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Bezeichnung der Erfindung: Automatic text grade level analyser for a text  
Title of invention: processing system  
Titre de l'invention :

Klassifikation / Classification / Classement : G06F 15/20

### ENTSCHEIDUNG / DECISION

vom / of / du 14 February 1989

Anmelder / Applicant / Demandeur : I.B.M.

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Text processing/IBM

EPÜ/EPC/CBE Articles 52(1), (2)(c) and (3), 56

Schlagwort / Keyword / Mot clé : "Method for performing mental acts" -  
"mix of technical and non-technical features" -  
"inventive step (denied)"  
"text processing"

#### Leitsatz / Headnote / Sommaire

I. A person who is detecting and replacing linguistic expressions which exceed a predetermined understandability level in a list of linguistic expressions using only his skill and judgement is performing mental acts within the meaning of Article 52(2)(c) EPC. Accordingly, schemes, rules and methods used in performing them are not inventions within the meaning of Article 52(1) EPC.

II. Since according to Article 52(3) EPC patentability is excluded only to the extent to which the patent application relates to subject-matter or activities summarised in Article 52(2) as such, it appears to be the intention of the EPC to permit patenting in those cases in which the invention involves some contribution to the art in a field not excluded from patentability.

.../...

III. The use of technical means for carrying out a method for performing mental acts, partly or entirely without human intervention, may, having regard to Article 52(3) EPC, render such a method a technical process or method and therefore an invention within the meaning of Article 52(1) EPC.

IV. However, if the technical implementation of such a method is obvious to a person skilled in the technical art, once the steps of the method for performing the mental acts have been defined, so that there is no inventive contribution in a field not excluded from patentability under Article 52(2)(c) EPC, such method does not involve an inventive step within the meaning of Article 56 EPC.

V. If a claim for an apparatus (here: a text processing system) for carrying out a method does not specify any technical features beyond those already comprised in a claim pertaining to said method and furthermore does not define the apparatus in terms of its physical structure, but only in functional terms corresponding to the steps of said method, the claimed apparatus does not contribute anything more to the art than the method, in spite of the fact that the claim is formulated in a different category. In such a case, if the method is excluded from patentability, so is the apparatus.

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Boards of Appeal

Chambres de recours

Case Number : T 38/86 - 3.5.1



**D E C I S I O N**  
of the Technical Board of Appeal 3.5.1  
of 14 February 1989

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

**Representative :** Bonneau, Gérard  
Compagnie IBM France  
Département de Propriété Industrielle  
F-06610 La Gaude (FR)

**Decision under appeal :** Decision of Examining Division 065  
of the European Patent Office  
dated 12 September 1985 refusing  
European patent application  
No. 83 102 553.1 pursuant to  
Article 97(1) EPC

**Composition of the Board :**

**Chairman :** P.K.J. van den Berg  
**Members :** W.J.L. Wheeler  
E. Persson

## Summary of Facts and Submissions

- I. European patent application No. 83 102 553.1 (publication No. 93 250), filed on 15 March 1983 and claiming priority from a previous application US 373544 of 30 April 1982, was refused by a decision of the Examining Division 065 of the European Patent Office dated 12 September 1985. That decision was based on Claims 1 to 5 and 7 to 9 as published and Claim 6 as filed with a letter dated 17 June 1985.
- II. The reason given for the refusal was that the subject-matter of the claims was not acceptable under Article 52(1) EPC. In Claims 1 to 5 was claimed a method which was a collocation of an algorithm based on non-technical information, which was excluded from patentability by Article 52(2) and (3) EPC, and directions for the use of a text processor system consisting of conventional hardware, which did not involve an inventive step within the meaning of Article 56 EPC. In Claims 6 to 9 was claimed a system whose structural features did not involve an inventive step within the meaning of Article 56 EPC.
- III. On 29 October 1985 the Appellant filed a notice of appeal against this decision. The fee for appeal was paid on the same day. The statement of grounds was filed on 14 January 1986, accompanied by a new set of claims.
- IV. In the statement of grounds the Appellant stated that the new Claim 1 related to a conventional text processing system characterised by a new method of operating the system, which was a combination of steps carried out by the operator and steps performed entirely under the control of the system. The functional relationship of the system elements was new as the result of there being a new method of operating. The system claimed in the new Claim 1

therefore had technical character and was an "invention" within the meaning of Article 52(1) EPC.

Regarding inventive step, the Appellant argued that none of the documents cited by the Examining Division dealt with understandability of words or suggested the steps of the present method.

- V. In reply to a communication from the Board, in which it was stated that there did not appear to be anything disclosed in the present application which involved an inventive step in a field not excluded from patentability, the Appellant filed a new set of claims on 5 May 1988, including two independent claims which are worded as follows:

"1. A method for automatically detecting and replacing linguistic expressions which exceed a predetermined understandability level in a list of linguistic expressions, in a text processing system comprising a processor (11) with a memory including a dictionary section (31) storing said linguistic expressions each with an appended grade level code and a synonym section (32) storing a list of synonymic expressions for said dictionary section each with an appended grade level code, a keyboard (10) including cursor control keys and a display (14) for displaying said linguistic expressions stored in either memory section to the operator; said method being characterized in that it comprises the steps of:

- (a) inputting into said text processing system by means of said keyboard, a code representing a predetermined understandability level, said code being stored in said memory;

- (b) comparing in said processor, each member of said list of linguistic expressions to said dictionary of linguistic expressions;
- (c) comparing in said processor the grade level code of the dictionary linguistic expression which compares equal to said member of linguistic expressions, to said stored understandability level code;
- (d) highlighting on said display said member of linguistic expressions when the grade level code of the dictionary linguistic expression is greater than said stored understandability level code;
- (e) retrieving in said synonym section of the memory, the linguistic expressions which are synonyms of said member of linguistic expressions;
- (f) displaying a set of synonyms on said display when at least one of them has an appended grade level code which does not exceed said stored understandability level code, whereby the operator is enabled to replace the highlighted linguistic expression with a member of said displayed synonyms by positioning the display cursor underneath said synonym member by means of said keyboard."

"6. Text processing system comprising a processor (11) with a memory including a dictionary section (31) storing linguistic expressions each with an appended grade level code, and a synonym section (32) storing a list of synonymic expressions for said dictionary section, each with an appended grade level code, a

keyboard (10) including cursor control keys, and a display (14) for displaying said linguistic expressions stored in either memory section to the operator; said system being characterized in that it comprises:

means for causing the processor to store a code representing a predetermined understandability level,

first control means for causing said processor to compare each member of an input set of linguistic expressions to said dictionary of linguistic expressions,

second control means responsive to the result of the comparison caused by said first control means for causing said processor to compare the grade level code associated with the linguistic expression in said dictionary which compares equal to the member of the input set of linguistic expressions, to said code representing a predetermined understandability level,

means responsive to the result of the comparison caused by said second control means for causing the processor to highlight on said display the member of the input set when the grade level code of the linguistic expression compares greater than the code representing the predetermined understandability level,

means for causing the processor to display a set of synonymic expressions for the highlighted member of the input set, said set of synonymic expressions being fetched from said synonym section, and

means for causing said processor to replace the highlighted member of the input set of linguistic expressions with a member of the displayed set of synonymic expressions."

Claims 2 to 5 are dependent on Claim 1 and Claims 7 to 9 are dependent on Claim 6.

VI. In the letter filed with these claims the Appellant agreed with the Board that the process of choosing words to be included in a list or other text by its author was a mental act, but argued that steps a) to f) of Claim 1 were not mental acts, since they were not carried out by a human being. They were performed automatically by the system and produced technical effects, such as the automatic provision and display of a list of synonyms.

The Appellant referred to T 26/86 (OJ EPO, 1988, 19) and argued that the statements made there to the effect that if an invention made use of technical and non-technical means, the use of non-technical means did not detract from the technical character of the overall teaching, and that the EPC did not prohibit the patenting of inventions consisting of a mix of technical and non-technical elements, applied to the present case.

The Appellant agreed with the Board that the claimed method involved the use of conventional hardware controlled by a computer program, but pointed out that this did not mean that the method claimed in Claim 1 was itself a program. Following T 26/86, the claimed method was patentable irrespective of whether or not the hardware without the program formed part of the state of the art. Denying the patentability of the claimed method would render Article 52(3) EPC meaningless and lead to a non-uniform application of the law.



The Appellant stated that Claims 6 to 9 related to the specific structure of the text processing system implementing the method claimed in Claims 1 to 5, and their subject-matter was therefore patentable.

The Appellant requests that the decision under appeal be set aside and a patent granted on the basis of Claims 1 to 9 filed on 5 May 1988.

### Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. As can be seen from the opening words of Claim 1, the claim is directed to a method for automatically detecting and replacing linguistic expressions which exceed a predetermined understandability level in a list of linguistic expressions.
3. The "understandability level" of a linguistic expression refers to the difficulty which a human being may have in understanding the exact meaning of the expression in question, depending on, for example, his level of education, experience and age. One may, for example, think of an expression like "prima facie", which for many people may be difficult to understand, being detected and replaced by, say, "at first sight". According to page 1 of the description of the present application it has been discovered that improved text proofing for the purpose of reviewing word content against educational level of the intended audience can be achieved by coupling a specialised dictionary of words including grade level data to a text processing system for automated text review and recomposition to meet a desired grade level, and,

according to page 6, the grade level codes assigned to the text words in the dictionary list may be based either on the extensive testing of students or on the analysis of required text books by grade to determine at what grade level a given word has been sufficiently introduced into a student's lexicon to assume that it is known. The Applicant has recognised that generally a score of 67% is sufficient when placing a word in a grade level category.

4. Claim 1 goes on to specify that the method is carried out in a text processing system comprising a processor with a memory including a dictionary section storing the linguistic expressions each with an appended grade level code and a synonym section storing a list of synonymic expressions for said dictionary section each with an appended grade level code, a keyboard including cursor control keys and a display for displaying said linguistic expressions stored in either memory section to the operator. The Appellant does not dispute the fact that the hardware specified in this part of Claim 1 is conventional. The information stored in the memory sections is purely abstract linguistic information.
5. In step a) of Claim 1, namely "inputting into said text processing system by means of said keyboard, a code representing a predetermined understandability level, said code being stored in said memory;" information required solely for linguistic purposes is entered and stored in a manner which is conventional from a technical point of view.

In step b) of Claim 1, namely "comparing in said processor, each member of said list of linguistic expressions to said dictionary of linguistic expressions;" signals representing only linguistic information are compared in a manner which is conventional from a technical point of view.

7. In step c) of Claim 1, namely "comparing in said processor the grade level code of the dictionary linguistic expression which compares equal to said member of linguistic expressions, to said stored understandability level code;" signals representing only linguistic information are compared in a manner which is conventional from a technical point of view.
8. In step d) of Claim 1, namely "highlighting on said display said member of linguistic expressions when the grade level code of the dictionary linguistic expression is greater than said stored understandability level code;" the result of steps a) to c) is displayed to the operator in a manner which is conventional from a technical point of view.
9. In step e) of Claim 1, namely "retrieving in said synonym section of the memory the linguistic expressions which are synonyms of said member of linguistic expressions;" information required solely for linguistic purposes is retrieved in a manner which is conventional from a technical point of view.
10. In step f) of Claim 1, "displaying a set of synonyms on said display when at least one of them has an appended grade level code which does not exceed said stored understandability level code," involves only the comparison of grade level codes to determine whether at least one of the synonyms retrieved in step e) meets the linguistic requirement of being easier to understand than the expression highlighted in step d), followed by the display of information required solely for linguistic purposes, namely to enable the operator to replace the highlighted linguistic expression with a member of said displayed synonyms by positioning the display cursor underneath said synonym member by means of said keyboard. The selection of one of several displayed options by positioning the cursor under it is conventional from a technical point of view.

11. It seems to the Board that a person who wishes to detect and replace linguistic expressions which exceed a predetermined understandability level in a list of linguistic expressions, doing everything by himself with pencil and paper, would have to proceed in a similar way and follow the same sequence of steps a) to f) as described in Claim 1, but without using the technical facilities indicated there:

- (A) he would for himself define a predetermined understandability level and, in order not to forget it, write it down somewhere if necessary;
- (B) he would compare by himself each member of said list with a specialised dictionary, such as the one referred to on page 6 of the present application or one that he had himself compiled beforehand;
- (C) look up the value of the understandability level (grade level) of each said member which he found in the dictionary,
- (D) note for himself when that grade level is greater than the level he had defined in step (a),
- (E) then look in the dictionary for synonyms
- (F) which have a grade level which does not exceed the level defined in step (a); and, if he found such a synonym, replace the member of the list by that synonym.

Proceeding in this way, the said person would only use his skill and judgement and would consequently perform purely mental acts within the meaning of Article 52(2)(c) EPC. The schemes, rules and methods, i.e. the steps as enumerated under the foregoing items A-F for performing these mental acts are not inventions within the meaning of Article 52(1) EPC.

12. The Board recognises that the use of technical means for carrying out a method, partly or entirely without human intervention, which method, if performed by a human being, would require him to perform mental acts, may, having regard to Article 52(3) EPC, render such a method a technical process or method and therefore an invention within the meaning of Article 52(1) EPC, i.e. one which is not excluded from patentability under Article 52(2)(c) EPC. This is because paragraph 3 of Article 52 EPC makes it clear that patentability is excluded only to the extent to which the patent application relates to excluded subject-matter or activities as such. In the opinion of the Board, while it follows that the EPC does not prohibit the patenting of inventions consisting of a mix of excluded and non-excluded features (in conformity with T 26/86, OJ EPO 1988, 19), it does not necessarily follow that all such mixes are patentable. Since patentability is excluded only to the extent to which the patent application relates to excluded subject-matter or activities as such, it appears 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.
13. However, this seems not to be the case here. Once the steps of the method for performing the mental acts in question (enumerated under the foregoing item 11) have been defined, the implementation of the technical means to be used in those steps, at least at the level of generality specified in Claim 1, involves no more than the straightforward

application of conventional techniques and must therefore be considered to be obvious to a person skilled in the (technical) art, so that the method according to Claim 1 of the present application does not contribute to the art anything involving an inventive step within the meaning of Article 56 EPC in a field not excluded from patentability by Article 52(2)(c) EPC.

14. Although a computer program is not expressly recited in Claim 1, it is clear to a reader skilled in the art that the claim covers the case in which a computer program is used and, indeed, in the only embodiment disclosed in the application the text processing system is controlled by a set of programs and data stored in the memory.
15. It can be seen from the analysis in paragraphs 4 to 10<sup>5</sup> above that the operations performed in the method claimed in Claim 1 of the present application do not go beyond the processing of data relating to a list of linguistic expressions and codes representing their understandability level. The overall effect of the method is that signals representing one linguistic expression in the list are replaced with signals representing another linguistic expression. These signals are not different from a technical point of view. They differ only in that they represent different linguistic expressions, which are purely abstract expressions without any technical significance. The overall effect of the method is thus not technical.
16. The fact that the claimed method involves a new method of operating, as pointed out by the Appellant, cannot by itself confer patentability on the method, since the specified hardware is conventional, the data processed has no technical significance and the processing of this data involves only conventional techniques of entering, storing,

retrieving, comparing, displaying, highlighting and selecting from a menu. The Board cannot find anything in the claimed method, considered as a whole, or in any of its details, which could involve an inventive step in a field which is not excluded from patentability by Article 52(2) EPC.

17. The present case is therefore distinguishable from the previous decisions T 208/84 (VICOM, OJ EPO 1987, 14) and T 26/86 (X-ray apparatus, OJ EPO 1988, 19). In T 208/84 the claimed method is patentable, even though it could be carried out by known hardware suitably programmed, because it makes a contribution in a field not excluded from patentability, namely a more efficient restoration or enhancement of the technical quality of an image. Similarly, in T 26/86 the claimed apparatus is patentable, even though the X-ray apparatus without the computer program was known, because it makes a contribution in a field not excluded from patentability, namely controlling the X-ray tubes so that optimum exposure is obtained with adequate protection against overloading of the X-ray tubes.
18. In contrast to this, the method claimed in Claim 1 of the present application merely makes use of a computer program, running on conventional hardware, which it controls to perform conventional operations, governing a method for the performance of a mental act. The claim does not include anything which could involve an inventive step in a field which is not excluded from patentability by Article 52(2)(c) EPC.
19. It follows that Claim 1 cannot be accepted.

20. Claims 2 to 5 concern further details of steps b) and f) of the method according to Claim 1, in which only conventional operations are performed on non-technical data. These claims do not include anything which could involve an inventive step in a field not excluded from patentability by Article 52(2)(c) EPC.
21. Claim 6 will now be considered. Apart from the hardware features mentioned in the preamble, which the Appellant does not dispute are conventional, this claim does not define the system in terms of its physical structure, but only in functional terms, corresponding to the steps of the method claimed in Claim 1. Notwithstanding the fact that Claim 6 is drafted as an apparatus claim, the contribution to the art is the same as in Claim 1.
22. It follows that Claim 6 cannot be accepted for analogous reasons, namely that the claim does not include anything which could involve an inventive step in a field not excluded from patentability by Article 52(2)(c) EPC.
23. Claims 7 to 9 merely specify in functional terms means for carrying out the steps specified in Claims 2 to 4 and do not include anything which could involve an inventive step in a field not excluded from patentability by Article 52(2)(c) EPC.
24. As far as the disclosed embodiment is concerned, some of its hardware is explicitly acknowledged to be conventional. Near the bottom of page 3, it says: "The microprocessor may be an IBM Series 1, INTEL model 8086, or any of the functionally equivalent, currently available microprocessors." On page 4, line 11, it says: "The printer may be any suitable printer known in the art." The description of the remaining hardware is not very detailed and does not mention any feature which is not conventional,



it being assumed in the application that a person skilled in the art would know of suitable devices which may be used. The manner in which the hardware devices are interconnected is indicated only in a very general way. The required functions and interactions are achieved by means of programs and data stored in the memory.

25. While it cannot be denied that there is an interaction between the programs and the hardware, since the programs without the hardware or the hardware without the programs could do nothing, but together they make it possible to perform the method claimed in Claim 1, this fact alone cannot confer patentability on either the method or the apparatus. Since the only conceivable use for a computer program is the running of it on a computer, the exclusion from patentability of programs for computers would be effectively undermined if it could be circumvented by including in the claim a reference to conventional hardware features, such as a processor, memory, keyboard and display, which, in practice, are indispensable if the program is to be used at all. In the opinion of the Board, in such cases patentability must depend on whether the operations performed involve an inventive step in a field not excluded from patentability by Article 52(2) EPC.
26. In the present case, all the operations performed are conventional from a technical point of view and amount to no more than the processing of abstract data, for a non-technical purpose, by means of computer programs running on conventional hardware. The Board has found nothing in the claims, description and drawings of the present application which could be regarded as making a contribution to the art in a field which is not excluded from patentability by Article 52(2)(c) EPC.

27. In the opinion of the Board, therefore, the present application must be refused.

Order

For these reasons, it is decided that:

the appeal is dismissed.

The Registrar

The Chairman

S. Fabiani

P.K.J. van den Berg