

This document includes some recent decisions of the EPO in 2017 with regards to software related inventions and shows relevant extracts from the respective decisions.

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T 1691/12 (Selective status notifications in locked state/BLACKBERRY) of 27.9.2017

European Case Law Identifier: ECLI:EP:BA:2017:T169112.20170927

**A method of interacting with electronic devices in a locked state and a handheld electronic device configured to permit interaction when in a locked state**

**Inventive step - (yes)**

Application number: 09172149.8

IPC class: G06F 1/16, G06F 3/048

Applicant name: BlackBerry Limited

Board: 3.5.06

<https://www.epo.org/law-practice/case-law-appeals/pdf/t121691eu1.pdf>

Independent claim 1 of the sole request reads as follows:

"A handheld electronic device (100), comprising:

a controller (116);

a display screen (112) connected to the controller (116);

an input device connected to the controller (116);

a communication subsystem (104) connected to the controller (116) for communication over a wireless network (150);

a notification element connected to the controller (116);

wherein the controller (116) is configured for:

initiating a locked state on the device in response to detection of a trigger condition;

deactivating the display screen;

monitoring for a plurality of predetermined inputs for interacting with the device (100) via the input device when the device (100) is in the locked state;

with the display screen deactivated, generating, without unlocking the device (100), a notification regarding a new event and/or device state via the notification element in response to detection of one of said plurality of predetermined inputs when the device is in the locked state; and

triggering an unlocking process in response to an input other than said plurality of predetermined inputs for interacting with the device (100) in the locked state;

wherein in the locked state restrictions limiting the interaction with the device (100) are enforced, the restrictions prevent entry or extracting of information from the device (100) other than the notification in response to the plurality of predetermined inputs and the unlocking process triggered by the other input,

wherein at least two types of notifications are provided, each type of notification associated with a respective application on the device, wherein each type of notification is provided in response to detection of a respective different predetermined input when the device is in the locked state."

### 3. Inventive step; Article 56 EPC

3.1 Essentially in line with the reasoning given in the appealed decision (Reasons 1.1), the board considers that D5 constitutes a suitable starting point for the assessment of inventive step.

3.2 D5 discloses a handheld electronic device, in particular a mobile phone (see figure 1).

Said device has a display screen (12) which, being a mobile phone display screen, implies that the display screen is connected to a controller that is also part of the handheld electronic device.

An input device is connected to the controller (see par. [0011]: "set of keys").

Since the handheld electronic device in D5 is a mobile phone, it implicitly comprises a communication subsystem connected to the controller for communication over a wireless network (viz. a cellular network, e.g. a GSM, UMTS or LTE network).

Notification elements which can be illuminated (i.e. the trackball 20, the area surrounding the trackball or the area surrounding the set of buttons 18) are connected to the controller. At least two types of notifications can be provided, each type of notification associated with a respective application on the device (see D5, par. [0032]: the notifications provided by the

trackball 20, the area surrounding the trackball or the area surrounding the set of buttons 18 are, respectively, the device state, user profile information and the battery level).

In D5, the controller is configured to initiate a locked state on the device in response to a trigger condition. (The locked state is mentioned in D5, par. [0019]. It is implicit for the skilled person that the controller will not initiate the locked state simply randomly but in response to something, i.e. a "trigger condition").

3.3 It is common ground that the subject-matter of claim 1 differs from the disclosure of D5 at least in that

a) the display screen is deactivated when the device is in the locked state;

b) each type of notification regarding a new event and/or device state is provided in response to detection of a different predetermined input when the device is in the locked state.

3.4 The board is of the opinion that features (a) and (b) **solve unrelated problems.**

3.5 **Feature (a) saves energy.** Deactivating the screen of a mobile phone in a locked state in order to save energy was however **commonplace already at the priority date of the application.**

3.6 **Feature (b) has the effect that the user can selectively switch on or off the different types of notifications.** (The user would want to do this for instance because he or she is annoyed by the LEDs but needs some information nonetheless, or because there are more notifications of interest than there are notification elements.)

The **solution provided by feature (b) is considered not obvious.** If a user wanted further customisation of the notifications, he or she would normally go through some standard menu visible on the screen of the mobile phone of D5.

There is no suggestion in D5 to allow any inputs in the locked state (except for unlocking). There is also no suggestion in D5 to provide different inputs for different notifications.

The board further considers that none of the other documents cited in the search report, even when combined with the teaching of D5, render the solution of feature (b) obvious.

3.7 The board is therefore of the opinion that the subject-matter of claim 1 and, for similar reasons, that of method claim 14 is not obvious. The requirement of Article 56 EPC is consequently satisfied.

## T 2135/14 (Upgrading an application program/NTT) of 25.10.2017

European Case Law Identifier: ECLI:EP:BA:2017:T213514.20171025

### **Communication terminal device and program**

#### **Inventive step - after amendment (yes)**

Application number: 04007536.8  
IPC class: G06F 9/445, H04M 1/725  
Applicant name: NTT DoCoMo, Inc.  
Cited decisions: T 0410/96, T 0789/07

Board: 3.5.06

#### The invention

1. The application relates to upgrading software on a mobile device, typically a mobile phone, in such a way that bandwidth is not wasted on applications which are no longer used and the user is saved the bother of having to actively check for upgrades (see paragraph bridging pages 1 and 2, and page 2, penultimate paragraph).

...

1.2 The application to be upgraded is first suspended (see figure 8, SB1). It is then determined whether the "upgrade [...] can be completed" (see SB2). It is disclosed that this can be predicted if the "radio field intensity" or the remaining battery power is sufficiently high (i.e. above a "threshold"; see page 13, lines 8-18 et seq. and page 15, lines 14-23). Present claim 1 is limited to the former alternative. It is further disclosed that the upgrade may be terminated if the user does not give his confirmation (page 14, lines 5-7). The upgrade is only started if it is expected that it "can be completed" (SB4). If not, or if the upgrade fails for other reasons (SB5), the old program is resumed (SB3).

Claim 1 reads as follows:

"A communication terminal device (10) comprising:

communication means for communicating with a provider of an application program via a communication network (20);

execution means for executing an application program, and for executing specified commands contained in said application program;

suspend means for suspending operation of said executed application program when said specified commands are executed by said execution means;

upgrade means for upgrading said application program by communicating, by said communication means, with said provider of an application program whose operation is suspended by said suspend means;

the upgrade means including terminate means for terminating operation of said application program whose operation is suspended by said suspend means; and

resume means for resuming the operation of said application program; characterized in that

the execution means is such that, in operation, the upgrade means for upgrading said application program is operated when said specified commands contained in said application program have been executed by said execution means, and when said suspend means has been operated for suspending operation of said application program;

upgrading, by the upgrade means, said application program includes operating the terminate means to terminate said application program and executing a new version of said application program;

determination processing is arranged to be performed to determine whether the radio field intensity is larger than a threshold in a state in which operation of said application program is suspended;

upgrading is arranged to be started if it is determined in the determination processing that the radio field intensity is larger than a threshold; and

the resume means is used if it is determined in the determination processing that the radio field intensity is lower than the threshold, so as to resume the operation of the application program."

The prior art

2. D1 discloses the Mobile Information Device Profile MIDP (see page 1), which defines a set of interfaces for mobile Java applications (MIDlets; see page 431 et seq., chapter 12). D1 deals inter alia with user-initiated over-the-air provisioning of MIDlets (see page 11 et seq., esp. section 1 of chapter 2). A MIDlet can "start, pause, or destroy itself" (page 431, penultimate paragraph; pages 439-440, MIDlet states). Before a MIDlet is updated, it "MUST" be stopped; other MIDlets "MAY" have to be stopped, too (see page 15, section "MIDlet Suite Update"; pages 447-448, platformRequest; see esp. page 447, last paragraph). D1 discloses that an upgrade may fail for various reasons (including, for instance, insufficient memory or loss of service) which are reported by means of a "status code" in a status report (see page 16, paragraphs 2, 7 and 8, and the table bridging pages 16 and 17).

The issue to be decided

3. Claims 1 and 7 differ from D1 in two ways:

(a) They **distinguish between terminating an application program and merely suspending it so that it can be resumed**, whereas D1 discloses "stopping" and "destroying" an application program without mentioning the possibility of resuming it, and they require an application program to be suspended before being upgraded.

(b) They specify that **after suspension it is determined whether the radio field intensity is larger than a threshold. Only if it is indeed larger is the upgrade started; if it is not, the suspended application program is resumed.**

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3.2 The **examining division** took the view that these **two features were merely juxtaposed** and that their inventive merit could therefore be assessed separately, and found that difference (b) in particular was "an implementation detail consisting of an arbitrary choice of one or more possible failure scenarios out of a large number of readily foreseeable [...] scenarios" (see the decision, page 8, items a) and b)).

3.3 The appellant challenged both findings. It argued that there was a synergy between suspending the application program before the upgrade and the subsequent checking of the radio field intensity (see grounds of appeal, point 3.5), because suspending any potential use of "wireless communication resources" by the application program being upgraded made more reliable the "a priori consideration of the radio field intensity for determining whether the download can be completed" (see point 3.4, last paragraph). And it took the position that claim 1 was inventive over D1 by virtue of the two features, especially because D1, while mentioning several possible "failure scenarios", did not consider any "environmental factors associated with the wireless nature of the communication" or, in particular, "the radio field intensity" (see point 3.6).

3.4 Furthermore, the appellant argued that the examining division had incorrectly construed the claimed "execution means for executing [an] application program" as an execution means merely "suitable for" execution rather than, as it should have done in view of decision T 410/96, as an execution means "adapted for" execution (see the decision, page 3, third paragraph from the bottom, and the grounds of appeal, point 2).

The board's position

4. The board agrees with the appellant in principle that the "execution means for executing" must, following T 410/96 (esp. reasons 6), be construed as being "adapted for" such execution rather than as merely being "suitable for" it, as the examining division stated. In the present case, however, this is not a crucial difference, because the "communication terminal device" according to D1 is clearly not only suitable but also adapted for running a program and thus any of its commands, irrespective of whether the latter are expressly specified or not.

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7. As regards the **alleged synergy between features (a) and (b)**, the board takes the following view.

7.1 Claims 1 and 7 refer to radio field intensity, i.e. the strength of the relevant signal.

7.2 It is well known that signal strength is related to bandwidth. Reduced signal strength increases the risk of transmission failure and protective measures against failure require some bandwidth.

7.3 Obviously, if the application program being upgraded consumes "wireless communication resources" the bandwidth available for other purposes is reduced. However, the signal strength is not substantially affected. Therefore, the same radio field intensity will be determined irrespective of whether the application program being upgraded is suspended before such determination or only thereafter.

7.4 In its letter of 21 September 2017, the appellant conceded this point (see page 3, point 3, paragraphs 1 and 2), but argued that synergy existed nonetheless, because suspending the application program according to (a) rather than stopping it made it possible to resume it if the upgrade was not initiated due to an insufficient radio field intensity according to (b) (see the same letter, paragraph bridging pages 3 and 4).

7.5 The board is not convinced. It notes **in particular that anticipation of download failure due to a low radio field intensity would also work without suspension, namely if the application program to be upgraded was not stopped until the radio field intensity could be measured and it was decided to start the upgrade. And, conversely, the advantage that a suspended program can be resumed if necessary is independent of the criterion relied upon to decide whether an upgrade can be started.**

7.6 The board therefore agrees with the decision under appeal that **there is no non-trivial synergy between features (a) and (b)** and that, hence, their inventive merit can be assessed separately.

8. On the question of inventive step, the board takes the following view.

8.1 Re (a). In the board's view it is **obvious for the skilled person** - and also known from D1 (see page 16, paragraph 2) - that **upgrades may fail and that, in this situation, execution of a program that has been "stopped" or "terminated" for an upgrade may have to be resumed**. Furthermore, the board considers it to be straightforward for the skilled person to provide this option in the context of D1.

8.2 Re (b). The board considers that **feature (b) solves the technical problem of avoiding upgrade failure**.

8.2.1 The board notes that **low radio field intensity does not imply that an upgrade cannot be completed at all. It may just take longer to complete, which may well be acceptable to a user. And radio field intensity might vary in an unpredictable way. Nonetheless, the board accepts that the signal strength allows a reasonable prediction of whether the upgrade will succeed within an acceptable time frame, or at all.**

8.2.2 D1 mentions the possibility of upgrade failure for a number of reasons, but **does not explicitly mention low signal strength** as one of them (see esp. the table bridging pages 16 and 17). Moreover, it does not discuss any means of dealing with an upgrade failure when it occurs, or of anticipating failure (apart from mentioning that "status reports" may have to be resent; see page 16, paragraphs 2, 7 and 8).

8.2.3 In the decision (see page 8), it is suggested that low "radio field intensity" is one of several commonly known parameters that might cause an upgrade to fail. Furthermore, it is stated that these "failure scenarios" were readily foreseeable so that resuming the old program and not carrying out an upgrade was an "arbitrary choice of [...] readily foreseeable [failure] scenarios".

8.2.4 **It is true in principle that an upgrade may fail for many reasons. However, the board disagrees that they are necessarily foreseeable.** While, for instance, it is clear that the download of the new program - and thus the upgrade - must fail if the remaining working memory is too small, **it may not be foreseeable when and for how long a server might become unreachable.** Also, while **it may be *obvious ex post* to determine that an upgrade failure was due to insufficient signal strength,** this alone does not, in the board's view suggest that the initial signal strength should be used as an indicator for the likely success of an upgrade.

8.2.5 The board concludes that feature (b) would not have been obvious to the skilled person from D1 and common general knowledge alone.

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T 2019/12 (Abgabe einer Order / Lacqua) of 20.6.2017

European Case Law Identifier: ECLI:EP:BA:2017:T201912.20170620

**Verfahren zum schnellen Abgeben einer Wertpapier-,  
Futureskontrakt- oder Warenorder und Computersystem zu  
diesem Zweck**

**Erfinderische Tätigkeit - Benutzung von Mauskoordinaten auf einer Chartkurve zum  
Festlegen eines Preises (nein  
Erfinderische Tätigkeit - naheliegend)**

Anmeldenummer: 00125816.9

IPC-Klasse: G06F 17/60

Name des Anmelders: Laqua, Hannelore

Angeführte Entscheidungen: T 0641/00

Kammer: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t122019du1.pdf>

Anspruch 1 gemäß Hauptantrag lautet:

Verfahren zum schnellen Abgeben einer Wertpapier-, Futureskontrakt- oder Warenorder, bei dem

- auf einem Bildschirm in einem Koordinatensystem eine Chartkurve (10) angezeigt wird, die einen ständig aktualisierten Verlauf eines Kurses eines bestimmten Wertpapiers, Futureskontrakts oder einer bestimmten Warenart anzeigt, wobei die X-Achse des Koordinatensystems die Zeitachse und die Y-Achse des Koordinatensystems die Preisachse ist,

- auf eine erste Eingabe eines Benutzers hin eine Bedienungsoberfläche (30, 34, 38) auf dem Bildschirm der Chartkurve (10) geöffnet wird, mit der ein Orderprogramm für das bestimmte Wertpapier, den Futureskontrakt oder die Ware bedient wird, wobei zumindest das/der mittels des Orderprogramms zu bestellende Wertpapier/Futureskontrakt bzw. die Ware als dasjenige Wertpapier, derjenige Futureskontrakt bzw. diejenige Ware festgelegt ist, dessen/deren Kurs auf der Chartkurve (10) angezeigt wird, und nicht durch den Benutzer eingegeben wird, und

- auf eine zweite Eingabe des Benutzers hin eine Order zum Kauf oder Verkauf des bestimmten Wertpapiers/Futureskontrakts oder der bestimmten Ware zu einem Orderempfänger abgesandt wird.

1. Die Erfindung betrifft das schnelle Abgeben einer Wertpapier-, Futureskontrakt- oder Warenorder. Obwohl in keiner der sechs vorliegenden Fassungen des Anspruchs 1 ein Computer erwähnt wird, ist jedoch klar, dass die Verfahren mittels eines Computers ausgeführt werden ("Bildschirm", "Bedienungsoberfläche", "Orderprogramm" ...).

2. Gemäß dem in der Beschreibungseinleitung genannten Stand der Technik arbeitet der Händler üblicherweise mit zwei Bildschirmen. Auf dem ersten wird für ein bestimmtes Wertpapier der zeitliche Verlauf des Preises in Form einer Chartkurve dargestellt (Abätze 0001 - 0005 der veröffentlichten Anmeldung). Auf dem zweiten gibt der Händler die Daten für eine Order ein. Die eingegebenen Daten identifizieren das Wertpapier, den Preis, und die Stückzahl.

3. Der Händler steht oft unter erheblichem Zeitdruck. Bei schnellem Tippen treten aber Tippfehler auf. Dadurch könnte zum Beispiel das falsche Wertpapier gekauft werden.

4. Die Erfindung befasst sich mit diesem Problem und soll eine schnellere und mit weniger Fehlern behaftete Dateneingabe bieten. Erfindungsgemäß muss der Händler keine Daten selbst eintippen.

Stand der Technik gemäß D1

5. Bei D1 handelt es sich um ein Benutzerhandbuch für das "OM CLICK"-System, welches das Zusammenstellen und Abgeben von Ordnern zum Kauf bzw. Verkauf von Finanzinstrumenten über eine Serie von Fenstern ermöglicht. Für die Zwecke dieser Entscheidung reicht es aus, die Fenster "Price Information" und "Execute Order" (D1, Seiten 13 und 15) zu erläutern.

6. Der Händler kann anhand der im Price-Information-Fenster dargestellten Information ein Finanzinstrument aussuchen. Durch einen Doppelklick auf den Preis, wird das Execute-Order-Fenster geöffnet. Klickt der Händler anschließend auf "Buy" oder "Sell", wird eine Order gesendet. Dabei muss der Händler keine Daten eingeben. Das Finanzinstrument, der Preis sowie die Stückzahl ist in dem Execute-Order-Fenster bereits eingegeben.

7. Der Händler muss aber nicht unmittelbar auf "Buy" oder "Sell" klicken. Eine vorherige Anpassung des Preises oder der Stückzahl, entweder durch Eintippen oder durch Klicken auf die neben den Feldern stehenden Pfeilen, ist ebenfalls möglich.

#### Hauptantrag

8. Anspruch 1 definiert ein Verfahren zum Abgeben einer Order, in dem auf eine erste Eingabe des Händlers, eine Bedienungsoberfläche auf dem Bildschirm einer Chartkurve geöffnet wird. Auf eine zweite Eingabe wird die Order gesendet.

9. D1 offenbart ein Verfahren, in dem ein erstes Fenster (D1, oben genanntes Price-Information-Fenster) auf einem Bildschirm dargestellt wird. Auf eine erste Eingabe (Doppelklick auf den Preis) wird eine Bedienungsoberfläche in Form des Execute-Order-Fensters geöffnet, in der das Wertpapier schon eingegeben ist. Auf eine zweite Eingabe wird eine Order gesendet.

10. Somit offenbart D1 alle in Anspruch 1 definierten Merkmale, bis auf die Chartkurve für das ausgewählte Wertpapier.

11. Durch die Chartkurve wird Information über das Wertpapier dargestellt, anhand welcher der Händler Entscheidungen treffen kann. **Der Beitrag der Chartkurve liegt lediglich in der vermittelten Information. Die Kammer erachtet dies als reine Wiedergabe von Information, die als solche von der Patentierbarkeit ausgeschlossen ist (Artikel 52(2)(d) EPÜ) und somit nicht zur erfinderischen Tätigkeit beitragen kann.**

...

13. Somit bleibt die Kammer der Auffassung, dass die erfinderische Tätigkeit verneint werden muss, da der einzige Unterschied keinen technischen Beitrag leistet. Der Hauptantrag ist aus diesem Grund nicht gewährbar (Artikel 56 EPÜ).

## T 2324/14 (Optimizing source code/SAP) of 4.10.2017

European Case Law Identifier: ECLI:EP:BA:2017:T232414.20171004

Optimizing source code

### Claims - clarity, all requests (no)

Application number: 12007773.0  
IPC class: G06F 9/45, G06F 9/44  
Applicant name: SAP SE  
Cited decisions: G 0007/93

Board: 3.5.06

<https://www.epo.org/law-practice/case-law-appeals/pdf/t142324eu1.pdf>

### The invention

5. The application relates to the generation of small and fast (source) code for so-called "decision tables". In comparison with "conventional code generation techniques", this is referred to as "optimizing source code" (see para-graphs 2, 3, 17 and 50).

5.1 Decision tables are not defined in the application but are illustrated by way of example (see figures 2 and 5, and paragraphs 46 et seq.). There is a column for each input (field) and for the result (field), and it is explained that each row of the decision table implements a "business rule" which defines the value of the result (field) on condition that the inputs (input fields) have the indicated value (see paragraph 49). It is stated that "values may be alphanumeric or Boolean values, including ranges or expressions, as well as" various "comparisons" or "determination[s]" (see paragraphs 47 and 50).

5.2 Code generation too is explained by way of example only. It is disclosed that the decision table of figure 2 is meant to be mapped to the code depicted in figure 4. It is stated and can be seen that the code avoids redundant evaluations of conditions (see paragraphs 50 and 61-64, especially the last sentence of paragraph 62).

5.3 The description explains that the code generation process is aided by three tables (figures 3A-3C) generated from a given decision table. In a nutshell, the first table (figure 3A) lists, for each combination of field and "value" entry in the decision table, the rows in which the decision table contains that combination. The second table (figure 3B) contains a row for each cell in the decision table, ordered left to right and top to bottom, where the "values" in the decision table are replaced by identifiers ("Value ID"); multiple occurrences of the same "value" for a given field in the decision table will receive the same identifier (e.g. the "1" in column 340 of rows 345a and 345e represents the "value" "=A" in the "field 1" column of the decision table). The third table (figure 3C) lists all possible "values" to be checked in the decision table (see column 360) and associates them with a unique position in a "cell buffer". Although only values are listed, it is understood that each cell buffer position is meant to represent an individual condition (such as field 1 =A) rather than just a value ("A").

5.4 In the generated code, such conditions will each be evaluated at most once, in the order in which they occur in the table of figure 2. If a condition holds, the corresponding cell buffer position will be set to "x". As soon as all conditions for a particular rule in the decision table are evaluated, it is tested whether the corresponding results in the cell buffer have all been set to "x", in which case the rule determines the result value.

#### Main and first auxiliary request

6. **Contrary to what the claims specify, the invention is not about "optimizing code" - in the sense of transforming suboptimal code into optimal code - but about directly producing code which is meant to be "optimal".**

7. More importantly, though, **the term "optimal" on its own is unclear**. A priori, code may be optimal in several ways, and different optimality criteria may contradict each other. Claim 1 of the main and the auxiliary requests does not define "optimality" explicitly (nor does the description), but it also does not define the code being generated in a way that allows the skilled person to deduce in which way it is meant to be "optimal", let alone establish that it actually is reliably and reproducibly "optimal" in this sense. In fact, claim 1 of these two requests does not specify the generated code at all, requiring only that it be generated by "looping over the second and third tables" (see lines 2-4 from the end of claim 1).

8. **The claims also leave open how the claimed iteration ("looping over") is meant to use the second and third tables and the cell buffer to generate code.**

9. The board thus concludes that **claim 1 of these two requests is unclear**, Article 84 EPC, because **it fails to define the code to be generated, the central property of the code to be generated ("optimality") and the steps necessary to produce that code, even though the property is expressly claimed and the method is claimed as being for generating optimized code.**

#### Second auxiliary request

10. As the preamble of claim 1 of the second auxiliary request **refers to a "method for generating optimized code"** rather than to "optimizing code" and now states in what way the generated code is meant to be "optimized", the objections raised under points 6 and 7 above do not apply to claim 1 of the second auxiliary request.

11. However, **neither the claims nor the description define the decision tables being considered.**

11.1 There are merely a few examples (see paragraph 50) defining how the values in the input fields determine the value of the result. It can be deduced from the description that every column in the decision tables of figures 2 and 5 corresponds to a "variable" and that every row in the decision tables defines the result as having a particular value if all variables have the values indicated in the corresponding fields (see e.g. page 13, last 4 lines). However, **the general form of decision tables and which "sets of rules" they define are not expressly and exhaustively defined in the application.**

11.2 The entries in the decision tables are referred to as "values" throughout the description, although it is disclosed that "values" may also be ranges (e.g. "1..100"), "comparisons" or "determination[s]". The board therefore considers that **the skilled person would understand that the "values" in the decision tables represent "conditions" on the fields.**

11.3 Nonetheless, the **claim language is inconsistent in this regard, and thus unclear, as it specifies "values being alphanumeric or Boolean values and including ranges" but only one form of condition, namely whether an input field "is equal to the associated corresponding value"** (see claim 1, page 2, line 17).

11.4 The appellant argued that the term decision table was common in the art and that, hence, their general form and what rules they represented were clear. This was clear, inter alia, from the prior-art documents cited in the search report. The appellant further argued that linguistic impreciseness and ambiguities in this respect were immaterial for the claims because the claimed method would work in the same manner regardless.

11.5 The board disagrees with the appellant at least on point 11.3 above. Otherwise, the board tentatively (and to the appellant's benefit) accepts the appellant's perspective.

12. As regards the first table, claim 1 refers to "a maximum number of possible values for each of the input fields" and states that a row "is generated for each of the possible values for each of the input fields".

12.1 In the board's view, the skilled person would understand the "possible values" of an input field to refer to all values an input field could possibly take. For instance, field 3 might represent a variable with possible integer values between 0 and 1000 (even though only ranges "1..100" and ">100" may be relevant for the "business decision" to be taken). If, in this situation, each value was "possible", the "maximum number of possible values" for field 3 would be 1001.

12.2 The board notes that **this interpretation is in conflict with figure 3A and concludes that claim 1 is in conflict with the application as a whole and thus unclear.**

12.3 The appellant argued (see letter of 31 August 2017, page 8, penultimate paragraph) that the "possible values" rather referred to the different values occurring in the decision table for a particular field (for instance, in table 2, there are two possible "values" for field 1: "=A" and "=B") and that the term "maximum number" was redundant ("pleonastic"). The appellant also argued that the skilled person would dismiss the interpretation proposed by the board as unreasonable: for instance, according to that interpretation, the first table would have to have an infinite number of rows for a real-valued field, which was impossible to implement.

12.4 **The board agrees that the skilled person studying figure 3A would probably be able to deduce from the application as a whole that the first table was meant to contain what the appellant stated it did.**

12.5 **The board does not agree, however, that this makes the claim clear.** It appreciates that claim 1 refers by way of reference numbers to the first table depicted in figure 3B. According to Rule 43(7) EPC, however, such reference numbers shall not be construed as limiting the

claim. The board disagrees with the appellant that its interpretation proposed under point 12.1 was obviously incorrect. Firstly, the claims (or the description) do not specify real-valued fields, and secondly, computers cannot represent truly infinite ranges of numbers anyway, be it natural numbers, integers or reals. All such mathematically infinite ranges are approximated by finite ranges in the computer (e.g. finitely many floating point numbers are used instead of infinitely many reals). In summary, no reason is apparent to the board why the skilled person should have to interpret a claimed phrase contrary to its literal meaning.

13. Claim 1 specifies that the second table contains "one or more unique value IDs", "each" of them "being a representative value for each particular cell of the decision table not found previously in the decision table".

13.1 The board regards this sentence as being grammatically unclear. Moreover, the phrase refers to some temporal order ("found previously") which is not defined earlier in the claim. The description contains the same sentence (paragraph 67, page 17, lines 8-12) without any context that would make it clearer.

13.2 Claim 1 further specifies that the second table is generated not only from the decision table but also "from the first table". In what claim 1 then specifies about the second table, no reference is made to the first table at all. The board concludes that claim 1 leaves open how the second table is generated "from the first table".

13.3 The board considers that both deficiencies render claim 1 unclear.

14. The appellant argues that the skilled person would understand from the application as a whole what the second table contained and how it was computed.

14.1 The board agrees that the skilled person would probably be able to understand the structure of the table depicted in figure 3B - even though the application is very difficult to read and the skilled person has to invest substantially more effort than usual to come to that understanding. He would, for instance, notice that the indices in columns 330 and 335 correspond to a left-to-right, top-to-bottom traversal of the decision table, and he would probably also understand the manner in which the indices in column 340 mapped reoccurring "values" in the decision table to a single "value ID".

14.2 In the board's judgment, however, this is insufficient to make clear the definition of the second table in claim 1 (see also point 12.5).

15. Moreover, the board was unable to find (on its own or with the appellant's help) any disclosure in the application that would explain how the second table was meant to be generated from the first.

15.1 The appellant argued that this omission from the application was not detrimental to the clarity of claim 1, since the skilled person would notice that the first table contained relevant information and would find ways to access this information when generating the second table.

15.2 Even if true, however, this would be insufficient to overcome the clarity objection. The board takes the appellant's argument to be that claim 1, in leaving open how the second table

was generated from the first one, is not unclear but merely broad. **Noting however that the description does not describe in detail at least one way of carrying out this particular feature of the invention, the board considers that it is not, in its full breadth, supported by the application.**

15.3 In summary, the board concludes that the step of generating the "second table [...] from the first table" in claim 1 does not comply with Article 84 EPC.

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## T 0575/15 (Process control configuration/WONDERWARE) of 2.10.2017

European Case Law Identifier: ECLI:EP:BA:2017:T057515.20171002

### **Supervisory process control and manufacturing information system application having a layered architecture**

#### **Inventive step (no)**

Application number: 10186143.3

IPC class: G06F 9/44, G06F 9/445

Applicant name: Wonderware Corporation

Cited decisions: T 0049/99, T 1630/11, T 1205/12, T 0820/14

Board: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t150575eu1.pdf>

#### The invention

12. The application relates to the configuration and reconfiguration - and eventual "deployment" - of software for computerised industrial process control systems. The industrial processes of interest are only mentioned briefly and in little detail.

12.1 It is explained that the process control devices and processes may change during operation and require changes to the process control systems. In such situations, the configuration and reconfiguration of the system must be quick so as to limit disruption to the system as a whole (see page 2, lines 10 to 15).

12.2 Therefore a "supervisory process control and manufacturing information system application architecture" is proposed that is said to "offer[] users the freedom to re-architect" supervisory process control "applications, with minimal impact on the existing, underlying, process control system engineering" (see page 5, lines 19 to 23). The proposed architecture comprises three layers, an "application" layer, an "engine" layer and a "platform" layer (see page 6, lines 1-16). An application layer comprises "application objects" which are free of "constraints associated with the computing system hardware" (see page 6, lines 1-6) and

which are "hosted by an engine object" (lines 6-7), engine objects in turn being "hosted by a platform object" (lines 7-8). The platform object "corresponds" to a "physical computing system (including an operating system) upon which application and engine objects execute" (lines 9-11). The concept of an "area" is introduced as a logical group of application objects which must be deployed on the same application engine; which one is up to the developer (page 6, lines 26-32).

12.3 It is further disclosed that the system may rely on several "models": A "security model" stated to be independent of the employed hardware (page 7, lines 1-8), an "application model" introduced as a "logical build of the plant relative to the physical areas of the plant ..." which is configured before deployment (page 7, lines 17-22), and a "deployment model" comprising a "system view", i.e. reflecting the physical components of the system on which the application is to run (paragraph bridging pages 7 and 8). A variety of further "views" is also provided, including a "model view", a "deployment view" and a "derivation view" (see page 3, line 25, to page 4, line 5, page 23, lines 20-23, and page 24, lines 21-27).

The sole independent claim 1 of the main request reads as follows:

"A configuration facility for specifying a deployment model for supervisory process control and manufacturing information applications for associating application objects (105, 107) to particular physical computing devices (100, 102) and providing a view of the distribution of the objects (105, 107) upon the physical computing devices (100, 102), the configuration facility comprising:

platform definitions (204) specifying one or more physical computing device types (100, 102);

engine definitions (206) specifying engines that execute upon the physical computing systems (100, 102) and thereby define types of services supported by the physical computing devices (100, 102);

area definitions specifying areas comprising logical groupings of application objects (210);

a set of hierarchical relationships specifying assignments of the engines (206) to particular ones of the physical computing systems (100, 102), and assignments of the areas to particular ones of the engines (206); and

a deployment view generator depicting, in accordance with the set of hierarchical relationships, a hierarchy of physical computing devices (100, 102), engines (206), and areas."

Inventive step, Article 56 EPC

16. The central question to be decided in the present case is whether the claimed subject-matter has any technical effect and, if it does, what technical problem it solves.

17. In the board's understanding, the facility or system according to the main request and auxiliary requests 1 and 2 is one of producing and viewing a model comprising several kinds of "objects" which are meant for eventual deployment to and execution on a "physical computing system". **No actual deployment or execution is claimed or implied. Therefore, as already stated, the board interprets the claimed system as a programming system for developing and viewing the "configuration" of the physical computing system or process control network in question.**

17.1 In the board's view, the **activities of programming or modelling do not per se make a technical contribution** to the art, and simplifying the mental effort of programming is not a technical problem (see e.g. T 1630/11 and the decisions cited in point 6; see esp. T 49/99 as referred to in the grounds of appeal).

17.2 Intrinsic to the development of a program or software-based model is that the data representing the program or the model are stored on a physical device, typically some sort of computer memory. This also applies to the claimed invention (see also the grounds of appeal, paragraph bridging pages 12 and 13). However, **storing a model in a file or in a database does not confer technical character on the model itself or help to clarify what technical effect the model has. It is thus insufficient to establish an inventive step.**

17.3 The description states that the invention "offers users the freedom to re-architect [...] applications with minimal impact on the existing, underlying, process control system engineering". **The board is not convinced that the claimed facility or system, as it stands, can be said to have any impact on the underlying process control system, as long as the associations, definitions, specifications and views are not deployed or used for deployment.** In contrast to the appellant's assertion, the **board does not consider the claimed invention to "influence[] directly a physical system"** (see page 13, paragraph 3).

17.4 This would remain the case even if it was assumed, for the sake of argument, that a deployment took place, because, in the board's understanding, **the invention is concerned with simplifying the process of configuring a system without however changing the configuration results themselves.**

17.5 **The appellant argues that the information presented by the various views according to the claimed invention should be considered technical because it relates to the "technical state of a machine" or an "application executed on a computer"** (see grounds of appeal, page 13, paragraph 2). As regards the former, the **board takes the view that the generated model may be construed as prescriptive rather than descriptive, i.e. the information being displayed might relate to how the system should be (or: should be configured) rather than how it actually looks, and thus does not necessarily relate to the technical state of a machine.** The board also disputes that an invention has to be considered to be technical merely because it "relates", in some unspecified way, "to some technical application executed on a computer", and also that such a sweeping statement can be derived from the board of appeal decisions cited by the appellant (see the grounds of appeal, page 13).

17.6 The board thus concludes that claim 1 of the main request and of auxiliary requests 1 and 2 lacks inventive step, Article 56 EPC, because it does not solve a technical problem.

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## T 2418/12 (Related-term suggestion/MICROSOFT TECHNOLOGY LICENSING) of 14.7.2017

European Case Law Identifier: ECLI:EP:BA:2017:T241812.20170714

### **Related term suggestion for multi-sense queries**

#### **Inventive step - all requests (no)**

Application number: 05102959.3

IPC class: G06F 17/30

Applicant name: Microsoft Technology Licensing, LLC

Cited decisions: T 0154/04, T 1784/06, T 1928/06, T 1358/09, T 0042/10, T 2230/10,  
T 1370/11, 1734/11, T 2439/11, T 1742/12

Board: 3.5.07

<http://www.epo.org/law-practice/case-law-appeals/pdf/t122418eu1.pdf>

#### 2. The invention

2.1 The background section of the description highlights the importance of identifying popular keywords relevant to a website, in particular in the context of search engine result optimisation (paragraphs [0003] and [0004] of the description of the application as filed). To allow relevant keywords to be identified without human intervention, the application proposes an automated method for "related term suggestion".

2.2 This method starts with a set of "historical query terms" obtained from query logs. Given a "bid term", it produces one or more ordered lists of query terms related to the bid term (paragraphs [0006], [0039] and [0040]; Figure 2). The terms in each list are meant to relate to a particular "sense" of the bid term, corresponding to the context in which the bid term is used (paragraphs [0015] and [0032]). One example is given in Table 1 on page 8 of the application as filed, which shows that the "mail" bid term results in one list of query terms related to the context "online e-mail" and another list of query terms related to the context "traditional mail" (paragraphs [0021] to [0023]).

2.3 The method first divides the historical query terms into a set of query terms having a high frequency of occurrence (FOO) in the historical query logs and a set of query terms having a low FOO. A historical query term is a "high FOO" query term if the number of times it occurs is greater than or equal to a configurable threshold value (paragraph [0025]). The high-FOO query terms are then assigned to "term clusters" on the basis of their mutual "similarities" (paragraph [0040]; paragraphs [0030] and [0031]).

2.4 The "similarity" of two high-FOO query terms is determined as follows. For each query term, a "term vector" is constructed from a textual search result associated with the query term (paragraphs [0025] to [0028]). A term vector is a vector whose dimensions correspond to keywords occurring in the search result. The value of a dimension is the "term frequency-

inverse document frequency" (tf-idf) score of the corresponding keyword, which is a measure of the FOO of the keyword in the search result (paragraph [0029]). The similarity between two query terms is then determined by calculating the inner product of their (normalised) term vectors, which is equivalent to calculating the cosine of the angle between the two vectors (cf. paragraph [0030]). Effectively, this gives a measure of the textual similarity of the corresponding search results.

2.5 According to paragraph [0031], the generation of "term clusters" of "similar" query terms is performed by means of the known "density-based clustering algorithm" (DBSCAN).

2.6 As explained in paragraph [0032], after generation of the term clusters, a bid term received from an "entity" (such as a user) is "matched" with the query terms in the various term clusters. This matching operation involves a string-based comparison and looks for an exact or partial match. For each term cluster containing a query term that matches the bid term, a "term list" is returned consisting of the query terms in the term cluster ordered "by a combination of FOO and confidence value", where the confidence value is based on the "similarity" between the query term and the bid term. In case of matches with multiple term clusters, the returned term lists are ordered by term cluster size (paragraph [0033]).

2.7 The procedure may be extended to low-FOO query terms if no match is found between the received bid term and a high-FOO query term (paragraphs [0040] and [0041]; Figures 2 and 3). In this case, search results and corresponding term vectors are also generated for the low-FOO query terms, and expanded term clusters are constructed by means of a "classifier" trained on the term clusters generated from the high-FOO query terms (paragraphs [0034] to [0037]). The bid term is then matched against the expanded term clusters (paragraph [0038]).

### 3. Main request - inventive step

3.1 Claim 1 defines **a computer-implemented method for "related term suggestion" as described in points 2.2 to 2.6 above.**

Apart from the statement that the method is "computer-implemented", the only further reference to technical means occurs in the feature "each vector being generated from search results associated with the term which is a term of a set of high FOO historical query terms previously submitted to a search engine". The Board considers, however, that **the words "previously submitted" do not express the submission of query terms to a search engine as a step of the claimed method but - in so far as they limit the claimed subject-matter - only characterise the informational content of the query terms and, arguably, the search results.**

**The remaining features of claim 1 express the algorithm underlying the computer-implemented method in terms of linguistic and statistical functional features. Such features, which "as such" fall under the exclusions of Article 52(2) and (3) EPC, provide a technical contribution only 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).

3.2 **The algorithm underlying claim 1 serves the overall purpose of suggesting query terms that are semantically related to the various "senses" of a particular input term.**

**This is not a technical problem, for whether terms are "related" to each other is a cognitive or linguistic matter and not a technical issue** (cf. decisions T 1358/09 of 21 November 2014, reasons 5.2; T 2230/10 of 3 July 2015, reasons 3.9; and T 2439/11 of 11 November 2016, reasons 4.5).

Nevertheless, a technical interaction may be present if technical considerations motivating the algorithm's design can be identified that make the algorithm particularly suitable for being performed on a computer and that "go beyond merely finding a computer algorithm to carry out some procedure" (cf. decision T 1358/09, reasons 5.5).

3.3 In the statement of grounds of appeal, the appellant submitted that the claimed ordering of terms within a suggested-term list based on "confidence value" involved such technical considerations, because it re-used the similarity measure that had been calculated in a previous method step. Those technical considerations allowed an algorithm for related-term suggestion with reduced computational effort to be implemented.

In the Board's view, however, **the consideration that an intermediate result produced by an earlier algorithmic step may be re-used in a later step is an algorithmic rather than a technical consideration, as it does not require considerations about the internal functioning of a computer**. This is in line with the case law of the boards of appeal, which generally holds that algorithmic efficiency is not a technical effect (cf. decisions T 1784/06 of 21 September 2012, reasons 3.1.2; T 42/10 of 28 February 2013, reasons 2.11; T 1370/11 of 11 March 2016, reasons 10 to 10.5).

3.4 At the oral proceedings, the appellant argued that the claimed use of a "configurable threshold value" was a technical aspect, because it made the method more flexible and allowed its use in more circumstances.

The Board considers the **use of a threshold value for distinguishing between high-FOO and low-FOO query terms to be a purely algorithmic choice and therefore not a technical aspect**. Making this value "configurable" arguably is technical, at least to the extent that it implies the presence of an input mechanism allowing the user to configure the value. But parameter configuration and its advantages are well known in the art.

3.5 The appellant also argued that finding related terms by "matching" the bid term with the query terms in the term cluster was technical, because matching strings was computationally efficient.

The claim is silent, however, on the technical implementation of the matching operation. **The argument therefore again relies on the claimed method being algorithmically efficient, which is not a technical effect**.

3.6 The Board therefore concludes that **the algorithm underlying the computer-implemented method of claim 1 provides no technical contribution**. Implementing the algorithm on a computer, including a facility for configuring the threshold value, is a routine exercise for the skilled person; in fact, the claim merely recites the term "computer-implemented", and the description contains no technical details of the software implementation.

3.7 As explained in point 3.1 above, the Board does not interpret the expression "a set of high FOO query terms previously submitted to a search engine" as a step of the claimed method. In any event, once the non-technical decision has been made to base the related-term suggestion algorithm on the textual content of search results associated with historical query terms, it is obvious to obtain such search results by submitting the terms to a search engine.

3.8 The subject-matter of claim 1 of the main request therefore lacks inventive step over a notorious general-purpose computer (Article 56 EPC).

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## T 1046/15 (Processing web-page gestures/APPLE) of 22.8.2017

European Case Law Identifier: ECLI:EP:BA:2017:T104615.20170822

### **Touch event model for web pages**

#### **Inventive step - (no)**

Application number: 12188748.3

IPC class: G06F 3/048, G06F 17/22, G06F 17/30

Applicant name: Apple Inc.

Board: 3.5.05

<http://www.epo.org/law-practice/case-law-appeals/pdf/t151046eu1.pdf>

Claim 1 of the main request comprises the following features:

A method for processing touches, the method comprising the steps of:

- (a) receiving simultaneous touch input signals associated with one or more regions of a web page displayed on a touch-sensitive device,
- (b) wherein each region is associated with a respective node in a document object model,
- (c) wherein the web page includes code for processing one or more gesture events;
- (d) determining separate touch events associated with the one or more regions of the web page based on the touch input signals;
- (e) determining a gesture event by combining the separate touch events associated with the one or more regions of the web page,
- (f) wherein the gesture event includes one or more of scale and rotation information;
- (g) sending the gesture event to the web page for processing the gesture event by executing the code included in the web page.

## 1.1 Novelty and inventive step (Articles 54 and 56 EPC)

1.1.1 The board considers document D1 to be a suitable starting point for assessing novelty and inventive step, because it is concerned with detecting and processing touch and gesture events associated with web pages on a touch-screen device (see e.g. paragraphs [0068] and [0127] in conjunction with Fig. 26).

1.1.8 As to feature (g), D1 mentions the use of active objects within the respective web pages (see paragraph [0068]). The board holds that the use of "active objects" in certain items of a web page in turn means that they must include executable codes or programs. However, it is not directly and unambiguously derivable from D1 that gesture events are indeed processed by those active objects included in the web page, i.e. by the web page itself.

1.1.9 In view of the above, the board concludes that the present **claim 1 is distinguished from D1 by feature (g), namely in that the determined gesture event is sent to the web page for processing the gesture event by executing the code included in the web page.** Accordingly, the subject-matter of present claim 1 is found to be novel over D1 (Article 54 EPC).

1.1.10 As to the **resulting technical effect of distinguishing feature (g)**, the board holds that directly sending the gesture event, which has been already detected by the device's (operating) software, to the web page in fact **shifts the task of gesture interpretation from the developer of the device's operating system to the respective web-page developer**, as is implied in the present application itself (see paragraph [0024], last sentence: "This way, a developer has access to a gesture event ... which provides the developer with more flexibility when developing a web application"), rather than improving the quality and consistency of gesture detection in itself (see statement setting out the grounds of appeal, page 8, last paragraph). Hence, **the objective technical problem may be framed as "how to relieve the web-page developer's burden of processing gesture events"**, as was put forward by the appellant at the oral proceedings before the board.

1.1.11 Concerning the inventive step as regards feature (g), the appellant argued that D1 was silent about where gesture events were in fact processed. However, the board believes that **the question where the determined gesture events are eventually to be processed (e.g. at the client's operating system or at the web page itself) is a matter of choice between equally likely implementation alternatives from which the skilled person would choose, depending on practical considerations such as implementation complexity, preferences or market needs, etc.** If it is generally preferred that, for whatever reasons, the application developer is to be provided with more flexibility and thus a lighter burden in processing or interpreting the obtained gesture events, the skilled person in the field of touch-screen devices would certainly do so, without encountering any practical difficulties in simply forwarding the resulting gesture events to the relevant web page according to distinguishing feature (g).

1.1.12 Hence, the subject-matter of present claim 1 does not involve an inventive step, having regard to D1 and the skilled person's common general knowledge.

1.2 In conclusion, the main request is not allowable under Article 56 EPC.

T 1408/09 (Group identifier / SQUARE ENIX) of 7.9.2017

European Case Law Identifier: ECLI:EP:BA:2017:T140809.20170907

## **System for exchanging mail among members belonging to group**

**Inventive step - uniquely identifying a group with a uid and time (no Inventive step - obvious from UUID)**

**Inventive step - need for pointer to problem in closest prior art (no)**

Application number: 04009036.7

IPC class: G06F 17/60

Applicant name: Kabushiki Kaisha Square Enix (also trading as Square Enix Co., Ltd.)

Board: 3.5.01

Catchwords:

**According to the problem solution approach, the objective technical problem is formulated based on the technical effect of the difference between the claimed subject-matter and the starting point in the prior art. It is not a requirement for obviousness that the starting point address this problem. If it does, that could make the solution all the more obvious. If, on the other hand, there is a pointer away from the invention, that might be an indication in favour of inventive step.**

<http://www.epo.org/law-practice/case-law-appeals/pdf/t091408eu1.pdf>

### 1. The invention

The invention concerns group e-mail. The groups are managed by the members' terminals, without involving a server.

To this end, the terminals use a group identifier for identifying the groups. The group identifier is generated by combining user information of the terminal of the member forming the group and the time of forming the group. Since the same user cannot create more than one group at exactly the same time, the group identifier is unique throughout the system.

### 2. Inventive step

2.1 D1 discloses a method of establishing communication groups in a serverless system. It is common ground that the **subject-matter of claim 1 differs from D1 by the features in the characterising portion, namely the group identifier ("group information") generated by combining user information of the user generating the group and the time of forming the group.** The question is whether this would have been obvious to the skilled person.

2.2 It is also **common ground that the group identifier solves the problem of providing a unique identifier for identifying the groups, without using a server.** The appellant argued that, since D1 did not address the problem of uniqueness of identifiers, the skilled person would not have been motivated to search for how to generate one. There was no pointer in D1 which would have prompted the skilled person in this direction.

2.3 The Board does not find the appellant's arguments convincing. **According to the problem solution approach, the objective technical problem is formulated based on the technical effect of the difference between the claimed subject-matter and the starting point in the prior art. It is not a requirement for obviousness that the starting point address this problem.** If it does, that could make the solution all the more obvious. **If, on the other hand, there is a pointer away from the invention, that might be an indication in favour of inventive step.**

2.4 The **Board does not see any teaching away from the use of unique identifiers in D1.** On the contrary, there must be a way to identify the communication groups. That the identification should be unique is self-evident; there would not be much point otherwise. Therefore, the skilled person implementing the communication system in D1 would have had to choose an appropriate group identifier.

2.5 The Examining Division considered this choice to be an obvious one. Since the user was already uniquely identified in the system of D1, and since it was impossible for a single user to create more than one group at exactly the same time, the combination of a user ID and the time of forming the group would have been an obvious alternative. Another possibility would have been to combine the user ID with a sequence number.

2.6 In the Board's view, **this reasoning involves a degree of hindsight. Just because a solution can be justified by some circumstances, it does not necessarily mean that those circumstances would have led the skilled person to that solution.** Furthermore, **the existence of an alternative solution does not render the particular claimed solution obvious.** Therefore, the Board is of the opinion that **some evidence is required** to show that the skilled person would have considered a group identifier that is based on a combination of user information and the time of forming the group.

2.7 Document D7, cited by the Board, describes a unique identifier called "universal unique identifier" (UUID), which is generated without involving a server. The UUID is based on user information (a node ID, or a POSIX user ID) and a timestamp. At the oral proceedings, the appellant no longer disputed that D7 was prior art, and the Board is satisfied that D7 was available on the Internet well before the priority date.

2.8 The appellant argued that, since the UUID in D7 was disclosed in the context of distributed computing, the skilled person would not have considered it for improving a system related to the management of mobile communication groups.

2.9 The Board disagrees. The **skilled person, faced with the problem of providing a unique identifier for mobile communication groups, would have looked for solutions in the wider field of networked systems.** D7 is a general disclosure of a unique identifier that can be used for multiple purposes to reliably identify objects across a network. Although it has not been established that the particular format described in D7 was part of the skilled person's general knowledge at the priority date, the Board considers that the concept of UUIDs as such was widely known at the date of the invention. Thus, the skilled person would have looked in the direction of UUIDs, and he would have considered the teachings in D7.

2.10 The appellant furthermore argued that, even if the skilled person had combined the teachings of D1 and D7, he would nevertheless not have arrived at the invention as defined in claim 1. The appellant considered that the "UTC-based timestamp" in D7 was different from the time of forming the group as measured by an "internal timer" in claim 1, because an internal timer operated without reference to any external clock.

The appellant's arguments do not persuade the Board. The application does not provide any definition of the "internal timer" other than that it provides a date and time (paragraph [0062] of the published application). In the Board's view, this does not exclude the use of a UTC-synchronised clock.

2.11 For these reasons, the Board concludes that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC).

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## T 0797/11 (Optimierung von Prozessabläufen/VOLKSWAGEN) of 23.5.2017

European Case Law Identifier: ECLI:EP:BA:2017:T079711.20170523

### **VERFAHREN ZUR PLANUNG VON PROZESSABLÄUFEN**

**Erfinderische Tätigkeit - Mischung technischer und nichttechnischer Merkmale**

**Erfinderische Tätigkeit - Planung von Prozessabläufen (nein**

**Erfinderische Tätigkeit - betriebswirtschaftliches Optimierungsproblem)**

**Erfinderische Tätigkeit - Prozessablauf zugänglich zu machen (nein**

**Erfinderische Tätigkeit - allgemeines Fachwissen)**

Anmeldenummer: 02777136.9

IPC-Klasse: G06F 17/60

Name des Anmelders: Volkswagen Aktiengesellschaft

Angeführte Entscheidungen: T 1194/97, T 0641/00, T 0619/02, T 0930/05

Kammer: 3.5.01

<http://www.epo.org/law-practice/case-law-appeals/pdf/t110797du1.pdf>

Der unabhängige Anspruch 1 gemäß dem Hauptantrag lautet:

1. Verfahren zur Planung von Prozessabläufen,

a) bei dem in zumindest einer Datenbank (4) eine Vielzahl verschiedener Prozessdaten (2) gespeichert werden,

b) bei dem die gespeicherten Prozessdaten (2) über ein Datennetz von zumindest einem Arbeitsplatzrechner abgerufen werden,

- c) bei dem gespeicherte Prozessdaten mit Hilfe des Arbeitsplatzrechners miteinander kombinierbar und vergleichbar gemacht werden,
- d) bei dem die gespeicherten Prozessdaten (2) jeweils Prozessgruppen (2a, 2b, 2c, 2d, 2e) zugeordnet werden,
- e) bei dem die gespeicherten Prozessdaten über ein Datennetz (4) an eine Auswerteeinheit (6) übermittelt werden,
- f) bei dem die Auswerteeinheit (6) in einem iterativen Prozess einen Vergleich aller möglichen Kombinationen von Prozessdaten (2) aus den einzelnen Prozessgruppen (2a, 2b, 2c, 2d, 2e) durchführt und auf diese Weise einen optimalen Prozessablauf ermittelt,
- g) bei dem der optimale Prozessablauf in der Datenbank (4) gespeichert wird und
- h) bei dem der optimale Prozessablauf über das Datennetz (5) von einer Vielzahl von räumlich getrennten Arbeitsplatzrechner [sic] abgerufen wird und als Basis für Arbeitsabläufe auf den Arbeitsplatzrechnern angezeigt wird.

#### Erfinderische Tätigkeit - Artikel 56 EPÜ

2. Die Kammer stimmt der angefochtenen Entscheidung zu, dass keine erfinderische Tätigkeit vorliegt. Insbesondere sieht die Kammer keine fehlerhafte Anwendung des Prüfungsansatzes nach T 641/00 (COMVIK). Eine von der Beschwerdeführerin bemängelte Zergliederung der Merkmale des beanspruchten Verfahrens vermag die Kammer nicht zu erkennen. Auch bleibt die Beschwerdeführerin detaillierte Argumente im Hinblick auf ein geltend gemachtes Zusammenspiel der Umsetzung der Verfahrensschritte auf Arbeitsplatzrechnern schuldig. Solche kombinatorischen technischen Effekte vermag die Kammer anhand der Offenbarung in den Anmeldungsunterlagen auch nicht zu erkennen.

3. Nach Ansicht der Kammer handelt es sich beim Gattungsbegriff des unabhängigen Anspruchs 1, einem **Verfahren zur Planung von Prozessabläufen, um eine Aufgabenstellung aus dem betriebswirtschaftlichen Bereich**. Die Bereitstellung eines solchen Verfahrens wird daher **nicht als technische Aufgabe angesehen**, sondern im Rahmen einer reinen Planung als eine **administrative Maßnahme**. Dies gilt insbesondere, weil anspruchsgemäß **keine spezifischen technischen Problemstellungen in Verbindung mit Fertigungsabläufen oder Maschinensteuerung erkennbar** sind. Vielmehr handelt es sich um ein **betriebswirtschaftliches Optimierungsproblem**. Unter Verwendung bekannter Optimierungsalgorithmen und Optimierungsansätze soll vor allem die Datenmenge beherrscht werden. Hierzu wird vorgeschlagen, sich die Möglichkeiten der Computertechnik zu Nutze zu machen. Da die Daten für eine Vielzahl verteilter Orte benötigt werden bzw. daher stammen, kommt ein vernetztes Rechnersystem zum Einsatz.

3.1 Die Kammer stimmt der angefochtenen Entscheidung zu, dass die Unterscheidungsmerkmale a), b), c), e), g) und h) von Anspruch 1 zwar technischen Charakter aufweisen, jedoch **nicht über den naheliegenden Einsatz eines fachnotorischen vernetzten Rechnersystems hinausgehen**.

3.2 Merkmal c) spezifiziert, dass Prozessdaten miteinander kombinierbar und vergleichbar gemacht werden. Nähere Details dazu wie kombiniert oder verglichen wird und wie die Prozessdaten genau aussehen, ist weder beansprucht noch offenbart. ... Weder ist eine technische Arbeitsweise der Auswerteeinheit in Anspruch 1 näher spezifiziert, noch der Inhalt der Prozessdaten.

Merkmal c) beansprucht lediglich auf einer Metaebene, dass Prozessdaten miteinander kombinierbar und vergleichbar gemacht werden. Die Beschwerdeführerin hat in der Beschwerdebeurteilung auf die Entscheidung T 930/05 verwiesen. Diese Entscheidung bringt unter anderem zum Ausdruck (siehe z.B. Punkt 4.5 der Entscheidungsgründe), dass **die bloße Möglichkeit einer Verwendung technischer Mittel nicht ausreicht**. Wenn der beanspruchte Gegenstand zwar mögliche technische Ausführungsformen umfasst, daneben jedoch **auch als nicht-technisch im Sinne von Artikel 52(2) und (3) EPÜ anzusehende Implementierungen denkbar sind, so erlaubt ein Teilmerkmal auch eine nicht-technische Auslegung und wird nicht als technisches Merkmal angesehen** (so auch T 619/02, Punkt 2.2 der Entscheidungsgründe und Leitsatz 2). Genau dies ist bei Anspruch 1 mit den beanspruchten Prozessdaten der Fall, denn diese können z.B. auch rein monetäre Größen darstellen. Solche abstrakten Prozessdaten, wie in Anspruch 1 spezifiziert, besitzen daher nicht das Potenzial als funktionale Daten im Sinne der Entscheidung T 1194/97 (Philips) und können somit selbst keinen erfinderischen technischen Beitrag leisten.

Die Kammer ordnet eine **beanspruchte Datenumwandlung daher durchaus als Erfordernis des betriebswirtschaftlichen Optimierungsansatzes ein, welcher als administratives Konzept dem nicht-technischen Bereich des Anspruchsgegenstands zuzuordnen ist** und daher bei der Prüfung auf erfinderische Tätigkeit nicht herangezogen wird.

Die Kammer ist daher der Auffassung, wie auch in T 930/05 angeführt (vgl. Punkt 4.6 der Entscheidungsgründe), dass mit der beanspruchten Erfindung gemäß Anspruch 1 eine Metaebene beschränkt wird, die eher eine Sprache zur Beschreibung von Prozessabläufen als eine Beschreibung prozessimplementierender technischer Mittel zum Gegenstand hat. Dabei handelt es sich um eine vorgelagerte abstrakte Definition oder Modellierung von Informationen, die zwar eine regelgebundene Systemanalyse eines (unbestimmten) Prozesses einschließt, aber nicht auf die Lösung eines bestimmten technischen Problems gerichtet ist.

Die von der Beschwerdeführerin angeführten **technischen Überlegungen bei der Implementierung dieser Verfahrensschritte, die über das notorische Fachwissen hinausgehen (vgl. Seite 4, erster Absatz der Beschwerdebeurteilung), wurden nicht näher erläutert**. Solche sind in den Anmeldungsunterlagen auch nicht offenbart.

3.3 Hinsichtlich des Verfahrensmerkmals d), nämlich einer Gruppierung der nicht näher spezifizierten Prozessdaten, vertritt die Kammer die Auffassung, dass dies ebenfalls Bestandteil des betriebswirtschaftlichen Optimierungsansatzes ist, welcher als **administratives Konzept dem nicht-technischen Bereich des Anspruchsgegenstands zuzuordnen ist** und daher bei der Prüfung auf erfinderische Tätigkeit nicht herangezogen wird. Es gilt hier das bereits zu Merkmal c) Gesagte entsprechend.

3.4 Das Verfahrensmerkmal f), nämlich in einem iterativen Prozess einen Vergleich aller möglichen Kombinationen Prozessdaten zur **Ermittlung eines optimalen Prozessablaufs** vorzunehmen, sieht die Kammer ebenfalls **im Bereich des betriebswirtschaftlichen Optimierungsansatzes**. Eine Ermittlung eines optimalen Prozessablaufs liegt im Bereich des Artikel 52(2)(c) EPÜ, im konkreten Fall Algorithmen zur Optimierung oder heuristische Verfahren, welche somit per se nicht zum technischen Charakter beitragen. Exemplarisch wird auf D1 verwiesen, einen Auszug aus einem betriebs-wirtschaftlichen Lexikon. Hieraus geht hervor, dass unabhängig von einer technischen Implementierung auf einem Rechner, vor dem Prioritätstag in der betriebswirtschaftlichen Prozessplanung (als Beispiele sind eine Produktions-ablaufplanung wie z.B. Reihen- und Werkstattfertigung genannt) heuristische Verfahren vor allem auch iterative Verfahren umfassten. Die Anmeldung offenbart keine technischen Details zur konkreten Ausgestaltung des iterativen Prozesses.

Doch **selbst wenn man einen solchen iterativen Prozess als zum technischen Charakter beitragend ansieht, so ist dies doch zumindest aus bekannten Optimierungs-algorithmen oder heuristischen Verfahren zur Produktions-ablaufplanung nahegelegt** (vgl. exemplarisch D1). Nähere Details zur Verwirklichung eines iterativen Ansatzes oder zu dessen Implementierung, die sich von bekannten Ansätzen abgrenzen könnten, bleibt die Anmeldung schuldig. So räumt die Beschwerdeführerin selbst ein (vgl. S. 6 der Beschwerdebegründung), dass technische Überlegungen, welche letztendlich zu einem geringeren Material- oder Energieeinsatz führen, nicht im Verfahrensmerkmal f) enthalten sind.

3.5 Die Optimierung des Prozessablaufs mit den zugehörigen Verfahrensschritten ist **so abstrakt gehalten, dass damit auch wirtschaftliche und nicht zwangsläufig technische Ausführungen umfasst werden**. Dadurch wird nach Auffassung der Kammer somit kein technischer Effekt erzielt und kein technisches Problem gelöst.

4. Anders sieht dies aus, soweit die **Problemstellung betroffen ist, den ermittelten optimalen Prozessablauf an einer Vielzahl von räumlich getrennten Orten zugänglich zu machen. Als technische Aufgabe wird daher, wie in der angefochtenen Entscheidung, die Implementierung eines solchen Konzepts zur Prozessoptimierung angesehen, durch die dies gewährleistet ist.**

4.1 Den nächstliegenden Stand der Technik stellt ein verteiltes Rechnersystem mit Clients, Server und Datenbank dar, wie es vor dem Prioritätstag fachnotorisch bekannt war. Das betriebswirtschaftliche und damit administrative Konzept wie es weiter oben dargestellt wurde, wird dabei zur Implementierung vorgegeben und leistet keinen erfinderischen technischen Beitrag.

4.2 Prozessdaten zentral zusammenzuführen (Merkmal e), Ergebnisse in einer Datenbank zu speichern (Merkmal g) und mit einer Vielzahl von räumlich getrennten Arbeitsplatzrechnern auszutauschen (Merkmal h) ist Sinn und Zweck eines jeden vernetzten Rechnersystems bzw. von Client-Server-Systemen. Diese Merkmale gehen nicht über den fachüblichen Einsatz solcher Systeme hinaus.

4.3 Die **Implementierung auf einem solchen Rechnersystem wird daher als naheliegend angesehen, da keine technischen Hürden oder unerwartete technische Effekte erkennbar sind**. Der Gegenstand von Anspruch 1 beruht daher nicht auf der erforderlichen erfinderischen Tätigkeit.

T 1635/12 (Speicherplatz-Verringerung/GIESECKE) of 11.8.2017

European Case Law Identifier: ECLI:EP:BA:2017:T163512.20170811

## **OPTIMIERUNG UND AUSFÜHRUNG EINES PROGRAMMS**

### **Erfinderische Tätigkeit - (ja)**

Anmeldenummer: 04729435.0

IPC-Klasse: G06F 9/45

Verfahrenssprache: DE

Name des Anmelders: Giesecke+Devrient Mobile Security GmbH

Kammer: 3.5.06

<http://www.epo.org/law-practice/case-law-appeals/pdf/t121635du1.pdf>

Anspruch 1 lautet wie folgt:

"1. Computerimplementiertes Verfahren zur Erzeugung eines optimierten Programms (32) aus einem ursprünglichen Programm (52), das Befehle (U<sub>x</sub>) mit Befehlscodes und Operanden aufweist, zur Verringerung des benötigten Speicherplatzes, wobei:

- das optimierte Programm (32) mindestens einen Befehlscodestrang (34) und mindestens einen Operandenstrang (36) aufweist,

- jeder Befehl (46, 48) des optimierten Programms (32) aus mindestens einem Befehlscode (OC<sub>x</sub>) im Befehls-codestrang (34) und keinem, einem oder mehreren Operanden (OD<sub>x.y</sub>) im Operandenstrang (36) gebildet wird,

- bei der Optimierung zumindest manche Befehls-gruppen (54, 56) des ursprünglichen Programms (52) in je einen Makrobefehl (50) des optimierten Programms (32) umgesetzt werden, wobei in dem Makrobefehl (50) die in der Befehlsgruppe (54, 56) enthaltenen Befehls-codes codiert sind,

- die Operanden (OD1.1, OD1.2) des Makrobefehls (OC1) den in der Befehls-gruppe (54, 56) enthaltenen Operanden entsprechen und in dem Operandenstrang (36) gespeichert werden, und

- zur Angabe eines auszuführenden Befehlscodes (OC<sub>x</sub>) ein erster Befehlszähler (42) und zur Angabe eines zugehörigen Operanden (OD<sub>x.y</sub>) ein zweiter Befehlszähler (44) bereitgestellt werden."

### 1. Zusammenfassung der Erfindung

Die Anmeldung betrifft die Erzeugung eines speicherplatz-reduzierten Programmcodes aus einem ursprünglichen Programmcode auf der Ebene von Maschinensprache oder Bytecode (siehe Beschreibung Seite 1, erster Absatz). Der optimierte Programmcode wird in einem

besonderen Format abgelegt, das aus mindestens einem Befehlscodestrang und mindestens einem (separaten) Operandenstrang besteht. Für die Optimierung werden gleiche Folgen von Befehlscodes an verschiedenen Stellen im ursprünglichen Programm zu Makrobefehlen zusammengefasst und durch diese im Befehlscodestrang ersetzt. Dabei erlaubt die Aufteilung in Befehlscode- und Operandenstränge in der Erfindung, dass Befehlscode-Folgen gänzlich unabhängig von den jeweils zugehörigen Operanden zusammengefasst werden können.

### 3. Erfinderische Tätigkeit

3.1 Laut der angefochtenen Entscheidung (Seite 2) ist der damalige (ursprünglich eingereichte) Anspruch 1 nicht erfinderisch über D1 in Kombination mit D2. Der Unterschied mit D1 sei die Aufteilung des optimierten Programms in (mindestens) einen separaten Befehlscodestrang und einen Operandenstrang (Seite 2, erster nicht eingerückter Absatz). Die damit zu lösende technische Aufgabe sei die Verbesserung der Komprimierung des Verfahrens von D1 (Seite 3, Absatz 2). D2 offenbare die Aufteilung des Programms in Stränge, wobei dieselben Vorteile wie in der Anmeldung erzielt würden. Daher würde der Fachmann dieses Merkmal aus D2 in das Verfahren von D1 einbauen, um die Aufgabe zu lösen (Absatz 3).

3.2 Die Kammer stimmt mit der Entscheidung überein, dass die **Aufteilung des optimierten Programms in Stränge** der Unterschied zu D1 und die **technische Aufgabe die verbesserte Komprimierung des Programms ist**.

...

3.5 Es findet eine bessere Kompression als in D1 statt, da Befehlsfolgen gänzlich ohne Berücksichtigung der Operanden zusammengefasst werden. Dazu vergleiche man die Figur 3 der Anmeldung mit der Figur 4 von D1. In Figur 3 wird die Befehlsfolge "ILOAD ILOAD IADD" zum Makrobefehl "MAC1" zusammengefasst. Die Operandenfolgen "4 6" und "10 12" werden separat im Operandenstrang gespeichert.

...

3.8 Was die Speicherplatzverringerung von D2 durch Vermeidung von Indices und Null-Spaces bei der Ausrichtung (alignment) angeht, so bleibt diese bei der Kombination von D1 mit D2 erhalten. Das bedeutet, dass insgesamt eine **Verringerung des Speicherverbrauchs bewirkt wird, die größer ist als die Summe der Reduktionen von D1 und D2**. D.h. es liegt ein **Synergieeffekt vor, der nicht auf einer bloßen Juxtaposition der Merkmale aus D1 und D2 beruht**.

3.9 Daher ist das Verfahren von Anspruch 1 erfinderisch über die Kombination von D1 und D2.