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D E C I S I O N
of 1 July 1998

Case Number: T 1173/97 - 3.5.1

Application Number: 91107112.4

Publication Number: 0457112

IPC: G06F 11/14

Language of the proceedings: EN

Title of invention:

Asynchronous resynchronization of a commit procedure

Applicant:

International Business Machines Corporation

Opponent:

-

Headword:

Computer program product/IBM

Relevant legal provisions:

EPC Art. 23(3), 52(1), 52(2)(c), 52(3)

EPC R. 27, 29

Guidelines C-IV, 2.3

TRIPS: Art. 10, 27(1), 27(2), 27(3)

Vienna Convention: Art. 4, 30, 31(1), 31(4)

Keyword:

"Exclusion of computer program product from patentability (not under all circumstances)"

Decisions cited:

T 0006/83, T 0208/84, T 0022/85, T 0115/85, T 0163/85,
T 0026/86, T 0110/90, T 0164/92, T 0769/92, T 0204/93,
T 0410/96

Headnote:

"A computer program product is not excluded from patentability under Article 52(2) and (3) EPC if, when it is run on a computer, it produces a further technical effect which goes beyond the "normal" physical interactions between program (software) and computer (hardware)".



Case Number: T 1173/97 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 1 July 1998

Appellant: International Business Machines
Corporation
Old Orchard Road
Armonk
N.Y. 10504 (US)

Representative: Teufel, Fritz, Dipl.-Phys.
IBM Deutschland Informationssysteme GmbH
Patentwesen und Urheberrecht
70548 Stuttgart (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 28 July 1997
refusing European patent application
No. 91 107 112.4 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: V. Di Cerbo
R. R. K. Zimmermann

Summary of Facts and Submissions

- I. The appeal was lodged against a decision of the examining division dated 28 July 1997 refusing European patent application No. 91 107 112.4 (publication number 0 457 112) on the grounds that the subject-matter of independent claims 20 and 21 was a computer program as such and was therefore excluded from patentability under Article 52(2)(c) and (3) EPC.

The appellant requests the grant of a patent with claims 1 to 21 submitted with letter dated 18 April 1997, as refused by the examining division.

- II. The independent claims read as follows:

"1. A method for resource recovery in a computer system running an application (56 A) which requests a work operation involving a resource, said method comprising the steps of:
implementing a commit procedure for said work request;
in case the said commit procedure is not completed due to a failure, notifying said application (56 A) after some time that it can continue to run, whereby said application (56 A) need not wait for resynchronization;
and
while said application (56 A) continues to run, resynchronizing said incomplete commit procedure for said resource asynchronously relative to said application (56 A).

14. A computer system comprising

an execution environment for running an application (56 A) and;
means for implementing a commit procedure, especially a two-phase commit procedure for said application (56 A); characterized by
means for notifying said application to continue to run in the event said commit procedure fails before completion, whereby said application need not wait for said commit procedure to be completed; and
means for resynchronizing said incomplete commit procedure asynchronously relative to said application.

20. A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of claim 1 when said product is run on a computer.

21. A computer program product stored on a computer usable medium, comprising:
computer readable program means for causing a computer to control an execution of an application (56 A);
computer readable program means for causing the computer to implement a commit procedure, especially a two-phase commit procedure for said application (56 A);
computer readable program means for causing the computer to notify said application (56 A) to continue to run in the event said commit procedure fails before completion, whereby said application (56 A) need not wait for said commit procedure to be completed; and
computer readable program means for causing the computer to resynchronize said incomplete commit

procedure asynchronously relative to said application (56 A)."

- III. The decision stated in general terms that claims 1 to 19 were thought to be acceptable and in particular that the method and the computer system as defined in claims 1 and 14 fulfilled the requirements of novelty and inventive step having regard to the prior art cited in the description.
- IV. However, the subject-matter of claims 20 and 21, which are directed to a computer program product directly loadable into the internal memory of a digital computer (claim 20) and to a computer program product stored on a computer usable medium (claim 21) respectively, was regarded as being excluded as such from patentability under Article 52(2) and (3) EPC, since, according to the Guidelines for Examination in the European Patent Office, C-IV, 2.3, a computer program claimed by itself or as a record on a carrier, is not patentable irrespective of its contents.
- V. The applicant's (appellant's) arguments before the examining division were based on technical criteria, economic considerations and international developments, the latter in particular with reference to Article 27 of the Agreement on trade-related aspects of intellectual property rights (the "TRIPS Agreement") and the guidelines for examination of the United States and Japanese patent offices.

In the decision under appeal the examining division gave the following reasons concerning these groups of arguments:

Technical criteria:

Since the data medium and the program recorded thereon were not technically related, except for features which were already known from the prior art, the technical character of the computer program could not be derived from the physical character of the storage medium on which it was recorded. The technical character could also not be derived from the method or system in which the computer program was used.

Economic considerations:

Possible economic reasons for granting patents on computer programs could not be taken into account, since the examining division was bound by the Guidelines and the interpretation of the European Patent Convention contained therein.

International developments:

Apart from the principles of procedural law generally recognised in the contracting states, the only relevant system of law for examining European patent applications was the European Patent Convention (including the Guidelines for Examination).

- VI. In his notice of appeal the appellant requested that the decision be cancelled, that the European patent be granted on the above application, and, as a subsidiary request, that oral proceedings be held if the appeal were not considered allowable.

VII. Oral proceedings were held on 1 July 1998. In a communication under Rule 11(2) of the Rules of Procedure of the Boards of Appeal annexed to the summons, the Board summarised its preliminary view.

It pointed out that on the basis of the rules of interpretation according to Article 31 of the Vienna Convention on the Law of Treaties, Article 52(2) and (3) EPC could be understood to mean that computer programs claimed as such were excluded from patentability, regardless of their technical or non-technical content. Technical character became relevant only when a computer program was claimed within the framework of a method or an apparatus.

With reference to paragraph 4 of Article 31 of the Vienna Convention, giving a special meaning to any of the terms of Article 52 EPC would not be an appropriate way to overcome the exclusion provisions. The decisions of the boards of appeal cited by the appellant only concerned inventions directed to a method, an apparatus or a system incorporating a computer program. In those cases the inventions were not considered to be computer programs as such, if technical features in addition to the computer program were claimed. The Board also noted that the contracting states were free to exclude subject-matter from patentability regardless of its technical character.

Regarding the TRIPS Agreement, it was not clear whether this international treaty applied to the EPC at all. In addition, there was no indication that the member

states of the TRIPS Agreement intended to include computer programs within the scope of patentable subject-matter.

VIII. The arguments of the appellant as submitted in writing and during the oral proceedings can be summarised as follows:

Chapter IV of the Guidelines cited by the examining division gave an over-broad and inconsistent interpretation of the EPC.

As ruled by the boards of appeal, for example in decisions T 208/84 (OJ 1987, 14, "Computer-related invention/VICOM") and T 6/83 (OJ 1990, 5, "Data processor network/IBM"), for an invention to be patentable under Article 52(1) to (3) EPC it only has to have a technical character, be novel, involve an inventive step and be industrially applicable.

The technical character of the invention according to the present application, which is essentially defined by the command sequence as specified in the stored program, was acknowledged by the examining division for the method and system of claims 1 and 14 respectively, and could not be lost for the sole reason that the invention was claimed in a different format, like the format of claims 20 and 21.

The term "invention", neither defined in the EPC nor understood uniformly in the contracting states, should be interpreted solely within the framework of the EPC.

In view of the technical problem and the technical solution required by Rules 27 and 29 EPC and the fact that the person skilled in the art is addressed in several provisions of the EPC, an invention must be understood to have a technical character in order to be patentable.

Article 52(2)(c) EPC gives a non-exhaustive list of negative examples, including computer programs. Since this paragraph also mentions activities which are clearly outside the realm of technology, the exclusion of computer programs as such can only be understood as intending to exclude these programs to the same extent as these other activities, which all concern non-technical subject-matter. A "program as such" (excluded from patentability) would therefore in fact be a non-technical program.

A narrow interpretation of the exclusion provisions would also accord with the TRIPS Agreement. Although not directly applicable to the interpretation of the EPC, the Agreement is binding on all its member states and calls for an interpretation of the EPC which is compatible with it, in particular Article 27.

The Board's attention was also drawn to Article 10 of TRIPS, which concerns copyright protection for computer programs and compilations of data. The appellant argued that the fact that Article 10 is the only provision in TRIPS which mentions programs for computers and that it in that context only mentions copyright as a possible form of protection does not mean that protection of computer programs by patents would be excluded under

TRIPS.

According to him there was no conflict between Articles 10 and 27: on the contrary, both forms of protective right may well co-exist for the same program, and each of these rights will serve its own purpose.

The technical character of an invention might result from its field of application, but might equally well result from using information technology to solve a problem in a non-technical field. Like the relationship between a plug and a socket, the technical interface between computer and program, as for example defined in present claims 20 and 21, ensures that the technical character of the method or system is maintained if the computer program is claimed by itself as a product.

Reasons for the Decision

1. *Requests*

The appellant requests the grant of a patent on the basis of claims 1 to 21, filed on 18 April 1997. The decision under appeal was based on the same request. According to that decision the patent application was refused for the sole reason that the subject-matter of claims 20 and 21 was considered as being excluded from patentability under Articles 52(2) and (3) EPC.

The only question to be decided by the Board in this

case, therefore, is whether the reason given by the examining division is correct.

2. *TRIPS*

2.1 To a large extent the Board shares the appellant's opinion about the significance of TRIPS with regard to the case under consideration.

However, for the time being it is not convinced that TRIPS may be applied directly to the EPC. Apart from any other considerations TRIPS is binding only on its member states. The European Patent Organisation itself is not a member of the WTO and did not sign the TRIPS Agreement.

2.2 Nor has the Board been able to find any justification under the Vienna Convention on the Law of Treaties for the direct application of TRIPS to the EPC.

Although, according to Article 4, the Vienna Convention, which was signed on 23 May 1969, but did not enter into force until 27 January 1980, is not applicable to the EPC, it has considerable authority and has frequently been cited by the boards of appeal when applying principles laid down in it. However, in the Board's opinion Article 30, which deals with the "application of successive treaties relating to the same subject-matter", does not provide any justification for applying TRIPS to the EPC. For instance, there is not even full correspondence between the contracting states to the EPC and the member states of TRIPS, ie not all the contracting states to the EPC

are simultaneously members of TRIPS.

- 2.3 But although TRIPS may not be applied directly to the EPC, the Board thinks it appropriate to take it into consideration, since it is aimed at setting common standards and principles concerning the availability, scope and use of trade-related intellectual property rights, and therefore of patent rights. Thus TRIPS gives a clear indication of current trends.

Article 27(1) TRIPS states that "patents shall be available for any inventions, whether products or processes, in all fields of technology, provided they are new, involve an inventive step and are capable of industrial application". This general principle, when considered together with the provisions pursuant to paragraphs 2 and 3 of Article 27 concerning exclusion from patentability (which, however, do not comprise any of the subject-matter mentioned in Article 52(2) EPC), can be correctly interpreted, in the Board's opinion, as meaning that it is the clear intention of TRIPS not to exclude from patentability any inventions, whatever field of technology they belong to, and therefore, in particular, not to exclude programs for computers as mentioned in and excluded under Article 52(2)(c) EPC.

2.4 The Board is fully aware that, according to Article 10(1) TRIPS, "computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971)". This provision does not, however, weaken the above conclusion that computer programs are patentable under TRIPS, as based on its Article 27. As correctly assumed by the appellant, the fact that Article 10 is the only provision in TRIPS which expressly mentions programs for computers and that copyright is the means of protection provided for by said provision does not give rise to any conflict between Articles 10 and 27 TRIPS. Copyright and protection by patents constitute two different means of legal protection which may, however, also cover the same subject-matter (eg programs for computers), since each of them serves its own purpose.

2.5 The appellant also referred to current practice in the US and Japanese patent offices and pointed out that, according to the recently revised guidelines for examination in both offices, claims for computer program products are now allowed. He did not go into further detail concerning the exact formulation of such claims.

The Board has taken due notice of these developments, but wishes to emphasise that the situation under these two legal systems (US, JP) differs greatly from that under the EPC in that it is only the EPC which contains an exclusion such as the one in Article 52(2) and (3).

2.6 Nevertheless, as pointed out by the appellant, these developments represent a useful indication of modern

trends. In the Board's opinion they may contribute to the further highly desirable (world-wide) harmonisation of patent law.

3. *The relevant source of substantive patent law*

The outcome of the above considerations is that the only source of substantive patent law for examining European patent applications at this moment is the European Patent Convention. The examining division's conclusion in the decision under appeal that the EPC is the only relevant system of substantive patent law to be taken into account is therefore correct.

In applying the EPC the examining division relied on the Guidelines for Examination in the European Patent Office and thus only applied the interpretation of the EPC as given therein.

However, the Guidelines are not binding upon the boards of appeal. In particular, according to Article 23(3) EPC, "in their decisions the members of the Boards shall not be bound by any instructions and shall comply only with the provisions of this Convention".

The Board will therefore now investigate what in its view would be the proper interpretation of the exclusion from patentability of programs for computers under Article 52(2) and (3) EPC.

4. *Exclusion under Article 52(2) and (3) EPC*

4.1 Turning to the exclusion clause itself, the Board notes

the following:

Article 52(2)(c) EPC states that programs for computers shall not be regarded as inventions within the meaning of Article 52(1) EPC and are therefore excluded from patentability.

Article 52(3) EPC establishes an important limitation to the scope of this exclusion. According to this provision, the exclusion applies only to the extent to which a European patent application or a European patent relates to programs for computers "as such".

The combination of the two provisions (Article 52(2) and (3) EPC) demonstrates that the legislators did not want to exclude from patentability all programs for computers. In other words the fact that only patent applications relating to programs for computers as such are excluded from patentability means that patentability may be allowed for patent applications relating to programs for computers where the latter are not considered to be programs for computers as such.

- 4.2 In order to establish the scope of the exclusion from patentability of programs for computers, it is necessary to determine the exact meaning of the expression "as such". This may result in the identification of those programs for computers which, as a result of not being considered programs for computers as such, are open to patentability.

5. *Interpretation of "as such"*

- 5.1 Within the context of the application of the EPC the technical character of an invention is generally accepted as an essential requirement for its patentability. This is illustrated, for instance, by Rules 27 and 29 EPC.
- 5.2 The exclusion from patentability of programs for computers as such (Article 52(2) and (3) EPC) may be construed to mean that such programs are considered to be mere abstract creations, lacking in technical character. The use of the expression "shall not be regarded as inventions" seems to confirm this interpretation.
- 5.3 This means that programs for computers must be considered as patentable inventions when they have a technical character.
- 5.4 This conclusion seems to be consistent with the three different provisions concerned:
- (a) the exclusion from patentability provided for in Article 52(2) EPC;
 - (b) the general provision of Article 52(1) EPC, according to which European patents shall be granted for any inventions (therefore having technical features) which are susceptible of industrial application, which are new and which involve an inventive step;
 - (c) the provision of Article 52(3) EPC, which does not allow a broad interpretation of the scope of the

exclusion.

5.5 The main problem for the interpretation of said exclusion is therefore to define the meaning of the feature "technical character", in the present case with specific reference to programs for computers.

6. *Technical character of programs for computers*

6.1 For the purpose of interpreting the exclusion from patentability of programs for computers under Article 52(2) and (3) EPC, it is assumed that programs for computers cannot be considered as having a technical character for the very reason that they are programs for computers.

6.2 This means that physical modifications of the hardware (causing, for instance, electrical currents) deriving from the execution of the instructions given by programs for computers cannot *per se* constitute the technical character required for avoiding the exclusion of those programs.

6.3 Although such modifications may be considered to be technical, they are a common feature of all those programs for computers which have been made suitable for being run on a computer, and therefore cannot be used to distinguish programs for computers with a technical character from programs for computers as such.

6.4 It is thus necessary to look elsewhere for technical character in the above sense: It could be found in the

further effects deriving from the execution (by the hardware) of the instructions given by the computer program. Where said further effects have a technical character or where they cause the software to solve a technical problem, an invention which brings about such an effect may be considered an invention, which can, in principle, be the subject-matter of a patent.

- 6.5 Consequently a patent may be granted not only in the case of an invention where a piece of software manages, by means of a computer, an industrial process or the working of a piece of machinery, but in every case where a program for a computer is the only means, or one of the necessary means, of obtaining a technical effect within the meaning specified above, where, for instance, a technical effect of that kind is achieved by the internal functioning of a computer itself under the influence of said program.

In other words, on condition that they are able to produce a technical effect in the above sense, all computer programs must be considered as inventions within the meaning of Article 52(1) EPC, and may be the subject-matter of a patent if the other requirements provided for by the EPC are satisfied.

- 6.6 As already indicated in the previous paragraph, said technical effect may also be caused by the functioning of the computer itself on which the program is being run, ie by the functioning of the hardware of that computer. It is clear that in this situation too the physical modifications of the hardware deriving from the execution of the instructions given by the program

within the meaning indicated under points 6.2 and 6.3 above cannot *per se* constitute the technical character required for avoiding exclusion.

In this case it is only said further technical effect which matters when considering the patentability requirements, and no importance should be attached to the specific further use of the system as a whole.

The expression "the system as a whole" means the hardware plus the software, that is the system consisting of the hardware as programmed in accordance with the program concerned (hardware + software).

7. *Case law of the boards of appeal of the EPO*

7.1 The considerations contained in reasons 4, 5 and 6 above are in line with the main stream in the case law of the boards of appeal of the EPO.

As far as patentability is concerned the boards have so far required inventions to possess technical character. To the Board's knowledge there are no decisions in which a board of appeal has attributed a technical character to a computer program for the sole reason that the program is destined to be used in a technical apparatus, namely a computer.

This can be illustrated by one of the early decisions of the boards in this field, T 208/84 (OJ 1987, 14), "Computer-related invention/VICOM", as cited above. This invention in this case related to "A method of digitally processing images in the form of a two-

dimensional data array ...", which made use of a mathematical method incorporated in a computer program run on an appropriate computer to do the said processing.

In this case it was held that the method according to the invention was not excluded from patentability, because it constituted a technical process which was carried out on a physical entity. This entity might be a material object but equally an image stored as an electric signal. Thus said method was neither a mathematical method as such nor a computer program as such.

7.2 The fact that the physical modifications of the hardware deriving from the execution of the instructions of a computer program cannot *per se* constitute the technical character of programs for computers as required for the purpose of avoiding their exclusion from patentability under Article 52(2)(c) and (3) EPC, is demonstrated for example by decision T 22/85 (OJ 1990, 12), "Document abstracting and retrieving/IBM", according to which the said physical modifications of the hardware cause electrical currents.

7.3 A typical example of an invention which concerns the internal functioning of a computer caused by the programs running on it was the subject of decision T 769/92 (OJ 1995, 525), "General-purpose management system/SOHEI", according to which the fact that technical considerations were required in order to arrive at the invention was considered to lend sufficient technical character to the invention as

claimed for it to avoid exclusion from patentability under Article 52(2)(c) and (3), whereas no importance was attributed to the specific use of the system as a whole.

- 7.4 The basic idea of the invention resides in the computer program.

Of particular importance to the present case is the fact that, according to the case law of the boards of appeal, a claim directed to the use of a computer program for the solution of a technical problem cannot be regarded as seeking protection for the program as such within the meaning of Article 52(2)(c) and (3) EPC, even if the basic idea underlying the invention may be considered to reside in the computer program itself, as illustrated for example by decisions T 208/84 (OJ 1987, 14), "Computer-related invention/VICOM", as cited above, and T 115/85 (OJ 1990, 30), "Computer-related invention/IBM".

The case law thus allows an invention to be patentable when the basic idea underlying the invention resides in the computer program itself.

8. The Board takes this opportunity to point out that, for the purpose of determining the extent of the exclusion under Article 52(2) and (3) EPC, the said "further" technical effect may, in its opinion, be known in the prior art.

Determining the technical contribution an invention achieves with respect to the prior art is therefore

more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Article 52(2) and (3).

9. *Claim for a computer program product*

9.1 As already pointed out under reason 1, the only question to be decided in this appeal is whether the subject-matter of claims 20 and 21 is excluded from patentability under Article 52(2) and (3) EPC. These claims are directed to a computer program product and have to be examined from the point of view of what may be called "the further technical effect", which, if present, may lead to the subject-matter not being excluded under Article 52(2) and (3) EPC.

9.2 Such products normally comprise a set of instructions which, when the program is loaded, makes the hardware execute a specific procedure producing a particular result.

9.3 It is self-evident that in this instance the basic idea underlying the invention resides in the computer program. It is also clear that, in such a case, the hardware on which the program is intended to run is outside the invention, ie the hardware is not part of the invention. It is the material object on which the physical changes carried out by running the program take place.

Furthermore, it is clear that if, for instance, the computer program product comprises a computer-readable medium on which the program is stored, this medium only

constitutes the physical support on which the program is saved, and thus constitutes hardware.

- 9.4 Every computer program product produces an effect when the program concerned is made to run on a computer. The effect only shows in physical reality when the program is being run. Thus the computer program product itself does not directly disclose the said effect in physical reality. It only discloses the effect when being run and consequently only possesses the "potential" to produce said effect.

This effect may also be technical in the sense explained in reason 6, in which case it constitutes the "further technical effect" mentioned there. This means that a computer program product may possess the potential to produce a "further" technical effect.

Once it has been clearly established that a specific computer program product, when run on a computer, brings about a technical effect in the above sense, the Board sees no good reason for distinguishing between a direct technical effect on the one hand and the potential to produce a technical effect, which may be considered as an indirect technical effect, on the other hand.

A computer program product may therefore possess a technical character because it has the potential to cause a predetermined further technical effect in the above sense. According to the above, having technical character means not being excluded from patentability under the "as such" provision pursuant to Article 52(3) EPC.

This means that a computer program product having the potential to cause a predetermined further technical effect is, in principle, not excluded from patentability under Article 52(2) and (3). Consequently, computer program products are not excluded from patentability under all circumstances.

9.5 In contrast to the reasons given in the decision under appeal, the Board has derived the technical character of the computer program product from the potential technical effect the program possesses, which effect is set free and may reveal itself when the program is made to run on a computer.

9.6 A computer program product which (implicitly) comprises all the features of a patentable method (for operating a computer, for instance) is therefore in principle considered as not being excluded from patentability under Article 52(2) and (3) EPC.

It is self-evident that a claim to such a computer program product must comprise all the features which assure the patentability of the method it is intended to carry out when being run on a computer. When this computer program product is loaded into a computer, the programmed computer constitutes an apparatus which in turn is able to carry out the said method.

Wording the claim for a computer program product in this way also ensures that, when the hardware works according to its predetermined procedures, its internal physical changes carried out by the program are not relevant *per se* for determining whether an invention

(as claimed) is patentable (see, for example, T 22/85, OJ 1990, 12, "Document abstracting and retrieving/IBM", already cited and discussed under reasons, 7.2).

9.7 Given that, according to the above, in the Board's opinion a further technical effect is necessary, deriving from the execution of the program, such a requirement will be satisfied when the claim is formulated as specified above.
Such a claim contains functional features and its scope is defined in terms of the function performed by the computer program as described in that claim.

9.8 The present decision is further supported by the reasons given in the "VICOM" decision under reasons, 16, third and last paragraph, where the Board found that: "Finally, it would seem illogical to grant protection for a technical process controlled by a suitably programmed computer but not for the computer itself when set up to execute the control". In other words, it would seem illogical to grant a patent for a method but not for the apparatus adapted for carrying out the same method. By analogy, the present Board finds it illogical to grant a patent for both a method and the apparatus adapted for carrying out the same method, but not for the computer program product, which comprises all the features enabling the implementation of the method and which, when loaded in a computer, is indeed able to carry out that method.

10. *Interpretation according to the Vienna Convention*

10.1 The Board has analysed some aspects of the meaning of

the expression "computer programs as such", with the emphasis on the "as such", and has arrived at the conclusion that a computer program product is not excluded from patentability if it possesses the potential to bring about a "further" technical effect.

Returning to the Vienna Convention, Article 31, "General rule of interpretation", states in paragraph 1 that "A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose", and in paragraph 4 that "A special meaning shall be given to a term if it is established that the parties so intended".

10.2 The Board is of the opinion that the interpretation given above to the exclusion of computer programs as such under Article 52(2)(c) and (3) EPC is in full agreement with the provisions of the Vienna Convention cited here.

In particular, the object and purpose of the EPC is the grant of patents for inventions and thus to promote technical progress by giving proper protection to these inventions. With this in mind, the Board has arrived at its interpretation in the light of developments in information technology. This technology tends to penetrate most branches of society and leads to very valuable inventions. In its interpretation the Board has in its view not gone beyond the ordinary meaning given to the terms of the EPC. The meaning it has attributed to the expression "as such" in Article 52(3) EPC is, in its opinion, not a special meaning within

the meaning of Article 31(4) Vienna Convention, which would have required the consent of the parties to the EPC.

11. *Further case law of the boards*

11.1 Furthermore, the Board wishes to point out that it is aware of the fact that, according to the case law of the boards of appeal and in particular according to that of the present Board, although composed differently, the view was taken on a number of occasions that exclusion under Article 52(2)(c) and (3) EPC applied to all computer programs, independently of their contents, that is, independently of what the program could do or perform when loaded into an appropriate computer. To make a distinction between programs with a technical character and those with a non-technical character, as is the case here, would not be allowed under such reasoning.

11.2 Examples of such reasoning may be found for instance in decisions T 26/86 (OJ 1988, 019, "X-ray apparatus/KOCH & STERZEL", reasons, 3.1), T 110/90 (OJ 1994, 557, "Editable document form/IBM", reasons, 5), T 164/92 (OJ 1995, 305, "Electronic computer components/ROBERT BOSCH", reasons, 4) and T 204/93 (unpublished, "System for generating software source code/ATT", reasons, 3.13).

11.3 However, it should also be noted that neither of the cited decisions nor, to the knowledge of the Board, any other decision of the boards of appeal deals with a claim directed to a computer program product as in present claims 20 and 21.

This means that the question to be decided upon in the present appeal has not been answered earlier by the boards of appeal. Strictly speaking, the cited reasonings may therefore be considered to constitute obiter dicta and not ratio decidendi.

11.4 However, in some cases reasonings of the type cited have played at least prima facie a predominant role in reaching the decision concerned (see, for example, T 204/93, mentioned above, unpublished, "System for generating software source code/ATT", reasons, 3.13).

Consequently, the Board feels obliged to comment on this case.

11.4.1 Reason 3.13 states that computer programs may be useful, or applicable to practical ends, and that, for instance, a computer may control, under control of a program, a technical process, and that in accordance with the case law, such a technical process may be patentable. However, it also states that computer programs as such, independent of such an application, are not patentable irrespective of their content, even if that content happens to be such as to make it useful, when run, for controlling a technical process.

- 11.4.2 The Board ruled that, "similarly", a programmer's activity of programming was, "as a mental act", not patentable, irrespective of whether the resulting program could be used to control a technical process, and that automating that activity in a way which did not involve any unconventional means did not render that programming method patentable either, independently of the content of the resulting program.
- 11.4.3 Finally, it is stated in reason 4.4: "It is furthermore not necessary to consider whether claim 5 would be disallowed anyway for the reason that Article 64(2) EPC would extend the protection conferred by that method claim to the product directly obtained by such process, namely programs for computers, which extended protection would seem to contravene the explicit provision that programs for computers as such are excluded from patent protection according to Article 52(2) and (3) EPC".
- 11.4.4 The present Board concludes from this summary that the real, objective reasons given in the above decision were that a programmer's activity of programming constituted a mental act excluded as such under Article 52(2)(c) and (3) EPC, but that the word "similarly" clearly implied that the activity of programming was excluded from patentability also, because of the exclusion of computer programs, and that automating that activity (eg by means of a computer program) did not involve any unconventional means which were able to overcome the exclusion, which, in the end, apparently was based on a combination of the exclusions of schemes, rules and methods for performing mental

acts and of computer programs, both as such, under Article 52(2)(c) and (3) EPC.

- 11.5 The present Board concludes from all this that, although the present decision may be based on a slightly different approach in thinking and reasoning than the case law of the boards of appeal of the EPO, it does not go directly against the existing case law when that case law is considered in the light of what was decided in the decisions concerned.

However, the Board wishes to distinguish the cited decision T 204/93, in so far as the latter purports to exclude all computer programs as such, ie irrespective of their contents.

12. *The exact wording of the claims*

- 12.1 The examining division was of the opinion that claims 1 to 19 met the provisions of the EPC.

As indicated above under the circumstances there is no need for the Board to verify this finding, since these claims are not the subject of this appeal. However, the Board wishes to comment briefly on their wording.

Claims 1 and 14 are the independent claims of this set of claims. They are worded in functional terms and belong to different categories of claim. Claim 1 is a claim for a method for resource recovery in a computer system (method claim or process claim). Claim 14 is a claim for a computer system (apparatus claim or device claim) and it is assumed that claim 14 constitutes a system (an apparatus or device) for carrying out the

method of claim 1.

If the Board's assumptions are correct, then although the two claims belong to different categories, there would nevertheless be unity of invention under Article 82 EPC, and the allowability as considered by the examining division of a claim for a method and a claim for an apparatus adapted for carrying out the same method would conform with the established case law of the boards of appeal, since, as mentioned above, according to the cited "VICOM" decision it would be illogical to grant a patent for the method and not for the apparatus which is adapted for carrying out the same method.

- 12.2 The present appeal relates to whether the subject-matter of claims 20 and 21 is excluded from patentability under Article 52(2) and (3) EPC. The examining division decided that it was. The Board wishes to emphasize that it has decided only that a computer program product is not excluded from patentability under all circumstances. To the Board, those circumstances include the exact wording of the claims at issue. As the wording of present claims 20 and 21 shows, there are various ways in which a claim to a computer program product may be formulated.

From the fact that these claims were refused by the examining division on the basis of the cited passage in the Guidelines, the Board concludes that the examining division did not consider the exact wording of those claims in detail, and acknowledges that, from the

examining division's point of view, there was little need to do so.

However, now that the Board has decided that not all computer program products are prima facie to be excluded from patentability, a thorough examination of the exact wording of the claims has to be carried out.

In order to preserve the appellant's right to have this determined at two instances, the case is remitted to the first instance for further examination of this point.

12.3 The Board would like to indicate that, according to decision T 410/ 96 (dated 25 July 1997, unpublished), reference in a claim to another claim of a different category may be helpful in order to achieve a more concise wording of the claims.

13. Finally, as has become clear from the above, the Board notes that it does not agree with the interpretation by the examining division of Article 52(2) and (3) EPC with reference to the Guidelines, C-IV, 2.3 (page 38 of the December 1994 edition) from which they concluded that a computer program claimed by itself or as a record on a carrier is not patentable.

In the view of the Board, a computer program claimed by itself is not excluded from patentability if the program, when running on a computer or loaded into a computer, brings about, or is capable of bringing about, a technical effect which goes beyond the "normal" physical interactions between the program (software) and the computer (hardware) on which it is

run.

"Running on a computer" means that the system comprising the computer program plus the computer carries out a method (or process) which may be of the kind according to claim 1.

"Loaded into a computer" means that the computer programmed in this way is capable of or adapted to carrying out a method which may be of the kind according to claim 1 and thus constitutes a system (or device or apparatus) which may be of the kind according to claim 14.

Furthermore, the Board is of the opinion that with regard to the exclusions under Article 52(2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier (following decision T 163/85, OJ 1990, 379, "Colour television signal/BBC", as cited above).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the appellant's request, and in particular for examination of whether the wording of the present claims avoids exclusion from patentability under Article 52(2) and (3) EPC, taking

into account the fact that a computer program product
is not so excluded under all circumstances.

The Registrar: The Chairman:

M. Kiehl

P. K. J. van den Berg