

A	X	B		C	
---	---	---	--	---	--

File Number: T 110/90 - 3.5.1

Application No.: 83 111 222.2

Publication No.: 0 109 615

Title of invention: Methodology for transforming a first editable document form prepared with a batch text processing system to a second editable document form usable by an interactive or batch text processing system

Classification: G06F 15/20

D E C I S I O N
of 15 April 1993

Applicant: International Business Machines Corporation

Headword: Editable document form/INTERNATIONAL BUSINESS MACHINES CORPORATION

EPC Article 52(2)(c), (3), 111(1)

Keyword: "Method for performing mental acts - no" - "Program for computers - no" - "Remittance for further prosecution"

Headnote

1. Control items (e.g. printer control items) included in a text which is represented in the form of digital data are a characteristic of the text-processing system in which they occur in that they are a characteristic of the technical internal working of that system.

Therefore, such control items represent technical features of the text-processing system in which they occur (following decision T 163/85 "Colour television signal/BBC", OJ EPO 1990, 379).

2. Consequently, transforming control items which represent technical features belonging to one text-processing system into those belonging to another text-processing system represents a method having technical character.

3. If a method of transforming text represented as digital data according to which a source document, cast in a first editable form including a plurality of input control items, is transformed into a target document, cast in a second editable form including a plurality of output control items compatible therewith, is implemented by an appropriately programmed computer, the steps

of that method represent rather the algorithm on which the computer program is based than a computer program as such and the program must be considered to be the technical means for carrying out the (technical) method (following decision T 208/84, "Computer related invention/VICOM", OJ EPO 1987, 14).

Case Number : T 110/90 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 15 April 1993

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

Representative : Jost, Ottokarl, Dipl.-Ing.
IBM Deutschland GmbH
Patentwesen und Urheberrecht
Schönaicher Strasse 220
D-7030 Böblingen

Decision under appeal : Decision of Examining Division 2.2.01.065 of the
European Patent Office dated 14 September 1989
refusing European patent application
No. 83 111 222.2 pursuant to Article 97(1) 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 appeal is directed at the decision of Examining Division 2.2.01.065, dated 14 September 1989, to refuse the European patent application No. 83 111 222.2 on the ground that the subject-matter of Claim 1 as published (EP-A-109 615) could not be regarded as an invention within the meaning of Article 52(1) EPC.

That claim read as follows:

"A method of transforming a source document, cast in a first editable form which includes a plurality of input items therein, to a target document of a second form, comprising output items, characterised in that said second form also is an editable form which includes output items compatible therewith, said method comprising the steps of:

- a) determining a set of key state variables, from amongst all possible state variables, that reflect and collectively identify information concerning the presence of source document control items that are read in a sequence thereof from said source document;
- b) determining criteria for compatibility of source input items to be read with source controls that have been read in a sequence and are reflected in said key state variables;
- c) establishing a fixed order for all possible output items in which any necessary pair of output items

in the transformation of a given input sequence will be written in said established order;

- d) defining a set of rules for each possible output item that determine whether each of said possible output items is to be written out to said target document as a function of the status of said state variables; and
- e) reading a sequence of input items from said source document in accordance with said compatibility criteria;
- f) writing out all eligible output items under said rules as a transform of said sequence, in said fixed order of output items."

According to the decision, while the subject-matter of the application might well be susceptible of industrial application, it nevertheless did not meet the requirements of Article 52 EPC since in accordance with Article 52(2) EPC, it was not regarded as an invention within the meaning of Article 52(1) EPC.

Industrial applicability did not override the restriction on patentability imposed by paragraph 2 of Article 52 EPC. In other words, subject-matter, which in accordance with Article 52(2) EPC is not regarded as an invention within the meaning of Article 52(1) EPC, is excluded from patentability notwithstanding its industrial applicability; cf. the Guidelines for Examination in the European Patent Office, C-IV, 2.2 and 4.5.

Claim 1 did not identify any technical features for carrying out the claimed procedural steps. Rather, the general method as claimed specified a purely abstract concept prescribing how to transform data. Clearly, steps a) to d) of Claim 1 had to be performed exclusively mentally by a human being, e.g. a system designer. Claim 1 was also wide enough in scope to cover the case where steps e) and f) of that claim were performed mentally by a human being using appropriately drafted decision tables.

The applicant's counter-argument that the subject transform mechanism could be performed on a computer system, although supported by the description, in particular page 7, lines 8 to 12 and the part of the description referring to Figure 1, was rejected for the reason that such a realisation of steps e) and f) of Claim 1 was not clearly and unambiguously subject-matter of the claims.

Moreover, the Examining Division noted that a claim to a computer program is not patentable irrespective of its content and that normally this situation is not changed when the computer program is loaded into a known computer, except when the claimed subject-matter provides a technical effect and includes all technical features which are essential for the technical effect; referring to the Guidelines, C-IV, 2.3, "programs for computers".

With regard to the applicant's statement that the application, which solves the problem of converting between different types of editable documents, enhances the utility of existing text processors of various

kinds, the Examining Division stated that such an effect was merely a consequence of using the claimed method in a processor of a computer system and, therefore, was not directly and unambiguously obtained by the claimed method as such.

The applicant further argued that a significant influence on the computer structure was manifested in a so-called "virtual" interface, constituted by the transforms unit (48) shown in Fig. 1 of the application; this was refuted by the Examining Division's statement that it could well be that the figures and the description of the application disclosed technical features and a technical problem, but that this was not relevant. As pointed out by the Examining Division in both its first and second communications, Claim 1 as it stood did not clearly and unambiguously specify any technical matter. In spite of this repeated objection, the applicant had maintained the original set of claims unamended.

In accordance with Article 52(2) EPC, the subject-matter of Claim 1 could not be regarded as an invention within the meaning of Article 52(1) EPC.

Dependent Claims 2 to 7 did not contain any features of a technical nature either. They were considered to be excluded from patentability for the same reasons.

- II. The appeal was lodged, and the respective fee paid, on 8 November 1989 with the request that the appealed decision be cancelled and a patent granted.

On 12 January 1990, the Appellant filed a statement of grounds, accompanied by a new Claim 1 intended to overcome the "mental acts" objection, arguing that the "computer program" objection was not justified and that the claimed method was technical in the sense of the VICOM decision (T 208/84, OJ EPO 1987, 14).

III. In response to a communication from the Board citing its case law (T 22/85, T 38/86, T 65/86, T 186/86), and expressing doubts as to the patentability of the new Claim 1 or a similar claim, the Appellant referred to another decision (T 26/86, OJ EPO 1988, 19).

IV. On 5 December 1991, oral proceedings were held at the conclusion of which the Board decided to offer the Appellant the opportunity to file amended claims within a certain time limit.

V. In response, the Appellant filed new claims and requested that the case be remitted to the Examining Division for further examination on the basis of the documents on file, which the Board understands to be the following:

- Claims 1 to 7 filed on 6 June 1992;
- Description as published but with the amendments suggested on 18 May 1987 and on 1 March 1988;
- Drawings as published.

Claim 1 reads as follows:

"A method of transforming text

which is represented in the form of digital data

wherein a source document, cast in a first editable form which includes a plurality of input control items therein, is transformed to a target document, cast in a second editable form which includes a plurality of output control items compatible therewith,

said method comprising the steps of:

- a) determining (Fig. 2) a set of key state variables, from amongst all possible state variables, that reflect and collectively identify information concerning the presence of input control items that are read in an input sequence thereof from said source document;
- b) determining criteria for compatibility of the input control items to be read with the input control items that have been read in the input sequence and are reflected in said key state variables;
- c) establishing (Figs. 4-8) a fixed order for all possible output control items in combination with said key state variables for the transformation of a given portion of the input sequence including input control items;
- d) defining a set of rules (Figs. 9-31) for each possible output control item that determine whether each of said possible output control items is to be written out to said target document as a

.../...

function of the status of said state variables;
and

digitally processing the text by

- e) reading a given input sequence of input control items from said source document in accordance with said compatibility criteria; and
- f) writing out all eligible control output items to said target document under said fixed order as a transformation of said given input sequence."

VI. In support of the submission that the claimed method is not excluded from patentability, the Appellant submitted in the oral proceedings that none of the claimed steps is purely mental and that the claimed method is not purely software either but involves technical (hardware) features as well. With particular reference to the earlier decision T 186/86, it was submitted that the claimed method is not concerned with linguistics, as is editing, but with technical problems arising when printer-formatting, control codes have to be transformed from a document cast in one text-processing system to a document cast in another which is not directly compatible with the former. The reference, in Claim 1, to an "editable" form means that the source document has possibly been edited and the target document will also be editable but the editing as such is not the subject of the claim.

Reasons for the Decision

1. The appeal is admissible (Articles 106 to 108 and Rule 64 EPC).
2. The amendments made to Claim 1 do not, apparently, extend beyond the content of the application as originally filed.
3. The issues to be decided in the present case are
 - first, whether the reason given in the decision under appeal for rejecting the original claims, viz. that they relate to a method for performing mental acts, still applies to the claims now on file, and
 - second, if this is not the case, whether nevertheless these claims must be rejected because they relate to a program for computers under Article 52(2)(c) EPC.

In deciding the issues under Art. 52(2), the provision under Art. 52(3) that such matters are excluded from patenting only to the extent to which the application relates to such subject-matter or activities as such, must be borne in mind.

4. *The mental acts issue*

Present Claim 1 (cf. V), even though it does not mention any "means", has been restricted with regard to Claim 1 as refused by the impugned decision (cf. I) by features which do not allow the claimed method to be interpreted as being susceptible of being carried out exclusively by mental acts.

First, in the context of a method of transforming text from a source document to a target document as defined in the opening phrases of Claim 1, the expression "digital data" introduced in that claim can only be understood as meaning data in the form of digital electrical signals (bits and bytes) and the expression "digitally processing" introduced in the claim must be understood, therefore, as meaning that the data in this form are processed by the processor of a computer system.

Second, the input and output items have now been specified as input or output "control" items respectively. They cannot be understood any longer, therefore, as text items but must be understood as acting on items of hardware such as a printer.

The fact that Claim 1 still contains method steps - implicit in features a) to d) - which can be carried out mentally, does not exclude its subject-matter from being patentable under Article 52(2) EPC, having regard to Article 52(3) EPC. It is established case law that in principle a mix of non-technical features (such as mental activities) and technical features may be patentable.

In the present case, the non-technical, mentally-performed steps a) to d) may be regarded as first essentials for the carrying out of the other method steps. It has now to be investigated to what extent the subject-matter of Claim 1, seen as a whole, constitutes nothing more than a method for performing mental acts "as such", albeit carried out on a computer. The mere fact that a method for performing mental acts as such,

as normally excluded from patentability under Art. 52(2) and (3), is carried out by a suitably programmed computer, generally speaking, does not make that method a technical method.

In particular, reference is made here to decision T 22/85, "Document abstracting and retrieving /IBM", OJ EPO 1990, 12. There it was held (cf. reason 8) that, for carrying out in practice an activity excluded as such from patentability under Art. 52(2) EPC, some means may be used which themselves could be qualified as technical, e.g. a computer controlled by appropriate software, and that a claim directed to an excluded activity which at the same time contains such technical features would not appear to be unallowable under all circumstances. However, the mere setting out of the sequence of steps necessary to perform the activity in terms of functions or functional means to be realised with the aid of conventional computer hardware elements does not impart any technical considerations and, therefore, cannot lend a technical character to that activity and thereby overcome the exclusion from patentability.

Similarly, T 158/88, OJ EPO 1991, 566, "Schriftzeichenform/SIEMENS", implies that the statement in a patent claim that technical means are used (in that case a visual display unit) in carrying out a process alone is not sufficient to escape exclusion from patentability under Art. 52(2).

The invention according to Claim 1 concerns a transformation of text from a source document cast in a first editable form to a target document cast in a

second editable form. The transformation is independent of the linguistic meaning of the digital text data processed. It is, above all, concerned with (printer) control items in the source document and not with the linguistic meaning of words of the text, and the problem to be faced is that the form of the data representing these control items is different in the source and target documents.

The ultimate purpose of said control items is, *inter alia*, the control of hardware such as a printer. Thus, such control items have to do with e.g. carriage return, new page, new paragraph, etc., which have a technical character and represent equivalents to similar functions as were performed by mechanical means in old mechanical typewriters, before the latter were converted into all-electric text processors. In particular, these control items have nothing to do with the linguistic aspects or the meaning of the texts being processed.

In the view of the Board, control items (e.g. printer control signals) included in a text which is represented in the form of digital data are characteristic of the text-processing system in which they occur in that they are characteristic for the technical, internal working of that system.

Therefore, such control items represent technical features of the text-processing system in which they occur, following decision T 163/85 "Colour television signal/BBC", OJ EPO 1990, 379, in which it was decided that a colour television signal, characterised by technical features of the system in which it occurs,

i.e. in which it is being generated and/or received, does not fall within the exclusions of Art. 52(2)(d) (presentation of information) and (3) EPC (reason 2). Consequently, transforming control items which represent technical features belonging to one text-processing system into those belonging to another text-processing system represents a method having technical character.

The Board is of the opinion that, by the text transformation method claimed, a contribution to the art is made which is not merely of a linguistic nature but is basically technical. It concerns the technical problem of transformation of digital data representing (printer) control items, cast in a first form, into digital data still representing the same information but cast in a second form, thus effectively creating a communicative link between normally incompatible text-processing systems; moreover, by solving this problem, it yields a corresponding result, i.e. has a technical effect.

In this respect, the present case should be distinguished different from the earlier "text-processing" case law such as, for instance, T 186/86 (not published). The latter decision concerned a method for displaying and editing spatially-related data in an interactive text-processing system. In that case, the Board considered that the invention was directed to editing proper and that the editing method had for its purpose the creation of a text having a desired information content and lay-out, which meant that the method as such aimed at solving a problem which was essentially of a non-technical nature. The Board was of

the opinion that the activity of text editing as such had to be considered as falling within the category of schemes, rules and methods for performing mental acts and, therefore, was excluded from patentability under Art. 52(2)(c) and (3) EPC.

In the circumstances of the present case, it is no longer relevant that Claim 1 contains, or implies, a number of individual features which may not be technical, but may indeed involve mental acts only, once the technical character of the subject-matter of Claim 1 considered as a whole has been established.

Furthermore, it does not appear decisive that the reading of input items and the writing of output items, as such, are conventional features in the field of computer functioning. The important point in the present case is that these functions, as defined in e) and f), are carried out in accordance with the technical requirements which ensure that the technical result, or effect, is actually achieved, as indicated before.

On the basis of the foregoing, the Board considers that the subject-matter of Claim 1 does not fall within the category of schemes, rules and methods for performing mental acts referred to in Article 52(2)(c) EPC.

5. *The computer program issue*

The Board agrees with the Examining Division's view that a computer program claimed by itself is not patentable, irrespective of its content. Although in the exclusions from patentability under Art. 52(2), a

general tendency might be detected to suggest that only abstract and non- technical subject-matters are excluded as such (Art. 52(3)), it seems worthwhile to note that computer programs not having an abstract, or non-technical "content" must be considered also to fall within the exclusion, as long as they are claimed as such.

According to the Board's case law, in particular T 38/86 "Text processing/IBM", OJ EPO 1990, 384, it seems to be the intention of the EPC to permit patenting (only) in those cases in which the invention involves a contribution to the art in a field not excluded from patentability.

As described above, Claim 1 makes such a contribution.

Even though it may be assumed that a method, carried out by a computer system, of transforming text represented in the form of digital data from a source document to a target document by processing this text digitally, will not always be implemented by a special-purpose (text-processing) computer (as the Appellant referring to "DisplayWrite" has submitted), but also by a general-purpose computer, operating under the control of suitable programs, the method according to Claim 1 does not merely relate to computer programs as such but to a method resulting, in effect, in a communicative combination of two text-processing systems.

The Board, therefore, is of the opinion that, by the text transformation method claimed, a contribution to the art is made which is not merely a matter of programming but is basically technical. It concerns the

technical problem of transformation of digital data representing (printer) control items, cast in a first form, into digital data still representing the same information but cast in a second form, thus effectively creating a communicative link between normally incompatible text-processing systems, moreover, by solving this problem it yields a corresponding result, i.e. has a technical effect.

The Board concludes that if a method of transforming text represented as digital data according to which a source document, cast in a first editable form including a plurality of input control items, is transformed into a target document, cast in a second editable form including a plurality of output control items compatible therewith, is implemented by an appropriately programmed computer, the steps of that method represent rather the algorithm on which the computer program is based than a computer program as such and the program must be considered to be the technical means for carrying out the (technical) method, following decision T 208/84, "Computer-related invention/VICOM", OJ EPO 1987, 14, in particular reason 12.

The Board's conclusion, therefore, is that Claim 1 does not relate to computer programs "as such" under Art. 52(2)(c) EPC.

6. Finally, even though the control of a printer or the like by said control items would result, in the end, in the presentation of information, the claimed method is not concerned with "presentations of information" as

such which would be excluded from patentability by Article 52(2)(d) and (3) EPC.

7. In the opinion of the Board, it would not be appropriate to "weigh" the non-technical and technical features for the purpose of finding out which ones preponderate, nor to search for the "heart" of the invention and disregard the rest following T 26/86, OJ EPO 1988, 19, "Röntgeneinrichtung/KOCH und STERZEL". What suffices, in the present case, for a positive decision on the issue to be decided is that a technical contribution to the art is made as pointed out above.

The Board's conclusion, therefore, is that the present Claim 1 neither relates to methods for performing mental acts "as such", nor to computer programs "as such" nor to any other matter excluded "as such" from patentability under Art. 52(2), (3) EPC.

8. The same must necessarily apply to the dependent Claims 2 to 7.
9. The Examining Division's reasons for refusing the application have thus to be considered removed and the Appellant's request that the decision under appeal be set aside is to be allowed.
10. The only other relevant issue in respect of which the Examining Division gave an opinion is whether the subject-matter claimed at that time was susceptible of industrial application (Article 57 EPC). The Board is of the opinion that this is certainly the case for the subject-matter now claimed.

The Board agrees with the Examining Division's opinion that industrial applicability under Art. 57 does not override the restrictions on patentability imposed by Art. 52(2).

Having refused the present application under Art. 52(2), there was no need for the Examining Division to give an opinion as to novelty (Art. 54) and inventive step (Art. 56 EPC), nor to consider the description with regard to Rule 27 EPC.

Now that the claims on file are no longer unallowable under Art. 52(2) EPC, the application has still to be examined with respect to the requirements just mentioned.

Therefore, the Board considers it appropriate to allow the Appellant's request that the case be remitted to the Examining Division for further prosecution in accordance with Article 111(1) EPC.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of the application documents on file as listed in paragraph V.

The Registrar:

The Chairman:

M. Kiehl

P.K.J. van den Berg