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Aktenzeichen / Case Number / N^o du recours : T 416/88 - 3.5.1

Anmeldenummer / Filing No / N^o de la demande : 82 109 232.7

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Bezeichnung der Erfindung: **Magnetic disc unit controlling method**

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : G06F 3/06

ENTSCHEIDUNG / DECISION

vom / of / du 31 May 1990

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /

Titulaire du brevet :

Mitsubishi Denki Kabushiki Kaisha

Einsprechender / Opponent / Opposant :

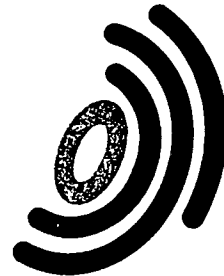
Nixdorf Computer AG

Stichwort / Headword / Référence :

EPÜ/EPC/CBE Articles 54, 56, 69, 84, 100(a), 100(b), Rule 29(1)

Schlagwort / Keyword / Mot clé : "Lack of clarity and/or incorrect two-part form of a claim (no ground for opposition) - Interpretation of (unamended) claims using the description" - "Sufficiency of disclosure (confirmed) - implementation of a feature implicit in prior art" - "Novelty and inventive step (confirmed) - unobvious method steps"

Leitsatz / Headnote / Sommaire



Case Number : T 416/88 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 31 May 1990

Appellant : Nixdorf Computer AG
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Decision under appeal : Decision of the Opposition Division of the European
Patent Office dated 23 June 1988 rejecting
the opposition filed against European patent
No. 0 076 522 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : P.K.J. van den Berg
Members : W.B. Oettinger
F. Benussi

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 76 522 based on patent application 82 109 232.7 claiming priority of 6 October 1981 and filed on 6 October 1982 was published on 12 March 1986.

The claims as granted read as follows:

"1. A method of controlling magnetic disc units in a computer system including a main computer (5), a plurality of magnetic disc units (D_1-D_n), a disc unit controller (4) for transferring information between a selected one of said disc units (D_1-D_n) and said computer (5), and substitute track storage (6) for storing addresses of substitute track positions in each of said magnetic disc units (D_1-D_n); characterised by the steps of:

providing as said substitute track storage a substitute track table memory (6) in said disc unit controller (4), the memory (6) containing information representing addresses of defective tracks and addresses of substitute track positions;

comparing in said disc unit controller (4) positioning information received from said computer (5) with entries in said substitute track table memory (6) before a positioning instruction based on said positioning information is communicated to the designated disc unit (D_1-D_n);

if an entry in said substitute track table memory corresponds to said positioning information, applying a positioning instruction to said selected disc unit corresponding to substitute track information stored in said substitute track table memory (6);

if no entry exists in said substitute track table memory (6) corresponding to said positioning information, determining whether or not a track position indicated by said positioning information is defective;

if said track position indicated by said positioning information is defective, storing substitute track information in said substitute track table memory (6), and transferring to said selected disc unit a positioning instruction corresponding to said substitute track information;

and if said track position indicated by said positioning information is not defective, transferring said positioning information to said selected disc unit (D_1-D_n) as a positioning instruction.

2. A method according to Claim 1 characterised in that said storing of said substitute track information into said substitute track table memory (6) is performed by reading a substitute track field in another field of the same track.

3. A method according to Claim 1 characterised in that said storing of said substitute track information into said substitute track table memory (6) is performed by reading a substitute track table stored in a special field of the magnetic disc unit.

4. A method according to Claim 1 characterised in that said storing of said substitute track information into said substitute track table memory (6) is performed by being transferred from said computer (5)."

II. An admissible opposition was filed, on 12 December 1986, on the ground that the subject-matter of the patent is not patentable (Article 100(a) EPC).

As to the relevant prior art, the Opponent referred to the following document (which had been cited as "D3" in the pre-grant procedure):

D1: IBM Technical Disclosure Bulletin, Volume 12, No. 12
(May 1970), pages 2340 to 2341

and to the prior use of Nixdorf Computer Systems 8870 and 8864 mentioned in:

D2: Nixdorf Computer AG Geschäftsbericht 1979, pages 12
and 38

and in an internal (unpublished)

D3: Nixdorf Computer Dokument Nr. 3-34-3-4-73, dated
24.10.78 (six pages)

as well as to the following documents relating to one or the other of the same computer systems:

D4: Systemliteratur Nixdorf 8864, System-Software,
Peripheriebehandlung REL 1.2, dated 1.9.78, pages 7-5
to 7-8 and 7-17 to 7-18

D5: Systemliteratur Nixdorf 8870, Bediener-Handbuch,
TAMOS REL.4.0, dated 1.5.80, pages 13-2 to 13-3

D6: Systemliteratur Nixdorf 8870, System-Software,
Betriebssystem REL.4.0, dated 1.5.80, pages 2.9 and
11.9

D7: Datenverarbeitungssystem 8870/3, Systemtechnische Freigabe, dated 25.4.80, pages 51 and 102

D8: Kundendienst-Manual, System 8870, Modell 1, NIROS, Software-Beschreibung, dated 10.79, page 31

and to an "Eidstattliche Erklärung" of Mr Wolfgang Henke, Fachgebietsleiter with the Opponent, and further to an offer of Mr Henke to be heard as a witness.

In the course of the opposition procedure, the Opponent criticised also the two-part form of Claim 1 (Rule 29(1) EPC) by submitting that only the last two of its characterising features were new against D1.

- III. By a decision dated 23 June 1988, the Opposition Division rejected the opposition for the reason that the claimed method distinguishes from D1, and from what is disclosed in D2 to D8 as well, by essential steps performed during normal operation of the system, and that this is not rendered obvious by any of the pieces of prior art.

In view of D2 to D8, the Opposition Division did not contest Mr Henke's affidavit and did not, therefore, make use of the offer of him being heard as a witness. In its opinion, if, according to Mr Henke, it was planned to implement, in the system 8870/1, a defective track recognition in the disc unit controller itself, such internal plans did not become prior art in the sense of Article 54(2) EPC.

- IV. On 24 August 1988, the Opponent lodged an appeal against this decision and paid the appeal fee, requesting that the decision be set aside and the patent revoked.

On 24 October 1988, the Appellant filed a statement of grounds referring, in addition to D1, to the following prior art document (which had been cited as "D1" in the pre-grant procedure):

D9: Japan Telecommunication Review, Volume 22, No. 1
(January 1980), pages 67 to 70.

He submitted that the features in Claim 1, except the last two, are anticipated by a combination of D1 and D9, and that the remaining two features are incomplete and do not make sense, respectively. Moreover, the incomplete feature cannot be supplemented due to lack of disclosure in the description. For these reasons, according to the Appellant, the said two features must be disregarded in the inventive step examination.

The Appellant further maintained the offer of Mr Henke being heard as a witness.

- V. In reply, the Respondent (Patentee) disagreed with the Appellant's view but in response to the Appellant's objections he filed, on 8 May 1989, an amended Claim 1 as a possible basis for maintenance of the patent and, in response to formal objections made in a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal, on 17 May 1990, amended Claims 2 to 4.
- VI. In oral proceedings, requested by both parties and held on 31 May 1990, the Appellant maintained his request mentioned in the Notice of Appeal.

The Respondent requested that:

Main Request:

the Appeal be dismissed;

Auxiliary Requests:

setting aside the decision under appeal, the patent be maintained as amended on the basis of:

Claim 1 as granted and Claims 2 to 4 filed on 17 May 1990 (first auxiliary request), or

Claim 1 filed on 8 May 1989 and Claims 2 to 4 filed on 17 May 1990 (second auxiliary request), or

Claim 1 filed in the oral proceedings on 31 May 1990 and Claims 2 to 4 filed on 17 May 1990 (third auxiliary request).

- VII. In the oral proceedings, the Appellant referred, in support of his requests, to his former submissions (cf. IV) and relied, in addition, essentially on the following arguments:

With regard to the explanations in the Respondent's letter of 17 May 1990, it would well appear possible that an invention has been made but this has not been disclosed in the patent.

Further, Claim 1 (main request) does not make it clear where the borderline between the prior art and the claimed invention should be drawn.

Having regard to the fact that the preamble of method Claim 1 recites apparatus features, it is not even clear what the real category of what would be protected by Claim 1 is.

Having regard to the fact that a method based on the principle of providing a substitute track table memory for defective tracks is well known and a method based on the principle of determining, at each access, whether a track is defective or not and, if it is, accessing a substitute track is also prior art, the claimed invention would seem to consist only in using the second of these two pieces of prior art for updating the table in the first, and such updating should be regarded as obvious.

In support of this obviousness, reference is made to the following relevant document (which had been cited as "D2" during the pre-grant procedure):

D10: IBM Technical Disclosure Bulletin, Volume 24, No. 1B (June 1981), pages 625 to 627.

Claim 1 does not define a table memory different from the alterable ROM of D10, and the "field tool" mentioned on page 627 of D10, first paragraph, point 2, can be implemented by a software based method.

In essence, the same would apply to the claims of the Respondent's auxiliary requests. As to the dependent claims, reference is made to the Notice of Opposition and to the submissions filed on 15 April 1988, page 4, bottom paragraph.

VIII. In support of his main request, the Respondent relied essentially on the following arguments:

Claim 1 is sufficiently clear. The skilled person would know how to implement the penultimate feature, and the last feature concerns the transference of the positioning information as a positioning instruction for the initialisation of a read/write operation as described (step i in Figure 3).

While the matter for which protection is sought is the combination of all features of Claim 1, the fourth and fifth of the characterising features are the most important ones and those which are, in the context, both new and non-obvious. They are based on the realisation that magnetic discs undergo changes during their use and that the adverse affects of these can be avoided by dynamically updating the stored substitute track table.

The invention is not a simple combination of two pieces of prior art and if it combines features known from different methods there is no suggestion in the prior art, including D10, to do so.

D10 uses a ROM which does not seem to be electronically alterable during operation but only by an unspecified "field tool" (for example: ultraviolet light) which would require that the ROM is taken out of the apparatus for the modification of its content. In contrast, in the invention, the substitute track table memory must be electronically accessible for the alteration of its content in the course of its use.

As to the auxiliary requests: the amendment made to Claim 1 is only intended to overcome any formal problems, and the same applies to the amendments made to Claims 2 to 4.

Reasons for the Decision

1. The appeal is admissible.
2. The first issue to be decided in respect of the Respondent's main request is whether the patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC).

This issue was raised for the first time in the Appellant's Statement of Grounds of Appeal but nevertheless considered by the Board.

It was raised specifically in view of the condition "if said track position indicated by said positioning information is defective", mentioned in the penultimate feature of Claim 1, i.e. in effect in view of the fourth characterising feature "determining whether or not a track position indicated by said positioning information is defective".

On the contrary, the Respondent submits that the implementation of this feature is no problem for the skilled person.

The Board agrees with this latter view. Determining whether or not a track position is defective is on the basis of establishing a list of defective tracks and therefore to be regarded as a prerequisite for any method using a defective/substitute track table memory such as, for instance, according to D1 or D2 to D8 (assuming that what is proposed in D3 and described in D4 to D8 has been used prior to the claimed invention as suggested by D2 and Mr Henke's "Eidesstattliche Erklärung") or D10. Considering that, therefore, such determination of

defective tracks must necessarily be part of the common knowledge, it cannot pose any particular problem to apply the same feature in the context of the fourth characterising feature in Claim 1 with the appropriate consequences for the penultimate (and the last) feature in that claim.

3. As to the second issue, it is to be decided whether the subject-matter of Claim 1 is patentable within the terms of Articles 52 to 57 (Article 100(a) EPC), more particularly whether it is novel (Article 54) and involves an inventive step (Article 56).
4. As a prerequisite, however, for a decision on this point it must be sufficiently clear what the subject-matter of Claim 1 is.

Lack of clarity of Claim 1 has been contended, by the Appellant, particularly in view of the last feature in Claim 1 "transferring said positioning information to said selected disc unit as a positioning instruction".

This feature is indeed unclear because the fourth characterising feature "determining whether or not a track position ... is defective" presupposes that a positioning to a particular track position has already taken place and this is confirmed by Figure 3 (step a) and its description (column 4, lines 5 to 8), so that another positioning instruction would not seem to be required.

However, lack of clarity is not one of the admissible grounds for opposition (Article 100 EPC) and would not, therefore, be an admissible objection against a granted, unamended claim. It is only allowed, and indeed required in such a case, to interpret the unclear feature of the unamended granted claim using the description and drawings (Article 69 EPC).

If this is done in the present case, it is immediately clear that the last feature is intended to refer to an instruction for the carrying out of step i (Figure 3), i.e. it is to be interpreted as meaning that, if the result of the fourth characterising feature (step d) is "NO", an instruction is transferred to the selected disc unit for the carrying out of a read or write operation (R/W) to the data field following the address field (column 4, lines 34 to 35).

As an aside, it should be mentioned that, similarly, the third characterising feature in Claim 1 is not to be understood as referring to a purposeless "positioning instruction" but, in consistency with the purpose of "controlling magnetic disc units ... for transferring information ..." (cf. preamble), as including an instruction to carry out step i after the head has been positioned to the substitute track (step f), i.e. a read or write operation to the data field following the address field (column 4, lines 28 to 29).

The unamended Claim 1 interpreted in this way, there is no clarity problem left with the subject-matter of this claim.

As to its category, Claim 1 concerns a method of controlling magnetic disc units in (i.e. which are part of) a computer system which is characterised by typical method steps.

In an invention concerning a method it is not unusual that various method steps are performed on physical (or chemical) items.

Therefore, it is quite normal that a patent claim reciting a method mentions such physical or chemical items.

In present Claim 1 those items consist of what the Appellant has called "apparatus features"

When a method claim, as in the present case Claim 1, is formulated in the two-part form, it is only natural that some of the method features, as well as some of the apparatus features, will recur in the prior art part of that claim.

Contrary to the Appellant's contention such an occurrence need not necessarily lead to any doubt concerning the real category of such a claim. Present Claim 1 concerns a method of controlling magnetic disc units in a computer system by summing up pure method steps which are made to influence physical entities. Such a method may be carried out automatically, without human interference. The very character of the features of Claim 1 establish an environment in which any other way of carrying out the claimed method than automatically is hardly conceivable.

Because of this, Claim 1 is construed to be a claim which defines the operation of the system by which the claimed method is carried out automatically without human interference.

This means that Claim 1 is considered to cover only the operation of the system which carries out the method (but not that system proper as an apparatus).

Therefore, the Board is satisfied that Claim 1 is a method claim.

5. As to novelty, the Appellant has never expressly contended that the claimed method, as a whole, has been made available to the public either by means of a written description (e.g. D1, D9, D10) or by use (D2 etc.), and the Board sees no reason to go further into this matter.

The subject-matter of Claim 1 is, therefore, to be regarded as novel.

6. What the Appellant has indeed contended is that some of the characterising features are not novel but known in the same context as those in the preamble of Claim 1.

There are doubts whether this is true (cf. 7.1). But even if it is true (cf. 7.2), such partial non-novelty, or incorrect delimitation (Rule 29(1)(a) and (b) EPC), is also (cf. paragraph 4) not an admissible ground for opposition and would not, therefore, be an admissible objection against the unamended Claim 1 as granted.

7. Thus, the remaining issue to be decided in respect of Claim 1 of the Respondent's main request is whether its subject-matter involves an inventive step.

In the opinion of the Board, this is indeed the case and this conclusion is, in essence, based on the following considerations:

- 7.1 As to the prior art to be considered, the following is noted:

- D1 discloses a method similar to that defined in the preamble of Claim 1 but does not refer to a plurality of disc units.
- D2 seems to prove that Nixdorf Systems 8870 and 8864 were in fact on the market on the priority date of the present invention and D3 in connection with Mr Henke's "Eidesstattliche Erklärung" as well as D4 to D8 would seem to show that in those systems also a method similar to that defined in the preamble of Claim 1 was implemented.

- D9 discloses also a method similar to that defined in the preamble of Claim 1 but does not further specify the defect skip as involving storing addresses of substitute track positions.
- D10 discloses also a method similar to that defined in the preamble of Claim 1 but again does not refer to a plurality of disc units.

On the assumption made before (paragraph 2) in respect of D2 to D8, the Board therefore accepts that all of these four pieces of prior art (D1, D2 to D8, D9, D10) are relevant enough to be considered and does not, in particular, disregard D10 as late filed (Article 114).

- 7.2 The Board further accepts that some of the characterising features of Claim 1 are not novel insofar as they are implicit in one or the other of the aforementioned pieces of prior art, although this does not necessarily mean that they are known in exactly the context defined in the preamble of Claim 1.

More particularly, it would seem that in any method using a defective/substitute track table memory (such as in D1 or D2 to D8 or D10) not only the first characterising feature of Claim 1 is implemented, but also the second and third, inclusive of its proper interpretation (cf. paragraph 4), can be regarded as necessarily present.

- 7.3 This does not, however, hold for the fourth characterising feature and, consequently, for the fifth (penultimate) characterising feature in Claim 1 and for the last feature in its proper interpretation (paragraph 4).

D1 does not disclose any such feature. Nor does D9.

From D3 it could be derived that in the system mentioned in D2 the substitute track table is set up only during formatting and not updated during normal operation. That would seem to follow also from D4 (page 7-17) and from D5, D6, D7, and D8.

The only prior art document which would indeed seem to go beyond such a "static" substitute track storage is D10.

This document discloses to modify the content of the alternate track table memory (page 627). As a matter of course, such a modification is only required if and when more tracks have become defective and this implies further that somehow it must be determined whether or not a track position has become defective during use. Up to this point, the fourth and fifth characterising features in Claim 1 will have to be regarded as known per se from D10.

- 7.4 At this point, it must, however, be considered that D10 is concerned with an implementation of a logical to physical track address translation table by an alterable read only memory (ROM) (page 625). In this context, the "field tool" which must be "available" for the modification of the table content (page 627) can only be understood as being a real tool other than software. The Respondent's submission that, for instance, it can be an ultraviolet light source, appears not unreasonable.

This would moreover mean that indeed, as submitted by the Respondent, the alterable ROM must be taken out of the disc unit controller for allowing its content to be modified.

As a further consequence of this, no updating during operation of the computer system is possible.

- 7.5 Until here it would seem that the parties' views do not differ widely from each other.

Where the parties disagree is whether or not D10 would render it obvious to a person skilled in the art to update the content of the substitute track table memory dynamically at every time a track not recorded in the memory is accessed, by determining at this instant whether it is defective or not, and, if it is, by storing it in the table, provided that the memory is of a kind which allows that, such as a RAM.

The Appellant submits that this is the case but the Respondent disputes this.

In the opinion of the Board, the Appellant's submission is unconvincing because it would require that some hint is given in D10 or any other prior art document that updating during operation would be desirable, but no such hint can be found.

It may - on the contrary - even be that the skilled person was deterred from considering determining whether a track is defective during operation of the computer system by the fact that such a step is time-consuming and thus against the trend to make computers as fast as possible. The Respondent has agreed that the claimed method is less rapid than one which relies on an unalterable substitute track table.

For these reasons, dynamically updating the content of this table (cf. also the description, column 2, lines 43 to 45) is to be regarded as a novel problem and its solution according to Claim 1 as unobvious.

8. It follows from the above (in particular paragraphs 2, 5 and 7) that none of the grounds for opposition mentioned in Article 100, particularly (a) and (b), EPC would prejudice the maintenance of the patent with Claim 1 unamended.

Claims 2 to 4 being dependent claims, it follows further, as a matter of course, that their subject-matter is also patentable (Article 100(a) EPC). Furthermore, sufficiency (Article 100(b) EPC) is not at issue for these claims, so that the maintenance of the patent with these claims unamended would also not be prejudiced by any of the grounds for opposition.

In such a situation, Article 102(2) EPC requires that the opposition is rejected and this means in the present case, that the appeal is to be dismissed in accordance with the Respondent's main request.

No room is, therefore, left for considering whether Claims 2 to 4 meet the formal requirements of the Convention such as Article 84 EPC.

An objection which was, in effect, a lack of clarity objection, was made by the Board, in its Communication of 9 February 1990, against Claims 3 and 4 only in view of the Respondent's request at that time that the patent be maintained as amended, i.e. in accordance with Article 102(3) EPC which would require that the patent meets the (all) requirements of the Convention. But this objection has been overturned by the Respondent's new main request that the opposition be rejected by dismissal of the appeal, i.e. the patent be maintained unamended according to Article 102(2) EPC for which a possible lack of clarity objection is not relevant.

9. No particular reference is further, in this situation, required for the Respondent's auxiliary requests.

It suffices to state that the amendments incorporated in those auxiliary requests have proven to be, in effect, unnecessary because they are only intended to make explicit what is already implicit in the unamended claims and what can be derived from them by interpretation using the description and drawings.

10. In effect, the Opposition Division's decision to reject the opposition must therefore be confirmed.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

P. Martorana

P.K.J. van den Berg