

This document includes some recent decisions of the EPO in 2018 with regards to software related inventions and shows relevant extracts from the respective decisions.

T 2052/15 (Asynchronous antivirus processing/KASPERSKY) of 19.6.2018

European Case Law Identifier: ECLI:EP:BA:2018:T205215.20180619

Asynchronous processing of events for malware detection

Inventive step - after amendment (yes)

Application number: 10176515.4
IPC class: G06F 21/00
Applicant name: Kaspersky Lab, ZAO

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t152052eu1.pdf>

The independent claim 1 reads as follows:

"1. A method for asynchronous processing of system events (210) on a computer system, the method comprising:

- (a) detecting a system event (210) on the computer system and intercepting the system event for filtering, wherein the system event (210) comprises a system call;
 - (b) filtering the system event (210) through at least one filter (240) to determine if the system event (210) matches a security criteria [sic];
 - (c) if the system event (210) does not pass through at least one filter (240), sending the system event for further processing; and
- if the system event (210) passes through the at least one filter (240), creating a copy of the system event (210) which is passed through the at least one filter (240) for asynchronous anti-virus processing the copy of the system event (210), and releasing the original system event (210) so that the process which caused the event continues its uninterrupted execution;
- (d) placing the copy of the system event (210) into a queue for asynchronous anti-virus processing;
 - (e) creating a control record based on the event copy by using information about the event;

(f) deleting the copy of the system event (210) from the queue;

(g) performing asynchronous anti-virus processing on the control record of the system event (210), wherein the asynchronous anti-virus processing of the control record comprises a signature scanning of the control record of the system event (210) and analysing the process that caused the system event by executing the process in an emulator and by generating a behavior log for the process and terminating the process that caused the system event (210), if the anti-virus processing reveals a malicious nature of the system event (210); and

(h) for a process that has behavior differences compared to a previous known non-malicious version of the process but also substantial similarities to the previous known non-malicious process, classifying the process as non-malicious."

Article 84 EPC

3. Claim 1 comprises **some very broad features**.

3.1 The control record is created from the queued copy of the system event to be analysed and undergoes "**signature scanning**" (see claim 1, lines 9-10, and steps (e) and (g)) and must thus be construed as a data structure. Compared with the copy of the system event, the control record contains **some additional - albeit undefined - "information about the event"**. The control record and the copy of the system event are therefore different from each other. Although the **signature scanning of the control record (see step (g)) is not further defined in the claim**, the board takes the view that **the skilled person would interpret it, by analogy with the signature scanning of program code** (as explained on page 2 of the description, in paragraph 2), as a **comparison of the control record with predetermined patterns** in order to determine whether it represents a malicious or non-malicious system event.

3.2 Step (h) specifies that a process may be found to be non-malicious - even though it has "**behavior differences**" from a known non-malicious process - **if it also has "substantial similarities"** to that process. This **feature does not define what similarities are considered or which ones might be considered "substantial"** enough for the process under consideration to benefit from the classification of the earlier process as non-malicious. **The board understands this feature to imply, in very broad terms, that the decision whether a process is malicious is based on behaviour and code similarity.**

3.3 The board considers that **the breadth of these features does not render the claims unclear.**

T 2488/11 (Quality Control/ROCHE) of 23.5.2018

European Case Law Identifier: ECLI:EP:BA:2018:T248811.20180523

A system and a method for managing sample test results and respective sample result context information

Inventive step - (no)

Application number: 06011417.0
IPC class: G06F 19/00
Applicant name: F. Hoffmann-La Roche AG, Roche Diagnostics GmbH
Cited decisions: T 0641/00

Board: 3.5.05

<http://www.epo.org/law-practice/case-law-appeals/pdf/t112488eu1.pdf>

Claim 1 of the main request reads as follows:

"A system for quality control of sample test results and respective sample result context information within a laboratory environment, the system comprising:

- at least one analytical unit (20) configured to run at least one test on a sample and to upload a received sample test result of the at least one sample test together with respective sample result context information to a management unit (10), the sample result context information including a reagent lot number of a reagent package which has been used for the at least one sample test, and a quality control lot number of a quality control material used for a quality control measurement made in connection with the sample test;

- a barcode scanner (30) being configured to scan barcode information from a two dimensional barcode which is available on each reagent package and each quality control package and which provides reagent lot information and quality control information as a further part of the sample result context information, and further configured to transfer the scanned barcode information to the management unit (10),

- the management unit (10) connected with the at least one analytical unit (20) for data interchange, wherein said management unit (10) is configured to save and display on demand sample test results and respective sample result context information, to control dynamically at least one actual stock of the respective one of a reagent material and a quality control material as at least one item of the respective sample result context information with respect to a predefined minimum value and to initiate at least one of an output of a signal and a re-ordering of the respective one of the reagent material and the quality control material as soon as the actual stock of the respective material corresponds to the predefined minimum value according to a predefined execution plan schedule."-

1. Main request - Inventive step (Article 56 EPC)

1.1 It is common ground between the examining division and the appellant that D3 forms the closest prior art. In the contested decision the examining division considers the distinguishing features of claim 1 over D3 to constitute "the implementation of an administrative scheme,

namely how to manage information that allows a reliable quality control and inventory reordering for stock management in a laboratory environment". The objective technical problem is then formulated, with reference to T 641/00, as how to "implement this non-technical constraint" and the solution is found to be a straightforward "alternative use of a commonly known bar [sic] scanner".

1.2 The appellant disputes the assessment of the examining division and argues that the invention provides for "enhanced quality control" and that the provision of test results with higher quality "unquestionably solves a technical task". It also formulated, at the oral proceedings, the objective technical problem solved by the invention along these lines as the provision of a more efficient and reliable system for "quality control" of tests in a laboratory.

1.3 Both the examining division and the appellant refer to "quality control" in their argumentation. In the board's view, however, **assessing the inventive step involved in the invention under this umbrella term is not appropriate**.

1.3.1 A correct assessment of the inventive step requires a closer look at what the invention indeed achieves. The invention addresses two problems of clinical laboratories in the prior art:

(i) **a regulatory or legal obligation to record, besides patient sample test results, additional information regarding the context in which a certain test was performed** (see the description, page 1, penultimate paragraph to page 2, first paragraph);

(ii) **managing the stock of different materials** (reagents, quality control materials and calibrator materials) needed in the laboratories to perform tests (see the description, page 2, third and fourth paragraphs).

1.3.2 When the problems addressed by the invention are put in this perspective, **the board cannot follow the argument that the invention provides "test results with higher quality". Recording additional information about a test does not increase the precision of the test itself**. Likewise, **guaranteed availability of sufficient amounts of materials for tests** in a laboratory through proper stock management may enable a laboratory to perform a certain test at any time, but **does not effect the precision of the specific test results**.

1.3.3 The appellant drew the board's attention at the oral proceedings to the fact that the quality of biological samples such as blood deteriorates after they are drawn, and argued that the availability of materials to perform a laboratory test as early as possible therefore had an impact on the quality of the test results and was technical. The **board asked the appellant whether a night shift enabling laboratory clerks to perform tests as early on as possible would also increase the quality of the tests and if it should therefore be seen as technical**, to which the appellant replied in the affirmative. In the board's view, however, **this plainly demonstrates the unsuitability of umbrella terms such as "quality control" or "quality" for the assessment of inventive step, for they merely lead to confusion between diverse and unrelated problems, such as quality of service, effective management, process quality and precision of a clinical test, most of which are not technical**.

1.4 The board judges the two problems identified supra under 1.3.1 to be distinct and unrelated. It further finds both **problems not to be technical**:

(i) **Logging or documenting the execution details of tests carried out in a laboratory, irrespective of the technicality of the tests themselves, is not technical.** The extent of such documentation, as suggested by the description, is usually imposed by national regulations, international standards or internal quality SOPs. The board concurs with the contested decision that these constitute non-technical constraints to be met in the sense of T 641/00, Headnote 2.

(ii) **Stock management is, as such, primarily a business problem and not a technical one.** The fact that stock management is carried out in a laboratory does not change this finding. A clerk regularly checking empty vials of materials used in a laboratory and re-ordering low-stock items does not carry out a technical task.

1.5 The board does not even deem it necessary to start from D3 to assess the inventive step involved in claim 1. In the board's view, any prior-art distributed laboratory environment, as described in the section "Background of the Invention" of the description (pages 1 to 3), would suffice as a suitable starting point to demonstrate the lack of an inventive step in claim 1.

1.6 Starting from such a prior-art laboratory environment:

(i) If the documentation requirements of the laboratory require saving the reagent lot number of the reagent used and the quality control lot number of the quality control material used together with test results, it would be obvious to save and display the same on demand.

(ii) The only technical means used for the solution of the stock management problem are computers and barcode scanners. However, at the filing date of the application, barcodes were ubiquitous on packages of all kinds of products and the use of computers and barcode scanners for stock management was notoriously known.

1.7 Therefore the distinguishing features of claim 1 of the main request do not involve an inventive step (Article 56 EPC) and the appellant's arguments to the contrary do not convince the board.

T 0678/14 (Data-warehouse application programs/SAP) of 22.6.2018

European Case Law Identifier: ECLI:EP:BA:2018:T067814.20180622

Data processing system and method for application programs in a data warehouse

Novelty - main request (yes)

Application number: 04734840.4
IPC class: G06F 17/30
Applicant name: SAP SE

Board: 3.5.07

<http://www.epo.org/law-practice/case-law-appeals/pdf/t140678eu1.pdf>

2. The invention

2.1 The invention relates to data warehouse computer systems and online analytical processing (OLAP). The background section of the application explains that OLAP services, which are part of most data warehouse systems, provide a global view of the data stored in the data warehouse which can be "drilled down" into the particular data of interest to the user. The Board notes that such a global view of the data is typically referred to as an "OLAP cube", which is essentially a multidimensional summary of the data along dimensions such as "product", "year" and "customer". The background section specifically mentions the "SAP business information warehouse" as an example of a data warehouse.

2.2 According to the last paragraph of the background section, it is a common disadvantage of prior-art data processing systems that the assignment of data tables to be processed by application programs and the selection of the output format of the data processing are tedious and error-prone tasks which often involve a substantial amount of manual interaction. There is therefore a need for a data processing system and method that reduces the amount of user interaction.

2.3 The invention as claimed concerns a data processing system having a set of application programs, where each application program is operable to process one or more "pre-defined classes" of database tables and to store the processing results in an OLAP cube from a "pre-defined class" of OLAP cubes. **To reduce the amount of user interaction, it proposes a first mapping table for mapping database tables to predefined classes of database tables and a second mapping table for mapping OLAP cubes to predefined classes of OLAP cubes.** Using an "interface means", the user can select an application program and specify the mappings of the first and second mapping tables. The selected application program is then executed by reading "the database tables assigned to the pre-defined classes of database tables" by the first mapping table and storing the processing results in "one of the online analytical processing cubes of the set of online analytical processing cubes that is assigned to the pre-defined class of online analytical processing cubes" by the second mapping table.

3. Main request - novelty

3.1 In point 10.1 of its reasons, the contested decision lists the features of claim 1 together with references to passages of document D3 allegedly disclosing those features.

3.2 According to the decision, the feature "a relational database of a data warehouse for storing a set of database tables" is anticipated by the phrase "the methods are generic and applicable to any data warehouse design" in the abstract of document D3.

The Board notes that several passages of document D3 do in fact disclose a relational database (see e.g. page 6, lines 22 and 23, and page 7, lines 16 to 20; the abstract itself refers to "relational OLAP" and "relational implementation schemas"). But the phrase cited by the Examining Division does not. **Even if "any data warehouse design" were to be understood as "a data warehouse comprising any type of database", the generic disclosure "any type of database" would not take away the novelty of the specific disclosure "a relational database".**

3.3 For the claim feature "a set of application programs, each application program operable for processing one or more pre-defined classes of database tables and for storage of the result of the processing in an online analytical processing cube of a pre-defined class of online analytical processing cubes using the online analytical processing component", the decision refers to page 5, lines 20, 21 and 30 to 32, and to Figure 1 of document D3.

This feature refers to applications that process data contained in database tables and store the results in an OLAP cube. The database tables being processed belong to one or more "pre-defined classes of database tables", and the OLAP cube belongs to a "pre-defined class of OLAP cubes".

The sentence in document D3 on page 5, lines 20 and 21, reads: "The current invention reveals processes that transform a set of heterogeneous measurements, i.e. relations, into multidimensional data cubes, i.e., hypercubes".

The passage on page 5, line 30, to page 6, line 1, reads: "Fig. 1 is a block diagram illustrating an exemplary hardware setup required to implement the preferred embodiment of the present invention. A client/server architecture is illustrated comprising a database server 101 and an OLAP server 102 coupled to an OLAP client 103".

Figure 1 schematically shows a system 100 comprising a database 101, an OLAP server 102 and an OLAP client 103, the system being connected via a network 104 to "other systems" 105.

Presumably, the Examining Division considered the "processes" mentioned on page 5, lines 20 and 21, of document D3 to correspond to the "application programs" of the claim. Those processes arguably process data contained in a database table (i.e. "relations") and store the result in OLAP cubes ("multidimensional data cubes"). The cited passages do not, however, disclose that there are different processes, each process having been designed to process database tables of one or more predefined classes of databases tables and to store the results in an OLAP cube of a predefined class of OLAP cubes. **They therefore do not disclose the claim feature under consideration.**

3.4 In respect of the first and second mapping tables, the Examining Division referred to page 7, lines 26 to 30, page 8, lines 31 to 32, and Figure 2. It explained that **"'table' in the application can refer to any collection of data" and that "the definition of names for the application mapping is implicitly disclosed".**

The passage on page 7, lines 26 to 30, reads: "The measurements 203, 204, 205 and 206, as shown [in Figure 2], are selected such that they agree on overlapping dimensions and can

therefore be joined, using the natural join, to form a larger composed measurement 207. The composed measurement 207 is referred to, here, as a point in a multidimensional cube, i.e., a hypercube, with dimensions numbered by the sequence 201".

The sentence on page 8, lines 31 and 32, reads: "As relations are selected for multidimensional processing in a hypercube, each of the domains supporting the relations is associated with a dimension in the hypercube."

Figure 2 shows the following "Logical View":

FORMULA/TABLE/GRAPHIC

The document explains on page 7, lines 4 to 25, that Figure 2 is a "high level illustration of a join process associated with multidimensional analysis". It shows four "measurements" numbered 1, 2, 3 and 4 identified by reference signs 203, 204, 205 and 206. A measurement is "a collection of related attributes/values from a stored or derived relation".

The Board is unable to see how the passages cited by the Examining Division could be seen as disclosing the claimed first and second "mapping tables". There is no concept in these passages of "classes" of database tables and "classes" of OLAP cubes, let alone of such classes in connection with the "processes" mentioned on page 5, lines 20 and 21.

3.5 The decision further suggests that the claimed "interface means" is disclosed on page 9, lines 3 to 10, of document D3.

The cited passage states that "[t]his mapping of domains to dimensions, and the naming of dimensions, is controlled by the user of the system performing the multidimensional processing or OLAP". **The Board agrees that this implies the presence of "interface means", but it does not see why a mapping of "domains" to "dimensions" should correspond either to the first mapping of database tables to predefined classes of database tables or to the second mapping of OLAP cubes to predefined classes of OLAP cubes.** Indeed, the passage mentions, as an example, a mapping of the "Age" domain to the "Age-Diagnosis" and "Age-Location" dimensions in a hypercube. The "Age" domain is neither a database table nor an OLAP cube, and dimensions in a hypercube (i.e. dimensions in an OLAP cube) can be equated neither to classes of database tables nor to classes of OLAP cubes.

The cited passage also fails to disclose the claimed user selection of an "application program" (or "process").

3.6 Finally, the "processing means" feature of claim 1 specifies how the "application programs", "mapping tables" and "classes" fit together: the selected application reads the database tables that are mapped, by the first mapping table, to the predefined classes of database tables associated with the selected application, and it stores the processing results in one of the OLAP cubes that is mapped, by the second mapping table, to the predefined class of OLAP cubes associated with the selected application.

According to the contested decision, these features are **disclosed on page 9, line 25, to page 10, line 20, and in Figure 3**. But Figure 3 merely illustrates the example "Age" domain, the passage on page 9, line 25, to page 10, line 6, describes Figure 3, and the passage on page 10, lines 9 to 20, relates to "hierarchies and their level sets", defining "a hierarchical function on the domain".

3.7 In view of the above, **the Board agrees with the appellant that the contested decision's reasoning is not convincing and that document D3, apart from relating to an OLAP system, has little in common with the invention as claimed. In particular, there is no disclosure in document D3 of the user-configurable mappings of claim 1**. Hence, the subject-matter of claim 1 of the main request is new over document D3, and the same applies to the subject-matter of the corresponding independent claims 4 and 7.

T 0841/16 (Business rule interface/AB INITIO) of 5.6.2018

European Case Law Identifier: ECLI:EP:BA:2018:T084116.20180605

EDITING AND COMPILING BUSINESS RULES

Inventive step - all requests (no)

Application number: 08732897.7
IPC class: G06F 9/44, G06N 5/04
Applicant name: Ab Initio Technology LLC
Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t160841eu1.pdf>

4. Like the appellant, **the board finds it unrealistic to assume that a programmer (i.e. the skilled person) would start from a known user interface and search for new applications to be equipped with them. Conversely, programmers would normally look for a suitable user interface to enable users to get a given job done. The board thus also agrees that a well-known user interface is an inappropriate starting point** for the assessment of inventive step in the present case.

5. Instead, the board follows the appellant's suggestion of starting from the "status quo in the field of graph-based computation", on the above proviso (see point 2), however, that "graph-based computation" must be construed broadly.

5.11 The appellant also insisted that the claimed "simple and targeted (or "surgical")" modification of only a single component of a computation graph without affecting the rest was, in practice, less obvious than it might seem, due to implementation details such as how many files the business rules were stored in or how the interfaces between the computation graph components were specified. **The board accepts that problems of this type may arise in practice and that solving them might involve significant work, but observes that such**

implementation details are not claimed and can, therefore, not be invoked in order to support an inventive step in the present case.

5.12 The board concludes that the claimed invention is an obvious solution to the problem of simplifying the input of business rules into a graph-based computation system and therefore lacks inventive step in view of common general knowledge in the art, Article 56 EPC.

T 2307/12 (Browser document editing/CIMPRESS SCHWEIZ) of 13.3.2018

European Case Law Identifier: ECLI:EP:BA:2018:T230712.20180313

System and method for browser document editing

Inventive step - all requests (no)

Application number: 11169565.6
IPC class: G06F 17/21
Applicant name: Cimpres Schweiz GmbH
Cited decisions: T 0095/86, T 0186/86, T 0641/00, T 1143/06

Board: 3.5.07

<https://www.epo.org/law-practice/case-law-appeals/pdf/t122307eu1.pdf>

The invention

2. The application relates to the editing of text in a document displayed in a browser (see paragraph [0001] of the published application). The browser uses a document object model (DOM) which is an interface allowing programs to access and change the content, structure and style of the documents. Any changes are dynamically incorporated back into the page displayed in the browser to the user (see description, paragraphs [0002] and [0003] and Figure 1). According to the application, a shortcoming in the prior art that limits the ability of users to design documents in a browser is that browsers typically do not provide a full range of editing options for certain types of editing.

3. The invention provides a system and method that works with the DOM to enhance the document-editing abilities of the browser (description, paragraph [0013]). An editing program using the browser application programming interface (description, paragraph [0023]) and running in the browser contains computer code that is activated by certain edit requests from the user. The program supplies a substitute edit request to the browser in place of the request received from the user. The DOM is then accessed and edited to remove the portion of the DOM related to the substitute edit request and insert appropriate tags to achieve the original edit request (description, paragraph [0013]).

In a preferred embodiment, the predefined substitute edit request is to render the character(s) selected by the user in a predefined colour (see paragraph [0040]). For a very brief time between performing the predefined substitute edit action and the completion of the revision of the DOM with the user's edit request, the DOM will contain the result of the substitute edit. Consequently, for a certain time period, the selected characters are rendered in the predefined colour. However, this time period is so brief as to be imperceptible to the human eye under normal operation (see paragraph [0041]).

Claim 1 of the main request reads as follows:

"A method for revising the object model of a document in a browser (102), the method comprising the steps of:

running an edit tool (105) in said browser (102), and, in response to a predetermined document edit request made by a user, said edit tool being implemented to:

- supply a predetermined substitute edit request to the browser (102) to cause the browser (102) to revise the object model by a placeholder element reflecting the predetermined substitute edit request, and

- access and edit the object model after revision, so as to achieve the intent of the document edit request made by the user, by replacing the placeholder element by an element corresponding to the edit as requested by the user."

8.4 The Board considers that the overall effect of the claimed method, when interpreted in the light of the description, is to allow the user to edit the text in the document displayed within a browser with a full range of editing options including formatting options which are not supported by the browser software. The Board considers that **the activity of editing and formatting of text is, apart from any technical means used, essentially a non-technical activity**. In this respect, the Board refers to decision T 186/86 of 5 December 1989, which states in its Reasons, point 3, the following: "**The activity of editing a text is principally concerned with linguistic and lay-out features of a text but, when performed with the aid of a machine (text processor), will have to include further steps for inter alia presenting to the human operator the text to be edited in a form suitable for that purpose and steps for storing and/or reproducing the finalised text. The whole editing method, however, has for its purpose the creation of a text having a desired information content and lay-out, which means that the method as such aims at solving a problem which is essentially of a non-technical nature.**" That editing as such is not of technical nature has also been confirmed by later decisions of the boards of appeal (see decision T 95/86 of 23 October 1990, reasons 4).

8.5 In the present case, the provision of **further editing options including formatting options not supported by a browser does not serve a technical purpose as it concerns the presentation of text displayed in the browser in a specific manner as required by those further editing options to a human reader**. As the presentation of information as such is regarded as not technical (Article 52(2)(d) EPC), the Board considers that a presentation of text in accordance with the chosen editing/formatting options does not contribute to the solution of a technical problem. In this respect the Board cites decision T 1143/06 of 1 April

2009, which states in point 5.4 that "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".

8.6 According to the established case law of the boards of appeal, when assessing inventive step in accordance with the problem-and-solution approach an aim to be achieved in a non-technical field may legitimately be added to the problem as a constraint to be met (see decisions T 641/00, OJ EPO 2003, 352; T 154/04, OJ EPO 2008, 46). **Hence, the aim to allow editing options not supported by the browser may be added to the problem as such a constraint. It follows that the appellant's argument that document D1 could not suggest the claimed solution as the Pardalote system was limited to lightweight in-line editing without any formatting functionality does not persuade the Board.**

8.7 At the oral proceedings, the appellant argued that the objective technical problem was how to identify in the DOM the changes made by the user when a change is made to a text-containing element of the document and that change is an editing action such as a format change which is not supported by the browser.

8.8 The skilled person trying to solve the problem posed would first consider solutions which involve a relatively low development effort as the skilled person would consider reusing existing software as far as possible. For this reason, the appellant's argument that the skilled person would rather use a "brute force" approach to solve the problem, even if this involved a massive development effort, does not convince the Board.

8.9 As D1 already discloses editing text elements in a text box and uses a DOM to implement the edit requests, the skilled person recognises that he needs to figure out how to implement in the DOM edit actions not supported by the browser. In the context of the present application, an edit action involves two aspects: identifying the start and end position in the text and the operation (such as changing the font size) which is applied to the text.

8.10 As the DOM implementation is part of the browser software, **the skilled person would consider that the identification of the changes in the DOM is best done by the browser itself. For this purpose, it was obvious to use a substitute edit action, which is applied to the same text string as the user's intended edit action.** As it was well-known to use mark-up elements for the definition of start and end positions within documents (see e.g. D1, page 92, left-hand column, last paragraph), the skilled person would have implemented the claimed solution, which consists essentially of the use of a predefined substitute edit action which inserts into the DOM a placeholder such as a special mark-up element to define the start and end positions in the text to which the edit action applies and which later replaces the placeholder in the DOM with an element representing the intended edit action.

8.11 As the application does not disclose how the replacement of the placeholder in the DOM is implemented and as the appellant argued in the oral proceedings that the skilled person would be able to implement this step based on his common general knowledge, the implementation of step (c) of claim 1 has to be regarded as obvious.

T 1868/15 (Backup Management/APPLE) of 16.5.2018

European Case Law Identifier: ECLI:EP:BA:2018:T186815.20180516

USER INTERFACE FOR BACKUP MANAGEMENT

Inventive step - after amendment (yes)

Application number: 07813605.8
IPC class: G06F 9/44
Applicant name: APPLE INC.
Cited decisions: T 0643/00, T 1143/06, T 0336/14

Board: 3.5.06

<https://www.epo.org/law-practice/case-law-appeals/pdf/t151868eu1.pdf>

The invention

2. The application relates to a graphical user interface for a backup system which supports users in finding and reverting to earlier versions of individual files "or other items" or "elements", such as parameter settings (see, for example, paragraphs 4, 35, 43 and 45; figures 1 and 2; all references being to the application as originally filed).

2.1 Like conventional backup systems, the disclosed system repeatedly stores copies (termed "snapshots" in the claims) of the data of interest (see figure 2).

2.2 The user interface according to the invention displays a "current view" of a "window" with its elements, along with a "history view including a number of visual representations of earlier views" of that window. Each window represents the (current or previous) state of the system at a "location" of interest, for instance a particular folder within a local or external storage device. These views are referred to as "snapshots" (see paragraphs 5, 60 and 61).

2.3 The invention proposes to arrange the snapshots of a "history view" along a "timeline". Several examples of such a history view are disclosed. For instance, individual views may be displayed in a calendar, on a stack, as a "book" or along an actual line (see figures 6 to 14, paragraphs 83, 85, and 92 et seq.).

2.4 The invention further enables users to navigate through the history view using suitable interface control elements (see for instance item no. 902b in figures 9 to 13), or the history view may be "animated" (see paragraphs 96 to 97 and figure 10).

2.5 The proposed user interface is aimed at supporting users in finding the earlier version of a file (or other item) of interest to which they want to revert. At that point, users may select (e.g. click on) the located item which will cause a "backup restoration engine" (see figure 2, item no. 222) to restore the earlier version (see paragraph 56).

Claim 1 reads as follows:

Examples of recent 2018 Board of Appeals decisions related to Software Innovations

"A computer program product tangibly embodied in an information carrier, the computer program product including instructions that, when executed, generate on a display device a backup graphical user interface (300) comprising:

a view display area that presents a current view of a window,

an input control that, when selected, causes restoration of the window in accordance with a user-selected portion of an earlier version of the window,

the view display area further presents a plurality of snapshots (304a-d; 702; 704; 802; 804; 900) that animatedly move in the view display area in response to user selection of one or more navigation tools (307a-b; 308a-b; 902a-b), wherein each snapshot as presented in the view display area (304a-d; 702; 704; 802; 804; 900) includes a visual representation of the elements of a corresponding earlier version of the window, the earlier version of the window including one or more elements that are selectable by a user for restoration; and

wherein a first snapshot of the plurality of snapshots includes a first element that a user can select: [sic]

wherein selection of the first element triggers corresponding selection of that element in the displayed snapshots; and

wherein selection of the input control, after selection of the an [sic] element in a snapshot, causes restoration of the window with only that element in that first snapshot being restored."

nventive step, Article 56 EPC 1973

6. Based on the above interpretation of "window", "snapshot" and "elements" (see points 4 and 5), the board considers that D5 discloses a backup graphical user interfaces that comprises a "current view of a window" (the "Realtime mode"; see figures 6 and 7A and paragraphs 50, 55, 57) and "a view display [that] presents [an individual] snapshot[]", which, in turn, "includes a visual representation of a corresponding earlier version of the window" (the "History mode"; see figures 6 and 7B, and paragraphs 75 and 76). D5 also discloses that the view display changes "in response to user selection of one or more navigation tools" (the "Timeline" and its "Components"; see paragraphs 79 to 91 and the corresponding figures). In D5, however, users can only select and work on a single "past" point in time. Also, D5 does not allow users to "cause restoration" of an element in a snapshot by clicking on it, but requires the use of an undefined "wizard".

7. D5 thus does not disclose that

(a) several "snapshots", each representing earlier versions of a "window", are displayed at the same time;

(b) selection of an element triggers corresponding selection of that element in the displayed snapshots;

(c) the "snapshots" move or "animatedly move" in response to the user manipulating the timeline;

(d) selection of the input control, after selection of an element in a snapshot, "causes restoration of the window with only that element in that window being restored".

7.1 Feature (d) solves the problem of providing simpler access to the function of restoring a file or other item or object. The board considers that it is a **standard problem for the user interface designer to reduce the number of "clicks" required to perform certain functions.** Specifically, it would have been natural for users to spot, in the window 7B, a file to be restored, and also that they wanted the restoration to require as few clicks as possible. Enabling users to select a file of interest and an input control to "cause" its restoration would, in the board's judgment, have been a **conventional and obvious solution to address the users' desire.**

7.2 **Feature (c) does not solve a technical problem.** D5 discloses that the snapshot changes with the time selected by the user. The board understands this to mean that a snapshot disappears and a new one, corresponding to the selected time, appears. **That the snapshots "animatedly move" in the process has, in the board's judgment, a merely aesthetic value, and thus no effect in a field not excluded from patentability** (see Articles 52(2) b) and d)). This is consistent with the animations specifically disclosed in the application (see e.g. paragraph 92). In particular, the animation does not contribute to the problem "of efficiently locating and restoring a past version of a file" (see the grounds of appeal, point 24).

7.3 As regards **features (a) and (b)**, the board considers that, in the context of the claimed backup graphical user interface, they do indeed **"facilitate the efficient searching and restoration of a past version of a file"**. A user trying to restore the past version of a file will, in particular, be able to (i) navigate to an earlier point in time at which a version of the file of interest was saved, (ii) select that file and see, since "corresponding" elements in the other displayed snapshots will also be selected and simultaneously displayed, whether "corresponding" files were saved at other points in time, (iii) navigate to such another point in time and then, (iv) cause the restoration of the selected element in the so-selected snapshot.

7.4 The board also considers that **features (a) and (b) in combination are not suggested by D5 nor obvious** in view of common general knowledge in the art.

8. It remains to be decided whether the stated problem is indeed a technical one.

8.1 **In T 643/00, it was found that "providing a technical tool for efficient search, retrieval and evaluation of images stored in an image processing apparatus" could be such a technical task** (see catchword and point 14 of the reasons; see in this regard also point 6.3 of T 1143/06). The board agrees with this finding. Furthermore, **although the case underlying T 643/00 related to a resolution-based image arrangement and was thus image-specific, the board considers that the ratio of T 643/00 also applies to technical tools for the searching of digital objects other than images.**

8.2 In T 336/14 (see catchword), it was found that "In the assessment of inventive step of a claim which [relates to] a graphical user interface (GUI) [...] **it has to be analysed whether**

the GUI together with its content presented credibly assists the user in performing a technical task [...] by means of a continued and/or guided human-machine interaction process". In an obiter dictum, T 336/14 also confirmed the cited conclusion of T 643/00 (see point 1.2.6 of the reasons).

8.3 The board endorses the stress laid by T 336/14 on the relevance of whether the user-interface in question assists the user "by means of a continued and/or guided human-machine interaction process".

8.4 In the board's judgment, the presently claimed invention provides GUI elements which, in combination, provide a technical tool supporting the user in searching for the earlier version of a file by means of such a guided human-machine interaction process (see point 7.3 above).

8.5 Accordingly, **the board concludes that features a to b solve a technical problem.**

T 2330/13 (Checking selection conditions/SAP) of 9.5.2018

European Case Law Identifier: ECLI:EP:BA:2018:T233013.20180509

Method and system for checking consistency and completeness of selection conditions in a product configuration system

Inventive step - mixture of technical and non-technical features

Application number: 04022865.2

IPC class: G06F 17/50, G06F 17/60

Applicant name: SAP SE

Cited decisions: G 0003/08, T 0208/84, T 0935/97, T 1194/97, T 0049/99, T 0641/00, T0424/03, T 0154/04, T 1351/04, T 1784/06, T 1954/08, T 0042/09, T 0426/09, T 0042/10, T 1321/11, T 1965/11, T 0969/12

Board: 3.5.07

<https://www.epo.org/law-practice/case-law-appeals/pdf/t132330eu1.pdf>

The invention

2. The present application relates to a method for efficiently checking the consistency and completeness of selection conditions for components of a configurable product (see paragraph [0001] of the A publication). It can be used, for instance, for the purpose of assembling an automobile model from a catalogue of parts according to a particular set of design specifications, in order to ensure that the combinations of parts are correct (paragraph [0003]).

2.1 The invention can be implemented as part of software for product design and manufacture, and can be used in association with a product configuration system. According

to the description, "configurable" means, among other things, that by entering specific values for characteristics of an end product, an end product tailored to, for example, particular customers or markets may be defined. The configuring process may generate a list of components referred to as an "order bill of materials" (order BOM) that describes everything needed to produce a given end product according to some specific customer or production order. The BOM may be configured from an overall structure of nodes and associated variants. The specific values for the characteristics could be entered, for example, via a graphical user interface (paragraph [0011]).

2.2 In the overall structure of nodes used to configure the BOM, a node may represent a function in a product or an abstraction of concrete materials corresponding to a component. Variants are associated with a node and represent concrete realisations of the node's component. A top-level node may represent an end product, such as a compact car, and have high-level variants such as a model "A" and a model "B" of the compact car. As the node structure is traversed from high-level to low-level nodes, the nodes represent components of the end product at progressively finer levels of granularity. For example, a node could represent a specific engine component, and associated variants could represent three different possible concrete realisations of that specific engine component (Figure 1, paragraphs [0012] to [0015]).

Further, there may be selection conditions associated with variants, which are user-defined criteria for determining whether or not to allow a given variant to be included in an order BOM (paragraph [0016]).

2.4 According to the description, the method is significantly faster than prior-art methods because it uses bit operations to evaluate the selection conditions (paragraph [0009]).

Paragraph [0039] describes an embodiment in which the variance space bit matrix is split into sub-matrices which can be processed "in parallel to save time, or serially to save memory".

5. Article 56 EPC - inventive step

5.1 In the decision under appeal the **Examining Division denied inventive step without referring to any particular piece of prior art. It considered that, apart from the computer implementation, the features of claim 1 of the then pending requests contributed only to the solution of the mathematical problem of rule checking, and were therefore not relevant for assessing inventive step. Since computers were well-known, the claimed invention was obvious.**

5.2 The claimed invention unquestionably contains elements of a mathematical/logical nature. In particular, claim 1 of the amended main request inter alia specifies that the received selection and restriction conditions comprise defined logical operations which are applied to bit sub-matrices in order to form bit strings and that bit strings are combined using logical AND, OR and NOT operations.

5.3 According to **established case law, it is legitimate to have a mix of technical and non-technical features (i.e. features relating to non-inventions within the meaning of Article 52(2) EPC) in a claim, even if the non-technical features form a dominating part** (T 641/00, OJ EPO

2003, 352, reasons 4). Inventive step in so-called mixed-type inventions is to be assessed by taking account of all those elements of the claimed subject-matter which contribute to its technical character (see T 641/00, supra, reasons 6 and 7). Features which would, taken in isolation, belong to the matters excluded from patentability under Article 52(2) EPC may nonetheless contribute to the technical character of the claimed invention (G 3/08, OJ EPO 2011, 10, reasons 12.2.2). However, purely non-technical elements which do not interact with the technical subject-matter of the claim for solving a technical problem are ignored (see T 154/04, OJ EPO 2008, 46, reasons 5(F)).

5.4 The **appellant relied on decision T 208/84** (OJ EPO 1987, 14), which considered the scope of the exclusion of mathematical methods from patentability. That decision dealt with the problem of whether a method of digitally filtering a two-dimensional data array (representing a stored image) was a mathematical method as such. It ruled that "if a mathematical method is used in a technical process, that process is carried out on a physical entity (which may be a material object but equally an image stored as an electric signal) by some technical means implementing the method and provides as its result a certain change in that entity", and therefore "even if the idea underlying an invention may be considered to reside in a mathematical method a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such" (reasons 5 and 6). This is **in line with more recent case law cited in Case Law of the Boards of Appeal**, 8th edition 2016, I.A.2.2.2 and I.D.9.1.8. Decision T 208/84 further held that **a claim directed to a technical process carried out under the control of a program could not be regarded as relating to a computer program as such**. This conclusion was confirmed by decision T 935/97 of 4 February 1999 (reasons 7.4), to which the appellant also referred.

5.5 It thus has to be determined whether and to what extent the features of claim 1 of the main request - which defines a computer-implemented method for evaluation of selection conditions for consistency - provide a technical contribution. **Two main lines of argument may be distinguished here, namely (i) that the task performed by the method and its overall purpose are of a technical nature, and (ii) that the features of the claimed invention specifically take the functioning of a computer into account and result in technical effects such as improved processing speed.**

5.6 (i) First line of argument: technical task of claimed method

5.6.1 In the first-instance proceedings (see letter of 17 May 2013, page 2), the appellant maintained that the task performed by the claimed method, namely the evaluation of whether the selection conditions were consistent, was of a technical nature. This task consisted in checking the selection conditions for components of a configurable and possibly highly complex product of manufacture such as a car or a computer. Such products - as well as the component variants which were to be included into them according to the selection conditions - were physical tangible entities and hence clearly technical. The identification of inconsistent selection conditions by means of the claimed method prevented incompatible variants from being included into the configurable product. According to the description, the method could be implemented as part of software for product design and manufacture and used in association with a product configuration system. Variant configuration and variant management were terms of art used with respect to the configuration of complex technical products (see letter of 26 February 2010, page 6, third full paragraph).

In the appeal proceedings the appellant no longer placed much emphasis on this line of argument. It nevertheless maintained that the bit matrices were a representation of real-world industrially manufacturable products (see grounds of appeal, page 10, second full paragraph).

5.6.2 The **Examining Division did not follow the appellant's arguments**. In its view, the meaning of the term "configurable product" was abstract and not sufficiently concrete to be **technical**, since it did not allow the skilled person to determine its features and properties. Furthermore, claim 1 of the then main request did **not exclude the possibility that the term might also cover non-technical products** such as insurance policies, pension schemes and intellectual products. The **selection conditions were not technical**, as they amounted to subjective business or marketing decisions such as selling a car with a particular engine only in a predefined colour.

5.6.3 **The Board is of the opinion that the task which the claimed method performs is indeed non-technical**. It accepts that the wording of claim 1 of the amended main request now implies that **the term "configurable product" relates to a product of manufacture**, i.e. no longer to non-tangible products such as insurance policies. Likewise, the variants of components to which the selection conditions apply have to be regarded as physical and technical entities, as illustrated by the example of specific engine components (see paragraph [0013] of the A publication). **The claimed method is, however, not performed on these products and their components themselves. It is concerned with the checking of selection conditions for the component variants, in particular in the context of a product configuration system.**

5.6.4 The **configuring of a product to be manufactured later can be understood as a special case of design activity**, where the product being configured is assembled from a fixed set of well-defined component types. One of its results is the generation of a **list of components referred to as an order bill of materials** (see paragraph [0011] of the A publication). Such a list **essentially embodies cognitive information about technical items, which is created in the planning phase prior to the actual manufacturing of the configured product.**

5.6.5 The **Board accepts that technical considerations may play an important role in the formulation of selection conditions in the context of a product configuration system**. The developer of such a system may for example wish to ensure that a specific component variant is included in a configured product if that is necessary for technical reasons. In this sense **selection conditions may aim at preventing technically incompatible components from being included.**

5.6.6 **However, when assessing the technical contribution of claim features, the involvement of technical considerations is not always conclusive**. Reference is made to decision G 3/08, supra, where the Enlarged Board of Appeal stated the following (see reasons 13.3): **"Designing a bicycle clearly involves technical considerations [...] but it is a process which at least initially can take place in the designer's mind, i.e. it can be a mental act and to the extent that it is a mental act would be excluded from patentability ..."**.

5.6.7 It is furthermore observed that the **task performed by the claimed method is neither formulating the selection conditions nor verifying whether a selection condition is technically**

correct or not. In particular, the method **does not check whether the selected component variant (e.g. a specific engine part that has been designed for a small engine) is technically compatible with the selection condition (e.g. horsepower = 200). It merely checks whether the selection conditions are inconsistent**, i.e. whether they guarantee that at most one variant is selected for a component. The method thereby ensures that the order bill of materials generated for an ordered and configured product does not include two variants of the same component. The method only in this limited sense prevents incompatible variants from being included in the configured product. **Consequently, the Board is not convinced that technical considerations are required in that respect.**

5.6.8 It can be concluded from the above that **the task performed by the claimed method, namely verification of the consistency of the selection conditions, i.e. a system of rules, is not of a technical, but of a logical nature.** Thus, it does not contribute to the technical character of the invention. This conclusion is in line with decision T 42/09 of 10 March 2014, in which the present Board, in a different composition, dealt with the technical contribution of a particular product data-model and considered that the claimed invention was essentially aimed at solving non-technical administrative problems such as checking product configurations for consistency (see reasons 2.3).

5.7 (ii) **Second line of argument: technical effect with respect to the functioning of a computer**

5.7.1 In the appeal proceedings the appellant focused heavily on the second line of argument mentioned above, arguing that all the features of the claimed invention contributed to the technical character of the invention, since they specifically took the functioning of the computer into account. The combinations of values of product characteristics and the selection and restriction conditions were represented by specific bit matrices and bit strings, which were processed in a specific manner in order to arrive at the desired result.

Reference was made to the following passages of paragraph [0036] of the A publication:

"[...] because embodiments of the invention use bit operations, execution may be significantly faster than prior art methods. For example, in constructing the variance space matrix, bit operations like multiplying or shifting of bit strings may be used. Such operations can take advantage of machine architecture for enhanced speed of execution. Moreover, the formation of bit strings [...] may be done very quickly, because all the combinations in the variance space matrix may be processed substantially simultaneously using bit string operations."

5.7.2 In the grounds of appeal, the appellant illustrated the invention's functioning by giving a concrete example with a variance space defined by two characteristics (HP (horse power) with two values and Colour with three values), three selection conditions and two restrictions. The variance space bit matrix expanded with the bit strings had a total of 78 binary cells, since it had 6 columns (corresponding to all combinations of 2 values of HP and 3 values of Colour) and 13 rows (one for each of the 5 characteristic values, 5 for the selection- and restriction-condition bit strings, and 3 for the inconsistency bit strings for the three pairs of selection conditions). If the variance space bit matrix was split into two sub-matrices, one for each value of HP, at the end each expanded sub-matrix would have only 33 binary cells with 3 columns and 11 rows. The data in sub-matrices could be processed separately in parallel,

which was more efficient. Therefore the splitting of the bit matrix had the technical effects of reducing the storage volume (in the particular example, the overall number of cells was reduced from 78 to 66) and reducing the overall time needed for processing data. Data splitting could be performed in a way that fitted the computer system architecture, for example so as to improve load balancing. Since the features of claim 1 interacted in order to facilitate parallel processing, they all contributed to the technical character of the invention.

5.7.3 The **Examining Division did not find the second line of argument convincing** with respect to the then pending requests (which did not contain features which specifically related to parallel processing). It **considered that the matrices, bit strings and logical operations were mathematical constructs from the field of Boolean algebra which did not contribute to the technical character of the invention.** It conceded that some computer architectures might be suitable for more efficient execution of mathematical constructs such as those of the invention. Nonetheless, the then claimed subject-matter was not restricted to such an architecture. Since bit strings and matrices were known long before programmable computers were invented, the mathematical notations did not imply a specific computer architecture.

5.7.4 **The Board is not fully persuaded by the above reasoning for refusing the requests pending before the Examining Division.** However, this point need not be decided, since the appellant amended its requests in a way which, as set out below, overcomes the objections raised in the contested decision.

5.7.5 **While information modelling is an intellectual activity and should be treated like any other human activity in a non-technical field, its purposive use in the context of a solution to a technical problem may contribute to the technical character of an invention** (see e.g. T 49/99 of 5 March 2002, reasons 7 and T 42/09 of 10 March 2014, reasons 2.4). The case law distinguishes non-technical algorithmic choices based e.g. on mathematical constructs from technical options. According to decision T 1784/06 of 21 September 2012 (reasons 3.1.2), **enhanced speed of an algorithm, as compared to other algorithms, is not sufficient to establish a technical character of the algorithm.** The deciding board in that case considered that the claimed algorithm did not contribute to the technical character of the classification method. It might allow a data record to be processed in a parallel computer architecture, but the claim was not limited to an implementation on a parallel hardware structure, and the application as a whole was silent on parallel data processing. Decision T 42/10 of 28 February 2013 ruled: **"In its full generality, speed of computation is a mathematical problem"** (see reasons 2.11). However, in accordance with established case law, **computational efficiency achieved by features resulting from technical considerations, e.g. about the internal functioning of a computer, is in principle a technical effect** (see T 42/10, supra, reasons 2.11; T 1965/11 of 24 March 2017, reasons 5.1)

5.7.6 **Several decisions have affirmed the technical character of particular data structures, such as functional data defined in terms which inherently comprise the technical features of the system** (see e.g. T 1194/97, OJ EPO 2000, 525, reasons 3.3), **data intended for controlling a technical device such as an index structure directing the computer to the memory location of the data to be retrieved** (see e.g. T 1351/04 of 18 April 2007, reasons 7.2), **or a functional data structure for facilitating the exchange of data among various application programs independently of any cognitive content** (T 424/03 of 23 February 2006, reasons 5.2).

5.7.7 **Binary or bit maps have also sometimes been considered technical**, see e.g. T 969/12 of 21 June 2017 (reasons 2.1.3 and 2.1.7). Decision T 1954/08 of 6 March 2013 appears to have treated a claim feature defining the use of a binary map of flags in a computer-implemented method as an (obvious) technical implementation of a non-technical algorithm.

5.7.8 **Claim 1 of the present main request does not simply describe the computer-implemented method in non-technical terms of the area of product configuration**, e.g. in terms of rules. It is true that the claim uses mathematical terms, such as "matrix", and that the claimed method relies on "bit strings" and "bit matrices" which correspond respectively to the mathematical constructs "Boolean vectors" and "Boolean matrices". **It nevertheless specifies that the combinations of values of product characteristics and the selection and restriction conditions are represented by specific bit matrices and bit strings, which are processed in a specific manner in order to arrive at the desired result** (even if the claim does not define all the details of the necessary operations).

5.7.9 In particular, **the specific choice of the claimed bit strings and matrices and respective operations is determined by technical considerations concerning how to efficiently perform the method steps in parallel**. In this context, reference may be made to decision T 1321/11 of 4 August 2016 (reasons 5.3.5), in which it was concluded that two distinguishing features concerned the parallel, rather than serial, organisation of two processes and, in doing so, **made use of the parallel processing capabilities of a media player. As a consequence, the two features were considered to contribute to the technical character** of the claimed invention.

5.7.10 Regarding the present case, the **Board recognises that performing the method in parallel usually results in more efficient evaluation of the selection conditions**. The "desired number of bit sub-matrices" can be tuned, within the constraints of a particular data set, so that the desired degree of parallelism is achieved. Unlike the case of T 1784/06 (supra), both the present claims and the originally filed description (see page 14, lines 10 to 12) describe parallel processing.

The Board therefore considers that, as in decision T 1321/11 (supra), the features supporting parallel processing contribute to the technical character of the claim. In the present case, a more concrete parallel hardware architecture does not have to be claimed, since it is credible that efficiency gains can be achieved for different technical means used to perform the sub-tasks in parallel.

5.8 In summary, **even though the task performed by claim 1 is of a non-technical nature (see point 5.6 above), the specific claimed bit (sub-)matrices, bit strings and steps of the method, especially those of splitting the bit matrix, forming bit strings representing the selection and restriction conditions and determining inconsistent pairs of selection conditions when performed by parallel processing, do contribute to the technical character of the invention and should be taken into account when assessing inventive step**. Similar conclusions apply to the other claims of the main request.

T 2079/10 (Steuerung von zellulär aufgebauten Alarmsystemen/SWISSRE) of 19.4.2018

European Case Law Identifier: ECLI:EP:BA:2018:T207910.20180419

Elektronische Steuerungsvorrichtung sowie Verfahren zur Steuerung von zellulär aufgebauten Alarmsystemen

Erfinderische Tätigkeit - Mangelnde Berücksichtigung technischer Merkmale durch erste Instanz

Anmeldenummer: 08004682.4
IPC-Klasse: G06Q 40/00
Name des Anmelders: Swiss Reinsurance Company Ltd.
Angeführte Entscheidungen: T 0641/00, T 0930/05, T 1463/11

Orientierungssatz: Keine rein nicht-technische Auslegung des Anspruchsgegenstands möglich - siehe Punkte 4.2 bis 4.4 der Entscheidungsgründe

Kammer: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t102079du1.pdf>

1. Die Erfindung

Der beanspruchte Gegenstand ist auf eine automatisierte Steuerung von zellulären, geografisch verteilten Alarmsystemen gerichtet. Aus einer Eingangsschicht mit örtlich verteilten Sensoren (zelluläres Eingangsgrid) werden jeweils physikalische Messgrößen gewonnen, die derart auf die jeweiligen Alarmsysteme (zelluläres Ausgangsgrid) fortgepflanzt/propagiert werden, dass deren Auswirkung über entsprechend generierte Aktivierungssignale an den jeweiligen geographisch verteilten Alarmsystemen vor Ort beurteilt und somit automatisiert gesteuert werden kann. Anders als bei herkömmlichen Ansätzen, bei denen lediglich anhand bekannter mathematischer Modelle über eine entsprechend modellierte Ereignisfunktion nur in einem kleinen homogenen Gebiet eine Extrapolation vorgenommen wurde, erfolgt nunmehr darüber hinaus eine Skalierung unter anderem mittels einer Kumulierung über ein Zeitfenster und Bildung einer mittleren Aktivierung für jedes Alarmsystem in seinem überwachten Gebiet (grid). Jedes neue Messereignis wird in diese Gewichtung einbezogen und mit diesem systemimmanenten Wissen (Wissensbasis) skaliert, welches unter anderem auch durch mittels Monte-Carlo-Simulation generierte Zufallsereignisse verbessert wird. **Die Erfindung beansprucht, dass insbesondere durch die Bildung von Mittelwerten über einen großen Bereich eine wesentlich genauere Extrapolation der Auswirkung über heterogene Bereiche an einem bestimmten Ort und damit erstmals eine zufriedenstellende automatische Steuerung solcher Alarmsysteme möglich ist. Dadurch soll unter anderem eine Korrelation von Instabilitätseffekten besser beherrschbar sein.**

Dabei sind Eingangsgrid und Ausgangsgrid nicht zwangsläufig überlappend, sondern es erfolgt ein Mapping von eingangsseitigen physikalischen Sensorsignalen und

ausgangsseitigen Aktivierungssignalen mit Hilfe eines gridbasierten topographischen Lookup-Table.

Als mögliche Anwendungen sind unter anderem eine Detektion von Betriebsstörungen verursacht durch Erdbeben oder Stürme, aber auch von Ereignissen in technisch komplexen Fabrikationsstraßen genannt. Während ausgangsseitig auch geldwertbasierte Betriebsstörungen gesteuert werden können, steht anspruchsgemäß eingangsseitig immer eine Sensorik zur Erfassung physikalischer Messparameter.

4. Erfinderische Tätigkeit

4.1 Die angefochtene Entscheidung

Die angefochtene Entscheidung erkennt dem beanspruchten Gegenstand einen technischen Charakter zu, da dieser auf ein elektronisches Steuerverfahren gerichtet sei. Darüber hinaus wird der **Gegenstand jedoch als eine Automatisierung einer nicht-technischen Geschäftsmethode angesehen, da vor dem Hintergrund der Beschreibung (mit Verweis auf Seiten 13 und 14) eine nicht-technische Auslegung der Merkmale des Anspruchs 1 im Sinne von geldwertbasierten, aktivierbaren Alarmsystemen möglich sei, wo es lediglich zu einer Verrechnung von Geldbetragswerten komme** (vgl. Punkt 2.1.1 der angefochtenen Entscheidung). Eine **Implementierung eines solchen geldwertbasierten Geschäftsverfahrens erfolge mit notorisch bekannten technischen Mitteln** wie etwa einer geeigneten Sensorik sowie Computermitteln und sei daher naheliegend. Beispielhaft wird hierzu auf die Dokumente D1 bis D4 aus dem Europäischen Recherchenbericht verwiesen (vgl. Punkt 2.1.3 der angefochtenen Entscheidung).

4.2 Die Kammer vermag sich dieser Argumentation nicht anzuschließen.

Indem die Argumentation in der angefochtenen Entscheidung bei einer Implementierung die Wahl einer geeigneten Sensorik in die Hände des technischen Fachmanns legt, wird übersehen, dass die Sensorik von der Art der zu messenden physikalischen Parameter abhängt. **Diese physikalischen Parameter sieht die Kammer als technische Daten an, die nicht bloß eine geldwertbasierte Auslegung ermöglichen und damit auch nicht als Bestandteil eines Geschäftsverfahrens zur Implementierung vorgegeben werden können. Wenn jedoch die Auswahl der Eingangsgrößen vom technischen Fachmann zu leisten ist, so stellt sich die Frage, wie ein auf diesen physikalischen Parametern basierendes weiteres Verfahren losgelöst von seinem Ausgangspunkt als in sich geschlossenes rein geschäftliches Verfahren aussehen soll. Es kann nämlich nicht davon ausgegangen werden, dass ein technischer Fachmann zunächst eine physikalische Ausgangsgröße festlegt, auf deren Basis er dann vom Geschäftsmann ein rein abstraktes Geschäftsverfahren als Konzept zur Implementierung vorgegeben bekommt.** Diese Vorgehensweise entspricht auch nicht dem nach gängiger Rechtsprechung angewandten COMVIK-Ansatz (T0641/00).

4.3 Andererseits kann auch nicht davon ausgegangen werden, dass ein Geschäftsmann **technische Merkmale wie im vorliegenden Fall physikalische Messparameter im Rahmen eines rein administrativen Geschäftsverfahrens vorgibt**. Andernfalls würden technische Merkmale, die einen Beitrag zum technischen Charakter leisten, bei der Beurteilung der erfinderischen Tätigkeit ausgeschlossen (vgl. auch T1463/11 CardinalCommerce, Punkt 16).

Nach gängiger Rechtsprechung hat die objektive technische Aufgabe frei von Lösungsmerkmalen des beanspruchten Gegenstands zu sein. Anspruchsmerkmale dürfen nur dann Bestandteil der Aufgabe sein, wenn solche Merkmale selbst keinen Beitrag zum technischen Charakter leisten und daher nicht Bestandteil der technischen Lösung sein können (vgl. T0641/00 COMVIK). **Indem die zu erfassenden physikalischen Messparameter vom Gegenstand des Anspruchs 1 dem technischen Fachmann zur Implementierung im Rahmen der Aufgabe mit vorgegeben werden, wird diesem Grundsatz in der angefochtenen Entscheidung nicht Rechnung getragen.**

4.4 Nach Ansicht der Kammer lässt der Gegenstand von Anspruch 1 keine rein nicht-technische Auslegung zu, da Eingangsgrid und Ausgangsgrid zu berücksichtigen sind. Zwar können die ausgangsseitigen Aktivierungssignale durchaus auch zur Steuerung von geldwertbasierten Alarmsystemen verwendet werden. Die eingangsseitigen physikalischen Sensorsignale stellen jedoch stets technische Größen dar, die bei der Auslegung des Anspruchsgegenstands nicht vernachlässigt werden können. Der Verweis auf die Entscheidung T0930/05 bezüglich einer nicht-technischen Auslegung trifft hier somit nicht zu.

4.5 Darüber hinaus übersieht die angefochtene Entscheidung auch weitere Merkmale, die als technisch anzusehen sind, insbesondere die zweifach zell- und gridbasierte Struktur, welche räumliche beziehungsweise geographische Zuordnungen und Überlegungen zwischen Sensoren und Alarmsystemen erfordert.

Eine **gridweise abgestufte Fortpflanzung von Messparametern zwischen diesen Strukturen zur Generierung von Aktivierungssignalen auf Basis eines Lookup-Table kann nach Auffassung der Kammer keineswegs als eine Vorgabe eines reinen Geschäftsverfahrens angesehen werden.** Vielmehr erfordert dies auch technische Überlegungen im Zusammenhang mit einer zellulären Struktur, wobei Eingangsschicht und Ausgangsschicht nicht überlappen müssen und ein Mapping erforderlich ist.

Hierbei kann **auch nicht von einem reinen Algorithmus oder mathematischen Verfahren ausgegangen werden, da auch eine Erfassung von physikalischen Messwerten mittels Sensoren beansprucht ist und damit eine konkrete technische Anwendung zu Grunde liegt. Dem beanspruchten Verfahren kommt daher als Ganzes ein technischer Charakter zu,** wie die angefochtene Entscheidung in diesem Punkt richtig feststellt.

Derartige zelluläre Strukturen mit der gridzellenweise abgestuften Generierung von entsprechenden Aktivierungssignalen sind bei reinen Geschäftsverfahren oder mathematischen Verfahren jedoch nicht erforderlich und gehen über das notorische Fachwissen des Fachmanns hinaus.

4.6 Die genannten technischen Merkmale sind somit, anders als in der angefochtenen Entscheidung, bei der Prüfung auf erfinderische Tätigkeit des Gegenstands von Anspruch 1 zu berücksichtigen (Artikel 56 EPÜ). Das Gesagte gilt entsprechend für den nebengeordneten Vorrichtungsanspruch 10, welcher korrespondierende Merkmale aufweist.

T 1722/12 (Dynamic ad placement / ALCATEL LUCENT - GREENEDEN U.S HOLDING II) of 1.3.2018

European Case Law Identifier: ECLI:EP:BA:2018:T172212.20180301

SYSTEM FOR MANAGING DYNAMIC PLACEMENT OF ADVERTISEMENTS IN ELECTRONIC INFORMATION PAGES

**Inventive step - dynamic placement of advertisements (no Inventive step - not technical)
Inventive step - controlling communication load at contact center (no)**

Application number: 07758678.2

IPC class: G06Q 30/00

Applicant name: Alcatel Lucent Greeneden U.S. Holding II, LLC

Cited decisions: T 1173/97, T 0641/00, T 0154/04, T 1543/06, T 0483/11, T 1463/11

Board: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t121722eu1.pdf>

1.1 The invention concerns advertising. The purpose of advertising is generally to attract potential customers to a business. However, there may be times when the advertiser is lacking the resources to serve those customers adequately. For example, the advertiser's contact center may be understaffed, or the number of incoming customer transactions may be higher than usual. This may lead to long waiting times, or even the loss of customers. The invention addresses this problem by dynamically placing advertisements taking account of the current availability of the advertiser's resources at the contact center (see the published application at page 2, lines 13 to 17, and at page 10, lines 23 to 28).

1.2 The dynamic placement of advertisements concerns the time of placement of an advertisement as well as the content of the advertisement (page 9, lines 28 to page 10, line 9). For example, if it is determined that the contact center is reachable via a particular communication means, say telephone, then, the contact information in the advertisement is updated to reflect this (it will be a telephone number). Conversely, if there is no agent available to answer calls, the advertisement may include static contact information, such as a Web address.

1.3 In the invention, the advertisements are served by an advertisement server to users over a data-packet network. The advertiser's contact center is connected to the same network. It processes transactions received from the users.

The advertisement server runs software for storing the advertisements in a data storage, for monitoring the availability of the advertiser's resources at the contact center over the network, and for selecting and serving the advertisements to the users based on the availability of the advertiser's resources.

Claim 10 of the main request reads:

A method for selecting and serving advertisements, the method executed by software (124, 125, 126) stored on an advertisement server (120, 122, 123) connected to a data-packet network (102), comprising steps of:

- a) storing advertisements associated with individual advertisers in a storage accessible to the network-connected advertising server (120, 122, 123); the advertisers having at least one contact center (103) including resources (113, 114) for processing incoming transactions;
- b) monitoring availability of the advertiser's resources (113, 114) over the data-packet network (102) by a software routine (127) connecting to a router (112) at the contact center (103); and
- c) serving advertisements to users (110, 111) viewing the advertisement and connected to the data-packet network (102) based at least in part on information about advertiser's resources (113, 114) determined in step b).

2. Main request, inventive step

2.3 In the present case, the disputed point concerns which features of the invention are non-technical, i.e. what goes in the non-technical requirement specification.

The examining division argued that the following steps in claim 10 were **non-technical**:

(a) storing advertisements;

(b) monitoring availability of the advertiser's resources at the contact center; and

(c) serving advertisements to users based on at least in part on information about the advertiser's resources determined in step (b).

The appellant argued that all of the features in claim 10 were technical, because they all interacted for solving the technical problem of managing the communication load on the contact center.

2.4 The Board does not fully agree with the approach taken by the examining division. **Indeed, step (a) involves storing data in a data storage, which is a technical activity involving technical means.**

In T 1463/11 - "Universal merchant platform / CardinalCommerce", it was held that a non-technical requirement specification cannot include any technical means, no matter how trivial or notorious. Those features should instead be evaluated for obviousness as part of the technical implementation. The Board shares this view. **Therefore, while the advertisement itself is cognitive content, which belongs in the non-technical requirement specification, the step of storing it is part of the technical implementation.**

2.5 On the other hand, the Board does not agree with the appellant that selecting and serving advertisements solves a technical problem.

Advertising is meant to attract customers to a business. By placing an advertisement, the advertiser is hoping to increase customer demand. That is what advertising is all about. Conversely, by not placing the advertisement, the effect of the advertisement is not there. Naturally, the effect of a particular advertisement on customer demand is neither certain, nor predictable; it depends on the customer's subjective response to the advertisement as well as on the product or service in question. **If advertising has any objective, credible effect at all, it is not a technical effect; it is an effect on business load.**

2.6 The appellant argued that, since the dynamic placement of advertisements controlled the users' behaviour such that a user would not be tempted to send a request to the contact center, the amount of network traffic resulting from customer requests was reduced. This was a technical effect that contributed to inventive step.

The Board is not persuaded. Firstly, claim 10 of the main request does not say that the incoming transactions are received over a network. Therefore, there can be no effect of those transactions on a network.

Secondly, even if the transactions were received over a network, the effect on network traffic would be a direct translation of the corresponding effect on customer demand. In other words, the technical character comes from the context of a networked communication system rather from the advertisement per se. As stated in the headnote of T 483/11 - "Document summary/ARIZAN CORPORATION", **a feature does not automatically inherit the technical character of the context in which it occurs. The feature must, itself, make a contribution to that technical context.**

2.7 Indeed, **any message that is transmitted over a network has an effect on network traffic. That is just a normal and inevitable consequence of sending (or not sending) the message.** However, that does not make the message content or the decision of when to send (or not to send) the message technical. **In the Board's view, a further technical effect, which goes beyond the inherent effect of the message on the network is required.** The Board sees no such further technical effect caused by the selection and serving of advertisements in claim 10.

The requirement of a "further technical effect" was first introduced in connection with computer programs in T 1173/97 - "Computer program product/IBM", OJ EPO 1999, 609. However, the principle holds also for other non-technical subject-matter, which inherently has some "technical" effect (see the Case Law of the Boards of Appeal, 8th edition, I.D.9.1.3 e) and T 1543/06 - "game machine/GAMEACCOUNT")

2.8 For these reasons, the **Board judges that the selection and serving of advertisements based on the availability of the advertiser's resources at the contact center goes in the non-technical requirement specification. Starting from a standard networked computer system, the technical problem is how to implement the requirement specification.**

2.9 The skilled person given the task of implementing the non-technical requirement specification would have had to provide suitable means for obtaining the availability information, and for selecting and serving the advertisements to the users based on it.

It would have been necessary to store the advertisements in some accessible data storage. Obtaining the availability information via the network by connecting to a router at the contact center would have been an obvious option. Furthermore, there would have had to be some means for selecting the advertisements and transmitting them to the users.

2.10 For these reasons, the skilled person would have arrived at the subject-matter of claim 10 without inventive skill. Therefore, the Board concludes that the subject-matter of claim 10 lacks an inventive step (Article 56 EPC).
