

This document includes some recent decisions of the EPO in 2015 with regards to software related inventions and shows relevant extracts from the respective decisions.

T 0423/11 (Reconfigurable algorithmic networks/HONEYWELL) of 19.11.2015

European Case Law Identifier: ECLI:EP:BA:2015:T042311.20151119

RECONFIGURABLE ALGORITHMIC NETWORKS FOR AIRCRAFT DATA MANAGEMENT

Inventive step - (no)

Application number: 96921304.0
IPC class: G06F 9/45
Applicant name: Honeywell International Inc.
Opponent name: SAGEM DEFENSE SECURITE

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t110423eu2.pdf>

1. Overview of the invention

The invention relates to the use of graphical (or visual) programs for processing flight data of an aircraft. The graphical programs are called "reconfigurable algorithmic networks" or RANs, (see patent description, [14], first sentence). Figure 3 shows the one and only example of a RAN program in the patent (see also [21], lines 24-41). The RAN programs are executed by an interpreter program written in the conventional manner and similar to an interpreter for the well-known BASIC programming language ([14], lines 43-49; [19], lines 13-19). One of the purposes of the RAN programs is the generation of human-readable reports (claim 12; [13], sentences 1 and 2; [14], second sentence; figure 3, (120)).

Claim 1 of the main request (i.e. of the amended patent) reads as follows:

"1. A data management system for use with aircraft comprising:

a plurality of flight data sources for generating a plurality of flight data;

a computer;

transmittal means for transmitting at least a portion of said flight data from said flight data sources to said computer;

a reconfigurable algorithmic network, resident on said computer, that defines a set of predetermined operations on a predetermined set of said flight data[,] said reconfigurable algorithmic network including a plurality of functional elements wherein each said functional element defines at least one of said predetermined operations, a series of codes representing functional elements to be executed, and connection means for defining the operational relationships between said functional elements; and

interpreter means, resident on said computer, for processing said set of flight data in accordance with said reconfigurable algorithmic network in that said functional element codes of the reconfigurable algorithmic network are received and the corresponding computer routine is selected for execution; and

an input/output device for transferring information to and from the aircraft and for receiving a data transfer medium."

3.4 While the sole independent claim (claim 1) merely sets out the existence of a RAN and its execution by an interpreter program in order to process flight data on an ordinary computer having input/output devices for transferring data to and from an aircraft (e.g. over a conventional ACARS network connection or a floppy disk drive, see column 3, line 55, and column 4, line 2), dependent claims 2-5 and 7-11 relate to developing RANs with the help of a graphical editor (claims 2-5, 7, 8) and a flight data simulator (claims 9-11), claims 6, 12 and 14 specify that the RAN generates a human-readable report (claim 12: the generating computer is on the ground), claim 13 contains a second computer in the aircraft ("data management unit") containing the interpreter and the RAN, claim 14 additionally displays flight data in the aircraft, claims 15 and 16 relate to transmitting flight data and RANs between the aircraft and other computers, and claims 17-19 relate to sub-programs (i.e. "sub-RANs").

3.5 The board considers it to be a **key question whether or not a programming and execution environment for processing flight data with the help of graphical programs produces a technical effect**. Or, more precisely, does the enhancement of an ordinary dataflow-oriented graphical programming language with constructs for processing flight data (e.g. icons for flight data parameters like "airspeed" or "cabin altitude warning"; see claims 7 and 8; figure 3 box 104 labeled "CAS" or figure 4, the selected line in the parameter selection window: "CAS ... COMPUTED AIRSPEED") have a technical effect, since it mainly concerns the development of a program?

3.6 As to the aspect of developing and executing graphical programs, decision **T 1539/09 "Programmiersystem/RENNER" (Reasons, 4.2) states that the activity of programming is regarded as a mental act, unless it serves to achieve in a causal way a technical effect in the context of a concrete application or environment**. In that decision, a graphical programming and execution environment similar to that of the appealed patent was **considered not to be allowable**.

3.7 Although, in the present case, the environment is more specific than that in T 1539/09 (the data is from an aircraft or an aircraft simulator), **the board does not see how the origin of the data adds a technical effect to developing graphical programs (RANs)**.

3.8 As argued in the first communication of the examining division (dated 24 August 1998; 5.2), the only problem solved seems to relate to the nature of the programming language used to specify the required data processing. Further: "The only practical effect which can be deduced from the application resulting from choosing this set of programming constructs embodied in the RANs would appear to be exclusively related to ease of input and editing in a visual manner." (emphasis added)

3.9 Thus, the effect achieved by developing flight data processing programs in the form of RANs appears to be to ease the work of the programmer. However, it is well-established case law of the boards of appeal that **this effect lacks technical character** (see for example the above mentioned decision T 1539/09, 4., second sentence: the effect of reducing the mental effort of the user when creating the program is per se in the board's view not technical ("Die Wirkung, den mentalen Aufwand des Anwenders bei der Programmerstellung zu reduzieren, ist an sich nach Ansicht der Kammer keine technische.")). Therefore, this easing of the work of the programmer cannot contribute to the presence of an inventive step.

3.11 During oral proceedings, the proprietor argued that the "architecture" of the claimed data management system produced the technical effects of increasing the versatility, reconfigurability, manageability, modifiability, hardware independence, independence from certification requirements and reducing memory requirements.

3.12 However, as to the effects of **increasing the versatility, reconfigurability, manageability and modifiability, the board is not persuaded that they have a technical character**, since they are abstract and not measurable quantities. But in any case, these effects are a direct consequence of using a computer. The main characteristic of a computer is its programmability which makes a system versatile, reconfigurable (a synonym for "programmable"), manageable and modifiable. However, the idea of using a computer in order to process data is not inventive, since that is the purpose of computers.

3.13 As to the hardware independence of the RANs, this results directly from using a (high-level) programming language, and not the machine language of the concrete processor of the concrete computer used in an implementation of the invention. That is what high-level programming languages have been designed for since their creation in the 1950s. Using high-level programming languages to write programs for computers was already so common at the patent's priority date (in 1995), that this does not establish an inventive step. **The technical effect of hardware independence by using high-level programming languages is a usual one.**

3.14 As to reducing the memory requirements, the proprietor argued that a RAN program was smaller than a specific program producing the same results. The board agrees that this might be the case, but it is also a **direct consequence of using a high-level programming language.**

3.15 The proprietor also cited paragraph [15] of the patent description which states that the RAN programs can substantially reduce certification requirements because, once the interpreter programs are certified, and because merely interpreting a RAN does not affect the database on the aircraft, it should not be necessary to obtain recertification every time the RAN was modified or a new RAN was created.

3.16 The board finds that **reducing administrative certification requirements is not a technical effect**. Moreover, the board is not convinced that the expectation of avoiding recertification is realistic. As much as a non-programmed ad-hoc implementation of a flight-data management system has to be certified, a programmed version of the same functionality would have to be certified, the more since software-based solutions usually have more sources of failure than more hardware-centric approaches. Moreover, the administrative advantage of avoiding certification cannot contribute to the presence of a technical effect.

3.17 It follows that claim 1 of the patent does not produce a technical effect which goes beyond the usual technical effects which any computer produces when executing programs (e.g. changes of electric voltage or current). Without such a technical effect, claim 1 lacks inventive step.

T 2217/11 () of 9.12.2015

European Case Law Identifier: ECLI:EP:BA:2015:T221711.20151209

METHOD FOR SECURE PAYMENT WITH MICROPAYMENT CAPABILITIES

Amendments - added subject-matter (no)

Patentable invention - (yes)

Inventive step - (yes)

Application number: 01924079.5

IPC class: G07F 19/00, G06F 17/60

Applicant name: milliPay Systems AG

Cited decisions: T 0258/03, T 0789/08

Board: 3.4.03

<http://www.epo.org/law-practice/case-law-appeals/pdf/t112217eu1.pdf>

3. Patentability

3.1 The Examining Division found that the claims related to "subject matter excluded from patentability under Art. 52(2) and (3) EPC." No subsection of Article 52(2) EPC was mentioned, but in the light of the comments in the final two paragraphs on page 4 of the Reasons, it would appear that the claimed invention was considered to be a method of doing business, and therefore excluded by Article 52(2)(c) EPC.

3.2 Although methods of doing business are excluded from patentability by Article 52(2)(c) EPC, this is only to the extent to which the application relates to methods of doing business "as such" (Article 52(3) EPC).

In the present case, claim 1 seeks protection for a method for secure payment via a communication network, and the subject-matter is chiefly defined in terms of a sequence of messages exchanged between three agents, the content of the messages and the extent and nature of the encryption used being set out in detail. The subject-matter of the claim does not, therefore, relate to a method of doing business "as such", but rather to the field of secure communication over a network using cryptography, and hence it has a technical character (see e.g. T 789/08, Reasons, point 3.2, first paragraph).

3.3 The Board accepts that claim 1 comprises certain individual features which might be seen as purely related to business, for example transferring by the broker a payment amount to an account of the vendor. **This, however, is irrelevant.** By virtue of the technical features referred to above, the claimed method is an invention within the meaning of Article 52(1) EPC and not excluded from patentability under Articles 52(2) and (3) EPC 1973 (see e.g. T 258/03, Points 4.1 to 4.7).

4. Inventive Step

4.1 According to the application (see "Background of the Invention"), the starting point for the present invention is the document D0 ("Rivest et al.", cited as reference [1] in the description), as acknowledged in the contested decision (see point 4.3). In particular, the "PayWord" method disclosed in document D0 (section 3, pages 70-75) has been extensively referred to by the appellant in its submissions on inventive step.

"PayWord" is a known method for secure payment via a communication network, and therefore has the same general purpose as the present invention. Furthermore, the claimed method and PayWord have at least the following features in common: an exchange of data between a customer, a broker and a vendor; a user generated secure chain calculated using a hash function; an initial phase including public key operations, including certification and the sharing of the root of the chain; and the possibility of variable size payments.

The Board is therefore satisfied that the Payword method of document D0 represents a reasonable starting point for the discussion of inventive step.

4.2 The PayWord method is credit-based, in that the user's account is charged by the broker at the end of each day for goods already received. As pointed out by the appellant, this exposes the broker to risk if the customer's account cannot cover the transactions. By contrast, the claimed system is debit-based, with payments being transferred to the account of the vendor and a confirmation sent to the vendor before the goods (data) are sent from the vendor to the customer.

Merely switching from a credit-based method to a debit-based method is clearly not in itself inventive, nor has this been argued by the appellant. In fact, the possibility of operating the PayWord method on a debit basis is foreseen on page 75 of document D0 ("Paywords could be sold on a debit basis, rather than a credit basis ..."), in which case the broker would need to be involved in each transaction, as in the claimed method.

The appellant argues, however, that the specific features of the claimed method (three secure chains being used according to different directions and sequences compared with PayWord)

make it "possible to implement a secure debit-oriented payment method rather than the credit-oriented method of PayWord."

4.5 The claimed method sets out a precise sequence of messages sent between three agents, with the content of each message prescribed in detail, and differing considerably from the corresponding messages of the PayWord method.

For example, in document D0 the initialisation phase comprises a step in which the root element w0 of a secure chain w is sent from the customer (user) to the vendor. This is the only secure chain used in the PayWord method.

By contrast, in the initialisation phase of the claimed method, the root element v0 of a secure chain v is sent from the vendor to the customer (hence in the opposite direction to that of document D0), then the root elements c0, v0, of two secure chains c, v are sent from the customer to the broker (the message also comprising two signatures Vsk, Csk), and finally the root elements v0, b0, of two secure chains v, b are sent from the broker to the vendor.

In the opinion of the Board, **such a modification goes beyond anything which could legitimately be described as a trivial or obvious extension of the PayWord method.** The Board has also not found any disclosure or hint in the other available prior art which would lead the skilled person to the present invention.

4.6 The subject-matter of claim 1 is therefore judged to involve an inventive step within the meaning of Article 52(1) EPC and Article 56 EPC 1973.

T 0541/10 (Sensitive information/PAYPAL) of 11.11.2015

European Case Law Identifier: ECLI:EP:BA:2015:T054110.20151111

SYSTEM AND METHOD FOR ELECTRONICALLY EXCHANGING VALUE AMONG DISTRIBUTED USERS

Inventive step - (no)

Application number: 00926493.8
IPC class: G06F 17/60
Applicant name: PayPal, Inc.
Cited decisions: T 0769/92, T 0844/09

Board: 3.5.01

<http://www.epo.org/law-practice/case-law-appeals/pdf/t100541eu1.pdf>

Claim 1 of the Main Request reads as follows:

"A computer system (102, 104), (106), 108), 110) [sic] for effecting value exchanges between financial accounts held in financial institutions by users who may communicate with the computer system using client apparatus (122a; 122b; 122c) via a communication network (120), wherein the computer system:

(a) is arranged

(i) for storing a plurality of registered user identification data identifying respectively a plurality of registered users,

(ii) for storing in association with said registered users respectively the identities of said financial accounts in relation to which value is to be exchanged when a transaction is executed, and

(iii) for storing a plurality of pre-existing identifiers which are associated respectively with said registered users and which are in the form of network address data intended for communication with the registered user via a communication network independently of the system;

(b) is arranged for receiving instructions for transactions, each between first and second registered users, said instructions:

(i) being received from said first registered user,

(ii) defining the value to be exchanged, and

(iii) identifying said second registered user by means of said pre-existing identifier associated with said second registered user; and

(c) is operable on the basis of said identities of said financial accounts, said pre-existing identifiers and said values defined in said transaction instructions to effect said value exchange between said financial accounts, associated with said first and second registered users."

2. A common electronic home banking system has been cited in the decision under appeal as closest prior art. The relevance of this piece of prior art has not been disputed by the appellant. The appellant explained the difference between the claimed invention and the common electronic home banking system, providing a list of the distinguishing features of the invention (F1, F2, and F3, see VII. a) above). The Board essentially concurs with the appellant's prior art analysis, albeit not with the formulation of the objective technical problem and subject to the interpretation that "network address data" are not used as network address data within the very same "communication network (120)" which is used for communication between the computer system and the client users. **The "network address data", for example a telephone number or a Social Security number, is not functional as network address in communication network 120; it has such a function outside of the system** (see e.g. A2-document, page 2, line 29 f., page 5, line 5 ff., page 11, line 20 ff.).

3. The technical aspects provided by distinguishing features F1, F2, and F3, therefore, are quite limited; they **define a business-related scheme for identifying financial accounts**.

Although this **scheme might be innovative, it nevertheless lacks technical character**. If this **scheme allows the hiding of some "more sensitive information" then this is not based on any technical effect but on social behaviour and banking practice**. The innovation is actually completed before any field of technology comes into play: the very same scheme **could be practised using conventional account books and pencil**. A prior agreement to use a name, a Social Security number or even a telephone number, instead of more sensitive information, for identifying financial accounts need not involve any technical means.

4. It would not make any difference to the assessment of the technical character of the present invention if the claim were construed as meaning a two layered system, where the first layer was a kind of trustee that kept sensitive information under lock and key, retrieved the sensitive account information from the pre-existing identifier and forwarded it to the second layer, the financial institution that held the account and effected the value transfer. **Such a transfer scheme is based on business considerations, possibly intermingled with legal concerns, and lacks any relevant technical effect.**

5. Implementing a scheme as defined by distinguishing features F1, F2, and F3, or such a two layered transfer scheme, on a distributed computer system, such as a web application, does not add anything beyond the obvious: from the viewpoint of a skilled person, programming and implementing a business or trading method as a web application, for example, is no more than a routine task if, as in the present case, the implementation only requires the ordinary use of computer and network technology.

7. The **PayPal-decision arrived at a positive conclusion regarding inventive step**. The board found a need for technical considerations in the matter under scrutiny. In 5.3, the board stated that the "verification of the user's authorisation to use a financial account - relies on a technical understanding of the operation of the transaction system and its respective components." This distinguishes that case from the **present**, where **no technical understanding beyond the trivial is required in using pre-existing identifiers in financial transactions**.

8. In summary, the invention according to claim 1 of the main request does not provide a technical contribution over a common electronic home banking system which goes beyond a routine implementation of a business application on a common distributed computer system. Accordingly it does not meet the requirement of inventive step.

T 0575/10 (Redundanzenheiten/ASTRIUM) of 20.11.2015

European Case Law Identifier: ECLI:EP:BA:2015:T057510.20151120

Vorrichtung zur fehlertoleranten Ausführung von Programmen

Patentansprüche - Deutlichkeit (ja)

Anmeldenummer: 99104451.2
IPC-Klasse: G06F 11/18, H05K 7/00
Name des Anmelders: Astrium GmbH

Kammer: 3.5.01

<http://www.epo.org/law-practice/case-law-appeals/pdf/t100575du1.pdf>

Anspruch 1 in dieser zuletzt geänderten Fassung lautet wie folgt:

"Vorrichtung mit mehreren parallel arbeitenden Recheneinheiten, die zur fehlertoleranten Ausführung von Digitalrechnerprogrammen durch parallelen Betrieb von als Redundanzeinheiten ausgebildeten Recheneinheiten geeignet ist, wobei jede Recheneinheit (1) als Modul ausgebildet ist, und eine beliebige Anzahl an Recheneinheiten[sic] über Datenleitungen (21) zum Austausch von Datensignalen, Taktleitungen (22) zur Zwangssynchronisation und Resetleitungen (23) zum Abschalten einer Recheneinheit parallelschaltbar ist, wobei die Datenleitungen (21), Taktleitungen (22) und Resetleitungen (23) Cross-Strapping-Verbindungen sind und beim Abschalten einer Recheneinheit mittels der Resetsignale die Recheneinheit nicht mehr am parallelen Betrieb teilnimmt und in eine Wartestellung übergeht, dadurch gekennzeichnet, dass eine Mikroprozessor-Steuereinheit (14a, 14b) zur Steuerung der Funktionen der Recheneinheit, zur Durchführung eines Datenvergleichs, des Datenaustauschs und zur Fehlerbehandlung, einen Reset-Schaltkreis (16) für eine fehlertolerante Abschaltung einer benachbarten Recheneinheit, einen Schaltkreis (19) zur Generierung einer der Recheneinheit zugewiesenen Kennung und einen Schreib-/Lesespeicher (9) mit einer Einrichtung zur Fehlererkennung und -korrektur aufweist."

2.2 In Punkt 1.1 ii) der Entscheidungsgründe wird das Merkmal "Reset-Verbindungen zum Austausch von... Signalen zum Ein- und Ausschalten jeder Recheneinheit" in Anspruch 1 beanstandet, da dieses Merkmal **lediglich ein zu erreichendes Ergebnis bezeichne**. Dieses Merkmal *definiert jedoch auch Mittel zur Erreichung des Ergebnisses, nämlich Signalverbindungen zum Austausch von näher definierten Signalen zum Rücksetzen der einzelnen Recheneinheiten*. Derartige Rücksetzfunktionen bei Prozessoren sind dem Fachmann geläufig. Es handelt sich hier um eine **übliche und zulässige Definition einer Schaltung mittels ihrer funktionellen und baulichen Merkmale**. Die Beanstandung wurde daher zu Unrecht erhoben.

2.4 Punkt 1.2 der Entscheidungsgründe beanstandet das Merkmal "das Modul (ist) ein PPE (Processor Pool Element)" im abhängigen Anspruch 4 mit der Begründung, **es handele sich hier nicht um einen üblichen oder wohldefinierten Fachbegriff und es sei unklar, welche technischen Merkmale durch diesen Ausdruck impliziert würden**. Auf dem Gebiet von Mehrprozessorsystemen ist jedoch der *Begriff "Prozessorpool" geläufig*, und damit ist auch die **Verwendung des Begriffs "Prozessorpoolement" in einem Anspruch nicht zu beanstanden**.

3.1 In Punkt 1 i) des Abschnitts III beanstandet die Prüfungsabteilung unter Hinweis auf verschiedene Interpretationsmöglichkeiten, dass **es unklar sei, welche technische Bedeutung oder Wirkung das Merkmal "eine der Recheneinheit zugewiesenen Codierung" habe**. Hierzu ist festzustellen, dass **eine fehlende technische Wirkung oder Funktion eines Merkmals im Anspruch keinen Mangel der Deutlichkeit im Sinne von Art. 84 EPÜ begründet**, wenn der Gegenstand des Schutzbegehrens bestimmt und seine Patentfähigkeit geprüft werden kann. Fehlt jedoch ein direkter kausaler Zusammenhang mit einer technischen Lösung

eines technischen Problems, leistet das Merkmal keinen erfinderischen Beitrag zum Stand der Technik und kann nicht zur Begründung der Neuheit oder der erfinderischen Tätigkeit herangezogen werden.

T 0716/12 (Controlling user interfaces with contextual voice commands/SAP) of 10.9.2015

European Case Law Identifier: ECLI:EP:BA:2015:T071612.20150910

XML-based architecture for controlling user interfaces with contextual voice commands

Amendments - added subject-matter (no)

Inventive step - after amendment

Inventive step - (yes)

Application number: 06004534.1

IPC class: G06F 3/16

Applicant name: SAP SE

Board: 3.5.05

<http://www.epo.org/law-practice/case-law-appeals/pdf/t120716eu1.pdf>

Independent claim 1 according to the main request reads as follows:

"1. A voice extension module (125) for voice-enabling a user interface (100, 700) comprising:

a speech recognition engine (225);

an XML configuration repository (205) that includes one or more XML files specifying one or more voice commands for signaling for execution of one or more semantic operations that may be performed using a first user interface;

a preprocessor (210) that is configured to register with the speech recognition engine (225) the one or more voice commands; and

an input handler (230) that is configured to receive a first voice command and to communicate with the preprocessor (210) to execute a semantic operation from the one or more semantic operations that may be performed using the first user interface, wherein the first voice command is one of the one or more voice commands registered with the speech recognition engine (225) by the preprocessor (210), and wherein the first voice command signals for execution of the semantic operation;

characterized in that

the voice extension module (125) further comprises an error handler (235) which is configured to sequentially

(i) prompt the user for additional information needed to execute the identified semantic operation (620), when the recognized voice command sufficiently identifies a semantic operation, but the recognized voice command does not adequately enable the semantic operation to be executed; and

(ii) handle any errors other than additional information needed to execute the semantic operation in the execution of the identified semantic operation (630), wherein the error handler (235) corrects the errors other than additional information needed to execute the semantic operation to enable execution of the identified semantic operation to continue and to complete, or determines that the error other than additional information needed to execute the semantic operation may not be recovered from, so that the error handler (235) stops execution of the identified semantic operation and undoes any changes made to the user interface (100, 700) as a result of a portion of the semantic that has already been executed, so that as a result, the user interface (100, 700) is returned to the same state as before execution of the identified semantic operation began."

4.2 The subject-matter of claim 1 differs from the disclosure of D1 in the features of the characterising portion.

4.3 The board agrees with the decision under appeal that the underlying technical problem to be solved can be regarded as how to ensure that the voice command adequately enables the semantic operation to be executed.

4.4 The solution according to distinguishing feature (i) was known from the teaching of D10 (see in particular figure 3, query refinement logic 340 and figure 4, step 409 refine query; see also column 10, lines 45 and 46 "user's request may fail to specify enough information" and column 11, lines 51 and 52 "Step 409 detects that additional user input is needed to further refine the query...").

4.5 However, D10 neither discloses nor renders obvious the solution according to distinguishing feature (ii).

4.6 Prior-art publication D10 discloses error handling (see column 10, lines 66 and 67; see in particular figure 4, step 407 checking the spoken user input for deficiencies). D10 also mentions the option of stopping the operation in case of deficiencies (see column 11, lines 1 and 2).

In contrast to the query refinement according to step 409 in figure 4 of D10, step 407 dealing with deficiencies detects whether no obvious problems occurred (see column 11, line 47; figure 4, step 407). However, as can be seen from figure 4 of D10, dealing with those deficiencies merely involves soliciting additional user input (see step 412), i.e. it is again a matter of dealing with errors requiring additional information to execute the semantic operation to enable execution of the identified semantic operation. This is in contrast to what is claimed according to distinguishing feature (ii) of claim 1.

4.7 D10 does not explicitly disclose an undo function. The board, however, agrees with the decision under appeal in this regard that the provision of a well-known undo function does not require inventive skills, since the principle of an "undo" was commonly known in the art of electrical engineering, in particular when dealing with error correction, and no special technical advantages are achieved beyond the normal effects that could be expected. No technical hurdles are identifiable which would require inventive activity to overcome.

However, D10 does not teach how to deal with errors other than those requiring additional information to execute the semantic operation and, hence, does not render feature (ii) according to claim 1 obvious.

7.2 The board notes that claim 1 underlying the decision under appeal was amended during appeal proceedings such that distinguishing feature (ii) of present claim 1 addresses additionally the error handling of errors other than additional information needed to execute the semantic operation, in contrast to feature (ii) of then claim 1. The handling of errors other than additional information needed to execute the semantic operation was not addressed in the decision under appeal.

Moreover, the appellant has plausibly argued that, **although exception handling might have been known in general, it was not known in this specific context.** Indeed, none of the ten prior-art documents on file disclosed exception handling in the present context of errors other than additional information needed to execute semantic operation. Therefore, the board is satisfied that the argument referred to in paragraph 7.1 above does not apply to present distinguishing feature (ii).

T 2146/09 (Automatic database repair/MICROSOFT TECHNOLOGY) of 22.9.2015

European Case Law Identifier: ECLI:EP:BA:2015:T214609.20150922

Systems and methods for automatic database or file system maintenance and repair

Sufficiency of disclosure - enabling disclosure (yes)

Claims - clarity - main request (yes)

Amendments - added subject-matter (no)

Application number: 04779579.4

IPC class: G06F 17/30

Applicant name: Microsoft Technology Licensing, LLC

Cited decisions: T 0281/86, T 0910/03

Board: 3.5.07

<http://www.epo.org/law-practice/case-law-appeals/pdf/t092146eu1.pdf>

Main request

2. It is pointed out in paragraph [0004] of the published application that "[t]raditionally maintenance and repair of a databases [sic] has fallen to database managers and the like having a well-developed skill set and deep knowledge of database systems, or at least to individuals who are familiar with and regularly use database systems - by and large persons relatively skilled with regard to database technologies. On the other hand, typical consumer and business end-users of operating systems and application programs rarely work with databases and are largely ill-equipped to deal with database maintenance and repair issues".

Hence, (see paragraph [0005]), a database-implemented file system for an operating system "creates a scenario where these lesser-skilled end-users will be faced with database maintenance and repair issues they will largely be unable to resolve.

Thus a business/consumer database-implemented operating system file system, or 'database file system' (DBFS) for short, must be able to detect corruptions and recover its databases to a transactionally consistent state and, in the cases of unrecoverable data loss, the DBFS must then guarantee data consistency at the level atomic change units to said data are maintained (i.e., at the 'item' level for an item-based DBFS)" (emphasis added).

2.1 The present application seeks to solve the above problem by providing a data reliability system (DRS) for a DBFS which can respond to and correct data corruptions "automatically and with little or no direct involvement by the end-user" (cf. paragraph [0007] of the published application).

Article 83 EPC

3. In the contested decision, the Examining Division noted that the description of the present application contained one detailed embodiment which described one way to carry out the alleged invention and which had to be used in order to interpret the claims. In the Examining Division's view, the applicant had taken this detailed embodiment as a basis for the main request then on file. As the requirements of Article 83 EPC implied that a skilled person had to be able to carry out the invention over the full range claimed, the Examining Division concluded that in the present case the skilled person should, at the very least, be able to carry out the detailed embodiment on which claim 1 was based.

4. The detailed embodiment described in the present application illustrates a way to carry out the invention in the software environment defined by the operating system developed by the appellant (see paragraphs [0001] and [0005]), and thus refers to some specific routines (see paragraphs [0044] and [0046]) used within the framework of that particular operating system. The subject-matter of claim 1, however, covers more general implementations of the invention and is not limited to any particular software environment.

4.1 The Examining Division's refusal of the application is essentially based on the conclusion that Article 83 EPC could not be fulfilled because the detailed embodiment of the invention, which provided the sole basis for the independent claim, could not be implemented without knowledge of all its specific routines.

4.2 **The Examining Division's interpretation of Article 83 EPC appears to be unnecessarily restrictive, as it would penalize an applicant for giving details of an embodiment which may not be readily available to the notional skilled person.** For instance, an application which contains a claim covering a particular embodiment of an electronic circuit described in detail with reference to some proprietary electronic components not generally available to the public would inevitably not comply with Article 83 EPC, although the functions performed by the proprietary components may be clear from the description and it may be assumed that alternative components for performing the same functions are available to the skilled person.

4.3 In the Board's opinion, **the question to be asked in relation to Article 83 EPC is not if the skilled person is able to implement a specific detailed embodiment of the invention disclosed in the application, but rather if the application contains sufficient information for the person skilled in the art to carry out the invention.**

This is in line with the established jurisprudence of the boards of appeal according to which there is no requirement under Article 83 EPC to the effect that a specifically described example of a process must be exactly repeatable. As long as the description of the process is sufficiently clear and complete, i.e. the claimed process can be put into practice without undue burden by the skilled person taking common general knowledge also into consideration, there is no deficiency in this respect (see e.g. T 281/86, OJ EPO 1989, 202, reasons 6).

T 0336/14 (Presentation of operating instructions/GAMBRO) of 2.9.2015

European Case Law Identifier: ECLI:EP:BA:2015:T033614.20150902

A user interface for an extracorporeal blood treatment machine

Inventive step of "mixed invention" - (no)

Application number: 04769327.0
IPC class: G06F 19/00, A61M 1/14, A61M 1/16, A61M 1/36
Applicant name: Gambro Lundia AB
Opponent name: Fresenius Medical Care Deutschland GmbH
Cited decisions: T 0115/85, T 0119/88, T 0362/90, T 0887/92, T 0599/93, T 1194/97, T 0619/98, T 0641/00, T 0643/00, T 0928/03, T 0154/04, T 1073/06, T 1143/06, T 1704/06, T 1749/06, T 0528/07, T 1741/08, T 0407/11,

Board: 3.5.05

Headnote

In the assessment of inventive step of a claim which comprises technical and non-technical features ("mixed invention") and in which the non-technical features relate to cognitive content presented to the user of a graphical user interface (GUI), i.e. relate to "what" is presented rather than "how" something is presented, it has to be analysed whether the GUI

together with the content presented credibly assists the user in performing a technical task (related to "why" that content is presented) by means of a continued and/or guided human-machine interaction process (see point 1.2).

Claim 1 of the main request reads as follows:

"A user interface for an extracorporeal blood treatment machine, which user interface comprises at least one touch screen, at least one memory containing at least two images, and at least a controller programmed for displaying on a screen (16) of the touch screen at least one display; at least two distinct areas (161) and (162) being included in the at least one display, a first area (161) of the two distinct areas exhibiting at least two touch keys (17), wherein the controller is further programmed for:

- detecting activation of the at least two touch keys (17);
- displaying in a second area (162) of the at least two areas of the at least one display, a first of the at least two images, when a first of the at least two touch keys is activated;
- displaying in the second area (162) of the at least two areas of the at least one display, a second of the at least two images, when a second of the at least two touch keys is activated;

characterized in that:

- the memory comprises a plurality of data relating to the machine and the controller is programmed to display the data on the first area (161) of the at least one display, each item of the data being displayed in a visually associated position to a touch key of the at least two touch keys (17);
- the plurality of data comprises operating instructions for readying the machine for use;
- the at least two images are pictographs which represent configurations of the machine correlated to the operating instructions."

1.2 Article 56 EPC: inventive step

The decisions cited, as far as relevant for the present case, can be summarised as follows:

In case T 599/93 of 4 October 1996, the underlying GUI was configured to simultaneously display multiple images via separate windows divided by demarcation lines to ease the user's effort in evaluating images and to raise his attention to specific image contents via e.g. different colours or brightness. The contribution of the claimed subject-matter over the prior art was to allow the user to dynamically move the demarcation lines via a window setting mark. The deciding board held that the information displayed by the respective windows did not e.g. convey any operating states of the computer system and thus had no technical character (cf. reasons 4).

In case T 1194/97 (OJ EPO 2000, 525), a picture retrieval system was configured to display a coded picture composed of consecutive picture lines being recorded on a record carrier. The

deciding board considered it "appropriate to distinguish ... between data which encodes cognitive content, eg a picture, in a standard manner and functional data defined in terms which inherently comprise the technical features of the system ... in which the record carrier is operative" (cf. reasons 3.3).

In case T 1073/06 of 23 November 2010, the underlying GUI was configured, upon user input, to display objects of a simulation model, including graphical link representations to improve the ease of a user's comprehension of the model. The contribution of the claimed subject-matter to the prior art was related to the utilisation of association data stored in the memory to cause the link between the objects in the simulation model to be displayed with the associated graphical link representation. The deciding board held that "an improvement in the comprehension of a model is a purely mental effect, so that the problem solved is not seen as being technical ... The claimed 'graphical link representations' relate to the state of the simulation model, rather than to the state of the claimed simulation apparatus, and thus constitute presentations of information and are therefore also non-technical" (cf. reasons 5.3 and 5.4).

In case T 1704/06 of 14 December 2007, the GUI of a casino game was configured, upon user input, to display the players' betting and total payout data to verify the payout calculations. The deciding board held that verifying the croupier's calculations was "clearly not a technical issue but a matter of trust in the croupier (or the lack of it)" (cf. reasons 2.2, third paragraph).

Lastly, in case T 528/07 of 27 April 2010, the underlying GUI was configured, upon user input, to display business opportunity information with communication channels appearing as boxes on the display screen to facilitate the exchange of business data. The deciding board held that business opportunity data "are meaningful only to the human mind" and that the channels relate to "the manner information is displayed, something which is normally regarded as non-technical" (cf. reasons 5.4 and 6.1).

1.2.3 It is immediately apparent that the information presented according to the features 1.12) and 1.13) of claim 1, i.e. the operating instructions and the corresponding pictographs, are cognitive rather than functional data in the sense of T 1194/97, since they address directly the user of the blood treatment machine and are consequently meaningful only to a human mind. It is also evident that, contrary to the respondent's view, the distinguishing features are related to the content of the information, i.e. to "what" is presented, rather than to the manner in which the information is presented, i.e. to "how". The details of "how", i.e. displaying pictographs in the second area correlated to the visually associated machine-related data (i.e. tab labels) displayed in the first area, are already known from D2 (see point 1.1.41.1.4 above). Accordingly, those decisions which are related predominantly to the manner of presenting specific content, are of little relevance for ruling on the present case (i.e. decisions T 643/00, T 928/03, T 1143/06, T 1749/06 and T 1741/08).

1.2.4 The next question to be answered is whether the underlying user interface and the content presented credibly assist the user in performing a technical task by means of a continued and guided human-machine interaction process. So, this question is basically related to "why" (i.e. "for what purpose") the content is presented.

To this end, as implied e.g. by decisions T 599/93 (reasons 4) and T 1073/06 (reasons 5.4), it is relevant to determine whether the cognitive information presented constitutes an operation

state, a condition or an event internal to the underlying technical system, prompting the system user to interact with it in a continued and/or guided way for enabling its proper functioning, within the meaning of T 115/85 (OJ EPO 1990, 30, headnote I), T 362/90 of 13 October 1992 (see reasons 4.1) and T 887/92 of 19 April 1994 (see reasons 3.1), or, whether it represents a state of a non-technical application run on that technical system (e.g. the state of a simulation model as in T 1073/06, reasons 5.4; betting states in a casino game as in T 1704/06, reasons 2.2; business conditions as in T 528/07, reasons 5.4). In other words, it has to be established whether the information presented constitutes "technical information", which credibly enables the user to properly operate the underlying technical system and thus has a technical effect, or rather "non-technical information", which is exclusively aimed at the mental activities of the system user as the final addressee.

1.2.5 In the present case, the operating instructions (and the corresponding pictographs) may admittedly somehow support the user in operating the underlying technical device, namely the blood treatment machine. Hence, in a very broad sense, those data could at least linguistically be construed as "technical information", as the respondent suggested. However, not everything that supports a technical task has itself a technical character (cf. T 1741/08, reasons 2.1.12). Rather, the information of features 1.12) and 1.13) is evidently not related at all to any internal system state concerning the proper functioning of the underlying machine in the sense of T 115/85, let alone to a desirable or valid state within the meaning of T 362/90 or T 887/92. Thus, in accordance with T 1143/06 (see reasons 3.4), making reference to T 619/98, an action (possibly) performed by a user in response to a message concerning the technical functioning of an apparatus does not necessarily render technical the information conveyed. The board also agrees with the appellant (referring to T 1143/06, reasons 5.2) that the mere use of an electronic screen, instead of a piece of paper, for conveying information to the user does not make the information displayed more technical, so that the claimed display of operating instructions could well, without changing the resulting overall effect, be replaced with a technical manual on paper through which the readers may flip as they please.

As to the "why" issue, the respondent argued at the oral proceedings before the board that the technical task underlying claim 1 was to "help a nurse in setting up the blood treatment machine in a safe and efficient way". This was done by providing "enhanced information" according to features 1.12) and 1.13) on a small-size display screen, referring to page 16, second paragraph of the description as originally filed ("In the illustrated embodiment, in which the touch-screen is 12 inches with 800x600 pixel, the resolution of the second area 162 of the screen, which ... occupies an area of 250*405 pixel, is about 83 pixels per inch"). In that context, the board would first like to point out that claim 1 in general and its distinguishing features in particular are not limited to any size of the display screen or to any resolution of the content presented. Furthermore, the board notes that the content presented, i.e. operating instructions (and the corresponding pictographs), constitutes pre-stored static information according to the present invention. Hence, neither is the selection of any operating instruction by a user activating the corresponding touch key conditional on any instant internal state of the blood treatment machine, nor does the automated display of the respective pictograph provide any details on the current operating state of the machine. Since, according to the wording of claim 1, the user may activate any touch key associated with any operating instruction at any time, there is even no temporal order to be observed with regard to those instructions, paving the way for any type of misuse on the part of the user and resulting maloperation of the machine, contrary to the alleged aim of a safe and efficient machine set-up.

As a consequence, the information provided according to features 1.12) and 1.13) cannot credibly support a continued and guided human-machine interaction process. Thus, it cannot assist the user in performing the above-mentioned technical task. The board concludes that displaying that information may, at most, aid the user in better comprehending and/or memorising the steps to be taken for setting up the blood treatment machine or, as the respondent put it, facilitate understanding of the steps required for proper machine preparation, minimise errors of interpretation or improve the "average user's" intelligibility about what he is supposed to do during the various machine set-up phases. Hence, it only addresses the human mental process of an "average user", however the latter is supposed to be defined based on personal skills and preferences (see e.g. T 407/11 of 10 April 2014, reasons 2.1.4). Contrary to the respondent's view, this must be considered a non-technical effect.

In that respect, the board cannot follow the logic of the decision under appeal, according to which the distinguishing features are not non-technical, apparently for the sole reason that the corresponding machine's memory storing the operating instructions to prepare the machine for use was a "technical entity" and was "technically changed by entering said specific data" (cf. appealed decision, section 13.1). But this "phenomenon" regarding a computer memory would certainly also hold true for entering, for example, purely business-related data into that memory, which would not however bring about a technical effect other than storing that non-technical data by technical means. It therefore appears to the board that the above reasoning of the opposition division is more concerned with the presence of an "invention" within the meaning of Article 52(2) and (3) EPC rather than with detecting non-technical features within the framework of assessing inventive step under Article 56 EPC (see e.g. Guidelines for Examination in the European Patent Office, September 2013, G-II, 2 and G-VII, 5.4).

Hence, **distinguishing features 1.12) and 1.13) constitute presentations of information as such**, which, according to the established jurisprudence of the Boards of Appeal, cannot be taken into account in the assessment of inventiveness.

T 2230/10 (Context-based information retrieval/PHILIPS) of 3.7.2015

European Case Law Identifier: ECLI:EP:BA:2015:T223010.20150703

Context-based and user-profile driven information retrieval

Inventive step - all requests (no)

Application number: 99923793.6

IPC class: G06F 17/30

Applicant name: Koninklijke Philips N.V.

Cited decisions: T 0027/97, T 0258/97, T 0258/03, T 0928/03, T 0154/04, T 0354/07, T1358/09, T 2035/11

Board: 3.5.07

<http://www.epo.org/law-practice/case-law-appeals/pdf/t102230eu1.pdf>

Claim 1 of the main request reads as follows:

"A method of enabling a user to query an electronic document base, the method comprising the steps of:

- allowing a user to enter query words;
- generating one or more additional keywords based on a profile of the user; and
- searching in an electronic document base for documents that match the combination of query words and additional keywords,

characterized by further comprising the steps of:

- generating a set of concept keywords based on the results of the search;

and

- storing the set of concept keywords in a dynamic part of the profile of the user."

2. The invention

2.1 The invention relates to retrieval of information from an electronic document base on the basis of search queries. The application *inter alia* explains that if a search query is not very precise, a large percentage of the results returned by existing search engines will not be relevant to the user. The invention hence aims to improve the quality of returned search results by making search queries more precise. To this end, it keeps track of the context in which the user is searching, and it uses this context to supplement query words entered by the user with "additional keywords".

2.2 The search context is tracked by means of a user profile which comprises a static part and a dynamic part. The static part represents the user's long-term interests and is initialised, for example, on the basis of information provided by the user about his or her fields of interest. The dynamic part is intended to reflect the user's current focus. It contains "concept keywords" that are generated on the basis of the results returned by his or her previous searches.

2.3 The description of the application does not contain much detail on how the static and dynamic parts of the user profile are represented, nor on how additional keywords and concept keywords are generated. At the oral proceedings, the appellant submitted that, as stated on page 5, lines 18 to 21, the relevant algorithms were all known from the literature.

3. Main request - inventive step

3.1 Document D1 relates to a method of selecting additional search terms to be added to a search query on the basis of a user profile and the terms of the query in order to improve "retrieval effectiveness" (see title, abstract, and page 232, left-hand column, second full paragraph, to page 232, right-hand column, up to "A preliminary experiment ..."). Document D1 hence discloses the features of the preamble of claim 1 in combination.

3.2 The user profile of document D1 comes in the form of a "concept (construct) dependence tree" created by means of "personal construct theory" involving active user participation (see abstract). In this approach, the user identifies "a vocabulary (concepts) that is natural to him/her" and rates documents from a learning set against the concepts identified (page 225, right-hand column, last paragraph). The user profile of document D1 is hence "static" in the sense of the present application.

3.3 The subject-matter of claim 1 of the main request differs from the method of document D1 in that the user profile further contains a "dynamic part" in which "concept keywords" are stored that are generated on the basis of the results of a search.

It follows from the description of the published application on page 4, lines 23 to 27, in combination with page 5, lines 22 to 26, that the (updated) dynamic part of the user profile is taken into account in the step of generating the "additional keywords" for the (next) query. For the assessment of inventive step, the Board will interpret claim 1 accordingly.

3.4 These distinguishing features modify the algorithm that is used to generate the keywords which are added to a search query before it is handed over to a search engine. In document D1, the additional keywords are generated on the basis of the query terms and a user profile which does not change between queries. In the present invention, the additional keywords are generated on the basis of the query terms and a user profile which comprises a portion containing "concept keywords" derived from the results returned by previous search queries.

Although abstract algorithmic features as such are excluded from patentability (Article 52(2)(c) and (3) EPC), they may provide a technical contribution to the extent that they interact with the technical subject-matter of the claim for solving a technical problem (see decision T 154/04, OJ EPO 2008, 46, reasons 5, under (F), and reasons 13).

3.5 In this respect, the appellant argued that the distinguishing features led to increased query specificity and thus addressed a technical challenge in the field of document retrieval. Some query terms denoted different concepts depending on the context. The term "processor", for example, might have the meaning of "food processor" in the context of cooking and of "microprocessor" in the context of computers. A search directed to such a query term might therefore return documents from different parts of the document repository and thereby return a larger amount of documents than if the search had been limited to one of the concepts. Search results comprising too many documents could be useless even if they included the relevant documents. An increase in query specificity was therefore a technical result already on its own.

In addition, an inherent consequence of increased query specificity in the context of information retrieval was that the search returned a reduced number of documents. That was a technical effect since the skilled person would immediately recognise the causal link with at least the following real tangible benefits:

- a reduction of bandwidth usage between the electronic document base and the presentation mechanism when communicating the results of the search;
- a lower load on the document retrieval mechanism, for example in the form of fewer hard disk drive seek and read operations; and

- reduced complexity for the presentation mechanism which, for example, would not need to provide a multi-page graphical user interface.

Referring to decisions T 27/97 of 30 May 2000, T 258/97 of 8 February 2002 and T 354/07 of 27 January 2010, the appellant argued that features causally linked to a technical effect could not be disregarded in assessing inventive step. Referring to decision T 928/03 of 2 June 2006, it submitted that the mere fact that non-technical aspects might be involved did not cancel out the technical effect of a reduced number of search results.

The appellant further submitted that increased query specificity led to different parts of the electronic document base being accessed and therefore had an effect on search complexity.

3.6 The **Board notes that the determination of the claim features which contribute to the technical character of the invention is made, at least in principle (the question may in practice be left open for features which anyway are part of the closest prior art), without reference to the prior art** (see T 154/04, supra, as explained in T 1358/09 of 21 November 2014, reasons 5.4). That the claimed invention might achieve better results than the method of document D1 is therefore in itself not an indication that the algorithmic modification is technical, although it may be important in the assessment of inventive step once technicality has been established. **Technicality is hence more about control of technical parameters than about improvement.**

3.7 Furthermore, while the appellant is correct that the case law of the boards of appeal generally **recognises a technical contribution of non-technical features if they are causally linked to a technical effect, it is not the case that any physical change qualifies as a technical effect.**

For example, in decision T 258/97 cited by the appellant, the board considered that changing a dialling and redialling sequence changed the operation of a communication apparatus and thus indisputably caused a physical effect, but that it was doubtful that changing the sequence had any technical effect in the sense of a physical effect which was purposively used in the solution of a technical problem (see reasons 6).

Similarly, in decision T 258/03, OJ EPO 2004, 575, the board admitted that certain features corresponding to the rules of an auction when performed in a server computer changed the overall state of that computer, but it did not regard this as a technical effect (reasons 5.4). Consequently, the fact that those auction rules eliminated certain data transmission delays when compared to the prior art did not contribute to an inventive step (reasons 5.7).

The other decisions cited by the appellant do not deviate from this approach.

3.8 The Board considers that, for the purpose of determining the technical contribution of the algorithm underlying the present invention, a physical effect resulting from a particular choice of additional keywords is only to be taken into account as a technical effect to the extent that the choice or, equivalently, the algorithm is based on technical considerations (cf. decision T 2035/11 of 25 July 2014, reasons 5.2.3).

3.9 At the oral proceedings, the appellant conceded that the insight that a query term might have different meanings depending on the query's context was of a non-technical linguistic

nature, but in its view the linguistic considerations relevant to claim 1 were limited to that insight.

In the **Board's view, the algorithm for selecting additional keywords underlying claim 1 is fully determined by considerations that are, in a broad sense, linguistic.** The "context" determining the meaning of otherwise ambiguous query terms is a linguistic concept. That the context for a user's search query may be related to the user's long-term interests is similarly linguistic in nature. The Board considers that the same holds true for the idea that the context may be related to "concept keywords" derived from the results returned by previous queries, for example on the basis of the textual content of the returned documents.

3.10 The Board is aware that where **the formulation of an algorithm can be "explained" as the outcome of a series of non-technical considerations, this does not rule out the possibility that the algorithm, in its claimed context, may also reflect certain technical considerations.** But in the present case the Board is not able to identify any such considerations.

In particular, the algorithm does not reflect technical considerations regarding search complexity and the parts of the electronic document base which are being accessed (see point 3.53.5, last paragraph). The application as filed in fact does not contain any details of the technical structure of the electronic document base and its associated search engine; so it cannot be seen how technical control over the functioning of those entities can be exercised through a suitable choice of additional keywords.

The Board also does not accept that the algorithm is based on technical considerations in that it has been purposively designed with a view to the relevance to the user of the search results obtained, as this relates to the cognitive content of the returned documents.

3.11 The Board concludes that the conceptual algorithm for generating additional keywords underlying claim 1 does not contribute to the technical character of the invention, so an inventive step can be present only in its technical implementation. Since the claim in this respect does not specify any details, and since the description of the application merely states that the required algorithms are known in the art (see page 5, lines 18 to 21, of the published application), it must be assumed that the skilled person would have no difficulty in implementing the steps of generating concept keywords based on the results of the search and generating additional keywords based inter alia on those concept keywords.

3.12 At the oral proceedings, the appellant attempted to draw an analogy with methods in the field of audio and video processing. However, such methods are typically not based on linguistic considerations.

3.13 It follows that the subject-matter of claim 1 lacks inventive step over the method of document D1 (Articles 52(1) and 56 EPC).

Examples of recent 2015 Board of Appeals decisions related to Software Innovations

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Catchwords:

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