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Datasheet for the decision of 1 April 2009

Case Number: T 1143/06 - 3.5.01

Application Number: 00900249.4

Publication Number: 1153353

IPC: G06F 17/30

Language of the proceedings: EN

Title of invention:
Data selection system and method therefor

Applicant:
BRITISH TELECOMMUNICATIONS public limited company

Opponent:
-

Headword:
Data selection system/BRITISH TELECOMMUNICATIONS

Relevant legal provisions:
EPC Art. 52(2)(d)

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step: treatment of features relating to a presentation of information"

Decisions cited:
T 0095/86, T 0619/98, T 0244/00, T 0643/00, T 0049/04 (not followed), T 0125/04, T 0154/04

Catchword:
See points 3 and 5.

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1143/06 - 3.5.01

D E C I S I O N
of the Technical Board of Appeal 3.5.01
of 1 April 2009

Appellant: BRITISH TELECOMMUNICATIONS public limited company
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 7 March 2006 refusing European patent application No. 00900249.4 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: S. Steinbrener
Members: S. Wibergh
P. Schmitz

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division to refuse European patent application No. 00900249.4.

II. The following documents will be referred to:

D1: M. Hemmje et al., "Lyber World - A Visualization User Interface Supporting Fulltext Retrieval", Proc. 17th Annual International ACM-SIGIR Conference, Dublin 3-6 July 1994, ACM/Springer 1994, 249-259, XP 000475325;

D2: K.A. Olsen et al., "Visualization of a document collection: the VIBE system", Information Processing & Management XXIX(1), 1993, 69-81, XP 000574984.

III. The main request before the examining division was refused under Article 123(2) EPC. With respect to the first auxiliary request the examining division held that the only feature in claim 1 not known from D1 was the determination of the speed of the displayed elements. The feature achieved the effect that the cognitive costs for making relevance judgements were further lowered. This was a cognitive effect in the mind of the human user and as such not technical and not objectively measureable. It was rather caused by a particular presentation of information to a human observer. The technical problem was the implementation of a system including the speed feature, and this problem had been solved in an obvious way (see the decision under appeal, point 2.1). The five further

auxiliary requests were also refused for lack of inventive step.

IV. With the statement setting out the grounds of appeal dated 14 July 2006 the appellant requested that the decision be set aside and a patent be granted based on claims 1 and 17 of the newly submitted main request or one of auxiliary requests 1-3. These requests corresponded to the first, second, fourth and sixth auxiliary request respectively before the examining division. The argumentation, subsequently amplified in the letter dated 4 March 2009, was largely based on two decisions by the Boards of Appeal: T 49/04 "Text Processor/WALKER" and T 643/00 "Searching image data/CANON" (neither published in OJ EPO). The appellant submitted that these decisions implied that the manner how cognitive content was conveyed to the user could be considered as contributing to a technical solution to a technical problem.

V. In a communication the Board stated that the views expressed in T 49/04 in respect of the boundaries of technicality might not be representative for the jurisprudence of the boards as it had evolved over the last twenty years. In support of this view reference was made in particular to decisions T 95/86 "Text editing/IBM", T 619/98 and T 125/04 "Assessment system/COMPARATIVE VISUAL ASSESSMENTS" (none published in OJ EPO). The Board also raised the question who the relevant skilled person was. If it was an informatician it had to be noted that informatics was an interdisciplinary field involving social and cultural aspects. It seemed that the study of human perception, an area of psychology, must have played an important

role for the invention. In the Board's view a psychologist was not a technically skilled person and his particular field of knowledge could not be decisive for patentability.

VI. Oral proceedings were held on 1 April 2009. The appellant substituted the third auxiliary request for the first auxiliary request, which was withdrawn. The second auxiliary request was maintained.

VII. Claim 1 of the *main request* reads:

"A method of sorting information stored in a data storage system, said information being stored as a plurality of data files, each data file being a group of data that can be linked together by a common parameter, said method comprising the steps of:
defining at least one sort statement (16);
determining the value of a relevance parameter for each data file in the stored information in respect of the or each sort statement (20);
defining at least one sort statement site on a display means, wherein a sort statement site represents a respective sort statement (24);
representing the data files as elements on the display means;
effecting movement of at least one element from an initial position on the display means towards one or more sort statement sites (26), the speed and trajectory of movement of respective elements being determined in accordance with the relevance parameter value for their associated data files in respect of each statement so that differences in the data files cause the elements to move relative to one another,

thereby to provide a visual indication of the data files being sorted [*]; and
using selection means thereby to enable user selection of at least one data file according to the position on the display means of its respective element".

The asterisk [*] marks the place where the extra feature according to auxiliary request 1 is added.

VIII. Claim 1 of *auxiliary request 1* differs from the main request by an addition to the penultimate feature:

"wherein the elements move in steps into respective new positions and wherein a new movement vector for each element is calculated at each step from its respective new position".

IX. Claim 1 of *auxiliary request 2* differs from the main request by the limitation that the initial position is "substantially common" (to all elements) and "equi-distant from all sort statement sites".

X. The appellant declared that he was prepared to adapt the claims on file if necessary. In particular, the final method step could be limited to user selection of a document, rather than mere enablement. Furthermore, a pause function feature could be added, and/or a clarification to the effect that the sort statements did not move.

XI. The appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the claims according to the main, first auxiliary or

second auxiliary request, all claims filed with the statement setting out the grounds of appeal.

XII. At the end of the oral proceedings the Board announced its decision.

Reasons for the Decision

1. The invention

The invention relates to a system and method for accessing data files in a computer-based database. The description explains (p.1 to p.3, l.9) that the utility of these systems often depends on the speed and accuracy with which a data file can be accessed in the database. The ability to identify patterns in large quantities of data can be of significant commercial benefit. A problem associated with large computer databases is that it can be extremely difficult to identify hidden patterns in the data. The invention allows each of the data files to be represented visually as an element moving on the display. Patterns in the data are readily recognisable since each element moves in accordance with the relevance of the sort statements to the data file it represents. In this way differences between respective data files can be observed on the display as relative movements between the respective elements. Thus, hidden patterns in the data are easily identified by observing groups of elements moving in a similar way. The selecting means allows these groups of elements to be selected so that the respective data files can be accessed and analysed.

The main request

2. The method of claim 1 is performed by means of a data storage system including a display and (implicitly) a computer. It is therefore an invention within the meaning of Article 52(1) EPC.

3. Inventive step

3.1 The examining division refused the claim as not involving an inventive step, and this issue will be directly addressed by the Board.

3.2 The appellant and the Board agree with the examining division that the invention differs from D1 only in that the speed of movement of respective elements is determined, causing the elements to move relative to one another. The main question is whether the examining division's finding that this feature did not have a technical effect was justified.

3.3 A non-technical claim feature is a feature which does not interact with the technical features to produce a technical effect. According to the jurisprudence of the Boards of Appeal such a feature cannot establish novelty and inventive step (T 154/04 "Estimating sales activity/DUNS LICENSING ASSOCIATES", OJ EPO 2008,46, point 15). Since the present invention is concerned with the visualisation of data files Article 52(2)(d) EPC, excluding presentations of information from patentability, is obviously relevant.

3.4 If the new features of a claim concern the presentation of information itself (rather than its concrete

implementation) a patent can only be granted if they also produce a technical effect. If they do not they cannot contribute to an inventive step. One example of such a case is T 125/04 (*supra*) concerning a new kind of vector diagram. The deciding board stated that "/i/n general, the task of designing diagrams is non-technical. This is so even if the diagrams arguably convey information in a way which a viewer may intuitively regard as particularly appealing, lucid or logical" (Catchword). Another example is decision T 619/98 (*supra*), in which it was held that an action performed by a user in response to a message in the form of questions or suggestions concerning the technical functioning of an apparatus did not render the form of the information technical.

3.5 Returning now to the present invention, the movement of the elements symbolising the data files over the screen is intended to convey information. This is clear from the patent application itself: "Patterns in the data are readily recognisable since each element moves in accordance with the relevance of the sort statements to the data file it represents" (p.3, 2nd sentence). Regarded in isolation this feature must be held to be a "presentation of information" in the sense of Article 52(2)(d) EPC. In its claim context the feature can therefore only contribute to an inventive step if it additionally produces a technical effect.

3.6 The appellant's arguments are of two types. The first is that the speed feature produces a technical effect, or that it at least requires technical considerations to be implemented. The second is that the Board's approach to the patentability of inventions involving a

presentation of information is inappropriate. This view is said to be supported by decisions T 49/04 (*supra*) and T 643/00 (*supra*).

The Board will first address the issue of technical effects.

3.7 The appellant argues that knowledge of the user interface resolution was required in order to generate meaningful movement. However, as the appellant admits, claim 1 of the main request is not correspondingly limited.

3.8 The appellant further argues that the invention provides a greater amount of information and therefore provides a superior solution to the "objective technical problem to be solved", namely to permit an "efficient search, retrieval and evaluation of data records stored in a database" (which formulation takes its inspiration from decision T 643/00; see point 6.3 below).

The Board's view is that the invention does not solve a problem that is directly concerned with the search for and retrieval of information, since the only new feature relates to the movement of displayed elements. The direct effect of the visualisation is the impression it makes on the user. The stated problem is therefore too broad. A more precise formulation would be that the invention solves the problem of presenting information about data files to a person in such a manner that he can easily evaluate it, this person being the user of a system for search and retrieval of data files in a database. This wording demonstrates

more clearly that the problem is not a purely technical one. In fact, the same information could theoretically be displayed as natural-text descriptions or tables. (That these forms of presentation might in practice be unsuitable is a different matter.) A *direct* technical effect therefore seems to be absent.

The user of the system responds to the displayed information by activating selecting means to select a data file and cause the system to display it. (According to claim 1 the selection is only *enabled*, but the appellant has stated its preparedness to amend the claim to make the selection step obligatory; see point X above.) The user's evaluation of the information is a mental act. Like any cognitive process it is at least in part subjective, as the examining division has pointed out. Truly technical is thus only the system's response to the user's activation of the selection means. However, not only is the system response *indirect* since it is entirely dependent on the outcome of the mental act on the part of the user, but it is not even new: the system reacts on the selecting means in the same way as in the prior art. It may fetch a different data file than in the prior art, but if it does it is a mere reflection of the insight the user has gained from the mental act. Although this mental act will be influenced by the invention, such influence is not in itself a criterion of technicality.

A technical problem could therefore only be related to the implementation details of the method, as the examining division correctly concluded. In claim 1 however the implementation is only implicit.

4. It follows that the main request must be refused under Article 56 EPC 1973 unless the appellant is right in its assertion that the examination principles employed above are inappropriate. The two decisions referred to by the appellant which are said to challenge these principles will now be discussed.

5. T 49/04

5.1 The invention in issue was a method for obtaining an enhancing text presentation from a machine-readable, natural-language text on a display. The deciding board stated that, generally, "a feature which relates to the manner how the 'cognitive content', such as images, is conveyed to the user can very well be considered as contributing to a technical solution to a technical problem" (point 4.6.3). In the actual case before the board the technical problem was "to improve the text presentation, ie readability, on a display" (point 4.7). The solution according to claim 1 involved determining "a horizontal displacement for each text segment", including indentation. The deciding board, explicitly disagreeing with decision T 125/04 (see point 3.4 above), granted a patent. However, the present Board has some doubts whether this problem was in fact a technical one.

5.2 Decision T 49/04 states that the invention addressed the problem that most people preferred to read on paper since screen resolution and contrast were relatively low (point 4.1) and that it exploited and coped with technical aspects of a screen display such as evanescence and a limited viewing window (point 4.11). These technical "problems" and "aspects" of display

screens, which are not mentioned in the corresponding patent application (WO-A-98/06082), are not alleged to constitute technical problems in the usual sense of disadvantages that are overcome by an invention. The circumstance that they have nevertheless been introduced into the decision might suggest that the deciding board regarded presentations of information on a screen, in contrast to presentations on paper, as *ipso facto* technical. Pointing in the same direction is the board's statement that the invention would be "wildly impractical and indeed practically useless on a permanent print medium because of volume constraints" (point 4.11). But this view, if the deciding board actually held it, lacks support in Article 52(2)(d) EPC which contains no reference to particular media. Nor would it be logical to regard a screen as technical, but not paper. The screen is merely the more recent invention.

Also the jurisprudence of the Boards of Appeal provides little support for the idea that screen representations inherently address technical problems. The following quotation is from decision T 95/86 (*supra*), relating to an invention that involved text editing on a computer display:

> "4. As the Board already held in an earlier decision (T 186/86 of 5 December 1989, not published) it now finds that the activity of editing a text is principally concerned with linguistic and lay-out features of a text... the method as such aims at solving a problem which is essentially of a non-technical nature. The Board, therefore, finds that the activity of text editing

as such must be considered as falling within the category of schemes, rules and methods for performing mental acts and is excluded from patentability under Article 52(2)(c) and 3 EPC."

5.3 As a further point it is noted that although the invention in the case T 49/04 was found not to have been obvious to a person skilled in the art, no attempt was made to identify that person. There is however an indirect indication. In the course of the assessment of the inventive step the deciding board observed that a stylistic technique known as "enjambment" did not lead to the invention because it was a "poetic device" that hindered - rather than improved - readability for "aesthetic effect" (point 4.8). However, the EPC does not require improvements. Therefore the improved readability obtained by the invention was no more technical than the impaired readability resulting from an enjambment. In other words, if the invention was technical, so was the known "poetic device". Its technicality was not destroyed by any additional aesthetic quality. Thus, the person skilled in the art for the purposes of Article 56 EPC was in the deciding board's view apparently not necessarily a technically skilled person.

5.4 Because of the doubts set out above decision T 49/04 will not be followed. In the present Board's view, and contrary to the statements made in decision T 49/04, a feature which relates to the manner how cognitive content is conveyed to the user on a screen normally does *not* contribute to a technical solution to a technical problem. An exception would be if the manner

of presentation can be shown to have a credible technical effect.

6. T 643/00

6.1 The invention was an apparatus for searching for images stored in a storage device. The apparatus differed from the prior art in a functionality which allowed it, in response to user input, to decode and render a predetermined plural number of hierarchically encoded images, in the order of registration and at the lowest level of resolution, in separate portions of the display, and to select and render one of these images at any of four different levels of resolution, and to output a selected image or continue the search with the predetermined plural number of images next in the order of registration (decision, point 10).

6.2 The appellant has argued that case T 643/00, like the present invention, concerned a search tool and that the deciding board considered the activity of searching and retrieving data to be technical.

6.3 At point 17 of decision T 643/00 the technical problem is given as "an efficient search, retrieval and evaluation of images stored in an image processing apparatus". Since this wording is the basis for the appellant's formulation of the problem in the present case, viz an "efficient search, retrieval and evaluation of data records stored in a database" (see point 3.8 above), it deserves a comment. It is in fact an abbreviated version of the problem as it is formulated at point 14 of the decision: "the objective technical problem solved may be seen in *providing a*

technical tool for efficient search, retrieval and evaluation of images stored in an image processing apparatus" (italics added). The technical tool was thus an essential element of the invention. The aim is in itself not exceptional: any useful database permits the user to search for and retrieve data stored, which he is then free to evaluate if he so desires, and provides him with some sort of tool for this. Whether the same technical problem applies in the present case is of course a completely different matter since the technical problem is always a function of the particular invention and the particular closest prior art (see point 6.6 below).

6.4 The appellant has referred to T 49/04 citing the following passage from decision T 643/00 (the first sentence having been completed by the Board):

> "16. ... However, in its decision the Board [ie the board that decided the previous case T 244/00 "Remote-control/MATSUSHITA", not published in OJ EPO, which is here being discussed] has not excluded that an arrangement of menu items (or images) on a screen may be determined by technical considerations. Such considerations may aim at enabling the user to manage a technical task, such as searching and retrieving images stored in an image processing apparatus, in a more efficient or faster manner, even if an evaluation by the user on a mental level is involved. Although such evaluation per se does not fall within the meaning of 'invention' pursuant to Article 52 EPC, the mere fact that mental activities are involved does not necessarily qualify subject matter as non-

technical since any technical solutions in the end aim at providing tools which serve, assist or replace human activities of different kinds, including mental ones".

As the present Board understands the appellant's argument, this passage would imply for the present case that the visualisation results in an arrangement of menu items on the screen and contributes to the technical character of the invention (and thus to the inventive step) because it enables the user (better) to search and retrieve data. The visualisation, and in particular the element speed, therefore ought to be a technical feature or at least contribute to a technical effect.

6.5 The Board notes that the passage cited by the appellant contains expressions such as "may" and "not necessarily", demonstrating that the deciding board did not hold that *any* arrangement of menu items on a screen involved technical considerations. This is also clear from the fact that the arrangement in the previous case T 244/00 was found to involve no technical considerations, leading the deciding board in that case to state that "the arrangement of the menu items on the screen, if it is not exceptionally determined by technical considerations, is not a technical aspect of a menu-driven control system" (T 244/00, point 12).

The present Board agrees with this view. As has already been noted, if a presentation of information can be shown to produce a technical effect it is, by virtue of Article 52(3) EPC, not barred from patentability.

6.6 Furthermore, the above quotation must be read in its context. The menu items with which decision T 643/00 was concerned were normal (binary encoded) images. It was a part of the solution that several images were displayed simultaneously so that comparisons between them could be made (point 10), and the desired technical tool had to be designed in a corresponding way. In the present invention there are also a number of simultaneously displayed elements that may be compared, but this arrangement was known and therefore not a part of the solution. Only the speed feature has been added, a feature having no correspondence in the earlier case since the images were not visualisations of data. Therefore, the respective improvements of the "tools" (displays) are not comparable, nor are the problems they solve.

7. To summarise, the Board sees no fundamental discrepancy between its approach to judging the patentability of an invention involving presentations of information taken in the present case and the approach taken in T 643/00.

8. Thus, as concluded at point 4 above, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

9. The appellant has stated its willingness to add certain extra features of the visualisation method (see point X above). Besides the selection feature already taken into account (see point 3.8 above) these features could however only serve to distinguish the new visualisation scheme from the known one without adding a technical effect. Therefore their introduction in claim 1 would not lead to a different outcome.

Auxiliary request 1

10. Claim 1 according to auxiliary request 1 concerns the way the trajectory over the screen is computed: the elements move in steps into respective new positions, a new movement vector for each element being calculated at each step from its respective new position.

11. This feature concerns the implementation of the method on the screen. It may not be quite clear if this particular implementation is actually technical since the computed trajectory serves to present information and the way of computing it is a mathematical method, similar to the graphical rendering of any mathematical function. However, this question need not be decided since the feature involves no inventive step. The determination of the movement vector is as such clearly elementary. The only relevant question is thus whether it would have been obvious to compute it at each step. The appellant has argued that this represented an inventive solution to the problem of computing curved trajectories having the advantage that it was less complex than computing the entire trajectory in advance. The Board agrees that there may well exist more complex ways of computing the trajectories, but this fact alone does not demonstrate the non-obviousness of the claimed solution. The issue is only whether the invention involves an inventive step, not whether mathematically more complex alternatives to it can be imagined. In the present case the Board regards the invention as an obvious first choice: especially in the disclosed variation of the described embodiment where the attraction of sites varies in time, leading to curved

trajectories, it would still be easy to compute the movement vectors for any given point in time. To repeat this computation at short intervals to form an (approximate) trajectory was, in the Board's view, clearly within the reach of a mathematically skilled person. Thus, this request is also refused (Article 56 EPC 1973).

Auxiliary request 2

12. According to auxiliary request 2 the initial position is substantially common to all elements and equidistant from all sort statement sites. These features define the visualization itself and therefore the reasoning with respect to the main request applies to them as well. Thus, these additional features do not render the invention non-obvious, and the appellant's second and last auxiliary request must also be refused (Article 56 EPC 1973).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

T. Buschek S. Steinbrener