \log i)$  represents the rounded-off value of  $2 \log i$ ".

The auxiliary request moreover shall be based on

pages 1 to 8 as originally filed with the amendments suggested in Appellant's (Applicant's) letter, filed on 30 March 1989, and with further amendments (concerning the introductory part of the description - part B) as filed in the said oral proceedings and

drawing sheets 1/2 and 2/2 as originally filed.

VI. Appellant admitted during oral proceedings that refused Claim 1 and also alternative Claim 1 according to the

auxiliary request filed on 5 September 1990 (see under paragraph III above) had been too broadly formulated and therefore had included non-working examples. Therefore Claim 1 of his valid main request had been changed to exclude such examples. In support of the allowability of his main request under Article 123(2) and 84 EPC, the Appellant submitted essentially the following arguments.

By introducing the information to Claim 1 that

"the weighting factor for the first difference image signal is equal to one and that also the weighting factors for the successive further difference image signals are smaller than one and monotonically decrease with increasing ordinal number"

it is made clear that the output signal of the accumulator continuously represents the approximation of the average of all low-quality image signals applied up to that moment to the image enhancement circuit and that non-working examples are excluded. Thus Claim 1 meets the requirements of Article 84 EPC. Moreover, Claim 1 also meets the requirements of Article 123(2) EPC, as the original documents of the application implicitly disclose the said new features introduced into Claim 1 of the main request.

Appellant during the oral proceedings also tried to show that the monotonically decreasing sequence of factors 1, 1/2, 1/4, 1/8 ... would lead to the desired result.

#### Reasons for the Decision

1. The appeal is admissible.



## Main Request

2. In the Board's view the amendment brought to Claim 1 by the Appellant (see under paragraph VI above) is not admissible under Article 123(2) EPC since, for the following reasons, they add to Claim 1 subject-matter extending beyond the content of the application as filed.
  - 2.1 Article 123(2) EPC, in contrast to Article 84, needs to be considered only when an amendment is proposed during the course of prosecution of an application, either to the claims or to the description. The function of Article 123(2) apparently is to prevent the addition of subject-matter to a patent application after the date of filing. However from the wording of Article 123(2) it is also to be understood that amendments of claims - also a broadening of the scope of the claims as originally filed - can be allowable, but only when the application after the amendment does not "contain subject-matter which extends beyond the content of the application as filed". As is said in the decision T 133/85 (OJ EPO 1988, 441), the original application may be said to represent a reservoir upon which the applicant may draw to amend the application. It must, however, be observed that "in accordance with Article 123(2) EPC, the original application should be considered as a reservoir which cannot be expanded after the date of filing".
  - 2.2 In order to be able to decide whether subject-matter has been added to present Claim 1 which extends beyond the content of the application as filed, it is necessary to find out whether the amendments made in Claim 1 are supported by the original application. Thus it is necessary to identify the content of the said "reservoir". This must be done by the aid of the original description (figures included) and the original claims.

2.3 As mentioned above, already the Examining Division considered that original Claim 1 had too broad a scope (see under II above). That is, it was considered not to be supported by the description and thus the application was not considered to meet the requirements of Article 84 EPC.

Also, as has been noticed by the Rapporteur (see under IV above), refused Claim 1 (corresponding to original Claim 1) only stated that the weighting factor was a function of n. As was expressed in the Board's provisional opinion, such an arbitrary definition of the dependency, which includes an infinite number of non-working examples, does not contain any useful information about the invention. This opinion, however, also represents the Board's final opinion, since nothing has been brought forward during the procedure that would have changed this opinion.

2.4 It is true that the primary function of the claims of a patent is to define the matter for which protection is sought (Rule 29 EPC) and that the "matter for which protection is sought" can be defined in a generalised form, compared to the description. The actual protection given by a granted patent is determined in accordance with Article 69 EPC by reference to the claims. So the claims shall be interpreted by means of the description, the primary function of which is to enable a skilled person in the art to carry out the invention.

However, as is said in T 133/85 cited above, "the requirement in Article 84 EPC that the claims shall be supported by the description is of importance in ensuring that the monopoly given by a granted patent generally corresponds to the invention which has been described in the application" and moreover in ensuring that "the claims

are not drafted so broadly that they dominate activities which are not dependent upon the invention which has been described in the application". Having regard to the nature of the present invention as identified by the original description, it is apparent that original Claim 1, as has been explained above, clearly "dominates activities which are not dependent upon the invention which has been described in the application". It therefore follows as has been indicated above that the information content of original Claim 1 is of little use when trying to identify the said "reservoir".

2.5 The contribution to the said "reservoir" from the original description of the application apparently only consists, as already suggested by the Examining Division, of the two examples corresponding to original Claims 2 and 3. Thus, in the original description, page 3, second paragraph, it is said:

"By assuming the weighting factor for the i-th difference image signal to be equal to 1/i, it is achieved that the output signal of the accumulator continuously represents the average of all low-quality image signals applied up to that moment to this image enhancement circuit so that the image on the monitor has an optimum brightness at any moment."

In a preferred embodiment it is said that the weighting factor is chosen as

$$k(i) = 2^{-\text{RND}(2\log i)},$$

wherein RND(2log i) is the rounded-off value of 2log i. It is said in the description (page 3) that the image enhancement circuit according to the said preferred embodiment theoretically does not yield the same image

quality as when  $k(i) = 1/i$ , but that "the weighting circuit can be considerably simplified by this choice of the weighting factors" and "in practice the difference in quality can hardly be ascertained". This weighting factor thus principally is only used in order to simplify the design of the image enhancement circuit. At the same time, however, it should be an - as good as possible - approximation of the factor  $1/i$ .

Thus, although in the cited part of the description above it is said that "by assuming" the said factor to be  $1/i$  (which could be interpreted in the way that also other factors were possible), neither the original description nor original Claim 1 gives a hint that other factors could be used. Therefore, it appears that the said sought "reservoir", when having regard to the subject-matter which is of interest in this case, in fact only contains the said sequence of factors  $1/i$  and the said approximation of the same factors according to the said "preferred embodiment".

Also no other indications in the description which explicitly or implicitly would propose other factors can be found.

2.6 In oral proceedings also the Appellant admitted that indications in the description which explicitly or implicitly would suggest other weighting factors than the said two mentioned were not to be found. He, however, was of the opinion that a generalisation of the two examples corresponding to the original Claims 2 and 3 was possible and also allowable having regard to the wording of original Claim 1.

The Board is, however, of the opinion that - as has been explained above - Claim 1 can only be built up from

material from the said "reservoir", which must not be expanded after the date of filing. Therefore only the two examples corresponding to original Claims 2 and 3 and also given in the description can be considered to make up the "reservoir". Additional examples apparently would require an expansion of the said "reservoir", which (as is said in T 133/85 - see paragraph 2.1 above) in accordance with Article 123(2) EPC, however, would not be allowable.

This interpretation corresponds in fact to the established jurisprudence, referred to by earlier decisions of the Boards of Appeal, and can also be formulated in a way that the test for compliance with Article 123(2) EPC is basically a novelty test and that no subject-matter must be generated by an amendment (see T 133/85, T 490/88 and T 118/89).

In the present case it is apparent that by the introduction of the generalised characterising feature "monotonically decreasing weighting factors" into Claim 1, instead of the said two sequences of weighting factors according to original Claims 2 and 3, a great number of new examples have been generated, which are neither explicitly nor implicitly disclosed in the original application.

Also, in the Board's view, the attempt of the Appellant during oral proceedings to show that an arbitrary monotonically decreasing sequence of weighting factors (see under VI above) would be implicitly disclosed by the original documents and would lead to a desired result was not convincing. On the contrary it appeared that a much greater intensity of brain work would be necessary than normally can be considered to lie within the expressions "implicitly known ..." or "implicitly disclosed to a skilled person". Moreover the approximations achieved with

the different new examples are apparently not identical with the ones corresponding to the two examples of the original application.

- 2.7 Since the Board is of the opinion that the possibility of using other sequences of weighting factors than are given in the original Claims 2 and 3 is not unambiguously recognisable from the application as filed, the Board is unable to grant the Appellant's main request, as this would be contrary to Article 123(2) EPC.

#### Auxiliary Request

3. As far as the Appellant's auxiliary request is concerned, the Board notes that the claims are not open to objection under Article 123(2) EPC and that they are clearly supported by the description (Article 84 EPC).

The Board also notes that the Examining Division in its decision (last page, last paragraph) noticed that such claims, had they at the time of the decision been filed, could have been allowable. However, during the proceedings in the first instance the Examining Division has not clearly expressed its view with respect to the requirements of novelty and inventive step and the decision deals only with the sole requirement of Article 84 EPC.

Under these circumstances the Board deems it appropriate to make use of the power conferred upon it by Article 111(1) EPC to remit the case to the first instance for further prosecution.

**Order**

**For these reasons, it is decided that:**

1. The decision under appeal is set aside.
2. The main request is rejected.
3. The case is remitted to the first instance for further prosecution on the basis of the auxiliary request (see under paragraph V above).

**The Registrar:**

**The Chairman:**

**M. Beer**

**P.K.J. van den Berg**