

This document includes some recent decisions of the EPO in 2022 with regards to software related inventions and shows relevant extracts from the respective decisions.

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T 1847/18 (Transferring content stored on remote terminals/TENCENT TECHNOLOGY) of 8.2.2022

European Case Law Identifier: ECLI:EP:BA:2022:T184718.20220208

## **METHOD, RELATED DEVICE, AND SYSTEM FOR INTER-TERMINAL INTERACTIONS**

**Inventive step - transferring content from previously used remote terminals (no Inventive step - non-technical policy)**

Application number: 13836781.8

IPC class: G06Q 10/10

Applicant name: TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED

Cited decisions: T 0641/00, T 0398/10, T 0969/12, T 1073/15

Board: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t181847eu1.pdf>

Claim 1 of the main request reads (Board's numbering):

"An inter-terminal interaction method comprising:

(1) receiving, by a second terminal, a media resource insertion command entered by a user on a social networking platform,

(2) inserting, by the second terminal, the user's social networking platform account information into the media resource insertion command,

(3) sending, by the second terminal, the media resource insertion command carrying the user's social networking platform account information to a service device, enabling the service device to search terminal identification information associated with the account information, to generate prompt information, to send the prompt information to a first terminal based on the terminal identification information associated with the account information, and to receive media resources from the first terminal,

(4) receiving, by the second terminal, the media resources from the service device, and

- (5) inserting, by the second terminal, the media resources into the social networking platform,
- (6) wherein the prompt information prompts the first terminal to present media resources and to send media resources selected by the user from the presented media resources to the service device, and
- (7) wherein the service device searches terminal identification information associated with the account information by:
- (8) searching terminal identification information corresponding to the account information based on the account information from a matchup between the account information and terminal identification information, wherein when the user logs in the social networking platform from different terminals by using account information, the service device memorizes the matchup between the account information and the terminals' identification information,
- (9) checking whether the terminal identification information corresponding to the account information includes the second terminal's identification information, and
- (10) selecting from the terminal identification information corresponding to the account information identification information of one or more terminals other than the second terminal's identification information as the terminal identification information associated with the account information when the result of the checking is positive."

## Background

1. The invention facilitates publishing of content (e.g. images) to a social network (e.g. a blog) where the content is not stored on the terminal used to log into the social network (the "second terminal" in claim 1).

In such situation, a conventional way to transfer the requested content is to use a memory card or USB connection. This involves, however, manual activity and effort (see paragraphs [0004] and [0005] of the application).

2. The invention solves this problem by using a server ("service device") to access content from a specific group of terminals, namely those that have been used in the past to log into a user's social network account. The server keeps a list of these terminals ("the service device memorizes the matchup between the account information and the terminals' identification information") - see paragraphs [0058] and [0059].

When the user wishes to publish content to the social network ("a media resource insertion command"), a corresponding request is transmitted to the server. The server uses the user's social network account information to determine terminals to be accessed ("search terminal identification information associated with the account information") and selects one of them (the "first terminal"). This terminal prompts the user to select the desired content which is transmitted to the second terminal and published.

Main request, inventive step (Article 56 EPC)

3. In claim 1, the invention is defined as an "inter-terminal interaction method". Its aim is to transfer content stored on remote terminals to a local terminal. This method is used in the context of a social network in two ways. **First**, the transferred content is published to a social network account from the local terminal. **Second**, the remote terminals are those used in the past to log into this social network account.

For assessing inventive step the Board starts from the situation described in paragraph [0003] of the application, namely a conventional social networking platform with a login and publish functionality.

4. This starting point anticipates the first and fifth feature of claim 1, i.e. inserting content to a social networking platform.

The remaining features can be broken down into two groups of features characterising different aspects of the invention:

A. **Transferring content from remote terminals to the local**, i.e. logged in, terminal (second to fourth and sixth features in claim 1): The local terminal sends a content request including a user's account information to a server. The server, using the account information, determines and instructs a remote terminal to present content for user selection. The selected content is transferred via the server to the local terminal.

B. **Selecting the remote terminals** (seventh to tenth features in claim 1): The server stores a matchup between social network accounts and terminals used in the past to log into these accounts. This information is used to determine all terminals corresponding to the user's social network account. One or more of these terminals, specifically excluding the local terminal, are selected as target terminals for the content request.

5. The Board considers that the **features of group A** have the **effect of enabling a convenient transfer of content from remote terminals to a local terminal**.

The **features of group B**, however, **include non-technical features, relating to a policy for selecting terminals from which the user wishes to get content for publication to his social network account**.

6. In a nutshell, the policy specifies that the terminals to be selected are those that have been used in the past to log into the user's social network account.

The appellant argued that this policy improved data security and integrity.

Firstly, however, in the Board's view, the **selection of terminals is arbitrary**. It **depends entirely on the user's past decisions** from where to log into his social network account. This might be a friend's phone as well as an anonymous Internet terminal in an airport. For this reason alone the **selection cannot be based on security considerations** and provide the effects mentioned by the appellant.

Secondly, limiting the number of terminals certainly restricts the access to data - as compared to all possible terminals - but this **does not come as a surprise**. Again, this is a **policy decision not involving any technical considerations**.

As a general rule and **in line with established case law**, the Board considers that **data access or sharing policies are per se non-technical matter** (see T 1073/15 - Multi-level authentication/KASPERSKY, reasons 6; T 969/12 - Access control/ORACLE, reasons 2.1.3 and 2.1.4; T 398/10 - Sharing digital rights/PHILIPS, reasons 9.3 and 9.4).

The technical features of group B relate to the details for implementing the above policy. These include memorising a matchup between the user's social network account and identification information of terminals, searching this matchup and excluding the local terminal if included therein.

7. In view of the above, it is clear that the invention in claim 1 is a "**mixed-type invention**" involving both technical and non-technical features.

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8. In the present case, the technical problem is based on the effect of the features of group A including, as a requirement to be met, the non-technical policy reflected in the features of group B.

The Board, thus, formulates the **objective technical problem** as enabling a convenient transfer of social network content from previously used remote terminals to a local terminal.

9. The Board judges that the skilled person, starting from a conventional social networking platform in combination with D1, **would have solved this problem without inventive effort**.

10. As shown in Figure 1, D1 discloses a convenient way, e.g. using a web browser interface, to select data on remote terminals, so-called home nodes 130, and transfer the selected data to a local terminal, a so-called remote network access appliance 120.

The skilled person would learn from this document that the data transfer can be realised using server 110 which stores a list of remote terminals (configuration data 116, paragraphs [0057] and [0061]) and authorisation information such as user account data (authorisation criteria 114, paragraphs [0033] and [0052]). The server receives a content request from the local terminal and, using the provided authorisation information, instructs remote terminals to present content for user selection. Finally, the server transmits the selected content to the local terminal (paragraphs [0064] to [0066]).

D1, thus, anticipates all features of group A apart from the fact that the user account is the user's social network account. **This is, however, a direct consequence of the policy defined by the features of group B** and, as set out below, **does not contribute to inventive step**.

11. The appellant argued that the content request in claim 1 involved two steps. In a first step the user was prompted for confirmation and content selection. Only in a second step, the selected content was transferred to the local terminal - see paragraphs [0057], [0071] and [0076] of the application.

In D1, on the other hand, the user was presented with a list of available content (see paragraph [0065]). Thus, irrespective of any user interaction, this list was always transmitted from the remote to the local terminal.

12. **The Board is not convinced. Prompting is a vague term** and is interpreted as instructing the remote terminal to present content. The server in D1 does exactly this, i.e. it instructs the remote terminal to present content for user selection, for example in a web browser of the local terminal. This corresponds to the above-mentioned first step. Only in a second step the selected content is transferred to the local terminal (see paragraph [0065]).

13. The Board also considers that **D1 discloses the technical means for implementing the policy as defined by the features of group B** - see point 6 above.

14. In this respect the appellant argued that D1 did not disclose a matchup table. This was not needed as its underlying network architecture was completely different. The home nodes were configured using a plug-in and existed in a trusted environment. There was no motivation or benefit for storing and linking social network account information with terminals used for logon.

Also, D1 disclosed a fixed list of remote terminals whereas in the invention a new terminal, when used for logging into the social network account, was added to the list.

15. The **Board is not persuaded** by these arguments.

As mentioned above in point 10, the server in D1 stores a list of remote terminals and corresponding user account data. Furthermore, it is adapted to work in a variety of network environments (paragraph [0061]) and can be configured according to user preferences (paragraph [0056]). The Board, thus, considers that the **skilled person would not have faced any difficulties when adapting the system of D1** to work in the social networking environment of the invention.

16. The **key element of the invention, namely to keep at the server a list of terminals used to log into a social network account, is a direct consequence of the given policy for selecting remote terminals**.

The appellant held that to obtain the necessary logon data involved technical considerations. Paragraphs [0058], [00100], [00101] and [00107] and further Figures 7 and 8A of the application indicated that the service device was part of the social networking platform and monitored user logins.

The **Board does not follow this interpretation**. Paragraph [0058], for example, discloses that, when a user logs into the social network from different terminals, a server can memorise the

matchup between the account information and the terminals' identification information. This includes, as acknowledged by the appellant, the possibility that the server receives the matchup data from the social networking platform.

17. When asked to **implement the terminal selection policy** the skilled person would realise that first he needs to obtain the necessary data, i.e. a list of terminals used to log into a user's social network account. As said before, this data could be provided for download by the social networking platform.

The matchup data serves the same purpose as the list of terminals and account data stored on the server of D1, namely to enable the server to access the desired remote terminals. Therefore, it **would be obvious to the skilled person to replace the list of terminals of D1 with the terminals used to log into a social network account and use the same mechanism for transferring content as in D1.**

18. The appellant further argued that excluding the local terminal from the list of selected terminals improved user convenience.

The Board judges that this follows directly from what the method is meant to do, namely to insert content which is stored on remote terminals. Providing this feature, for example as a button in a GUI, and, when clicked, presenting an option to select content stored on the local terminal makes little sense. Apart from that, also for obvious technical reasons the skilled person would avoid selecting content on the local terminal and transmit it to the server for re-transmission to the local terminal.

To **implement this step does not require more than basic programming skills.** It can, therefore, not be considered inventive.

19. To conclude, the Board judges that the **skilled person would have arrived at the invention starting from a conventional social networking platform in combination with D1 without inventive effort.**

Therefore, claim 1 lacks inventive step (Article 56 EPC).

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T 1035/18 (Estimating airborne photovoltaic energy production/BOEING) of 2.11.2021

European Case Law Identifier: ECLI:EP:BA:2021:T103518.20211102

**Systems and methods for estimating net solar energy production for airborne photovoltaic systems**

**Inventive step - simulating the electrical energy production of a photovoltaic system (no Inventive step - not technical)**

**Inventive step - estimating fuel savings (no  
Inventive step - not technical)**

Application number: 14198163.9

IPC class: G06Q 50/06

Applicant name: The Boeing Company

Cited decisions: G 0001/19, T 0641/00, T 1227/05

Board: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t181035eu1.pdf>

Claim 1 of the **main request** reads (with the examining division's labelling of the features):

"A computer-implemented method for predicting electrical energy production of a photovoltaic system included in at least one aircraft (110), said method comprising:

[a] determining a first predicted amount of solar irradiance for each of a plurality of geographical points (104) as a function of location and time;

[b] determining a second predicted amount of solar irradiance received by the at least one aircraft along a flight path of the at least one aircraft, wherein the flight path (112) includes a subset of the plurality of geographical points, wherein the flight path has a starting time and an ending time, and wherein the second predicted amount is based at least in part on the first predicted amount; and

[c] determining a predicted amount of electrical energy produced by the photovoltaic system (200) along the flight path, based at least in part on the second predicted amount."

VIII. Claim 1 of the first auxiliary request adds to the end of feature [b] "and the total surface area of the photovoltaic system" and to the end of feature [c] "and a system efficiency of the photovoltaic system".

IX. Claim 1 of the second auxiliary request adds to claim 1 of the first auxiliary request in features [b] and [c] that the second predicted amount of solar irradiance and the predicted amount of electrical energy are determined for multiple flight paths.

Claim 1 of the **third auxiliary request** adds to the end of feature [a] of claim 1 of the second auxiliary request:

"wherein determining the first predicted amount comprises:

generating a weather and atmosphere attenuation model by parsing weather data to determine a probability of one or more weather events occurring at each of the plurality of geographical points;

calculating solar parameters for each of the plurality of geographical points; and



generating an irradiance model by combining the solar parameters with the weather and atmosphere attenuation model to determine, at each of the plurality of geographical points, an amount of solar irradiance attenuated due to weather conditions."

XI. Claim 1 of the **fourth auxiliary request** adds to the penultimate addition to claim 1 of the third auxiliary request "including an azimuth, a declination, an hour angle and a solar time" and at the end of feature [b] "and a model of the at least one aircraft, wherein the model defines surface angles and surface areas".

XII. Claim 1 of the **fifth to ninth auxiliary requests** adds the following feature at the end of claim 1 of the main and first to fourth auxiliary requests respectively (labelling added by the Board):

"[d] translating the predicted amount of electrical energy into an estimated saving in fuel used by the at least one aircraft, wherein the estimated saving in fuel is expressed in pounds (0.45 kgs) of fuel".

## 1. The invention

1.1 The invention is about **estimating the electrical energy production of a photovoltaic system of an aircraft in flight** (paragraph [0002] of the published application).

1.2 Looking at Figures 1 and 2, the method starts by estimating a first amount of solar irradiance 106 generated by the Sun 108 and received at a plurality of geographical points 104 as a function of time (feature [a]). Based on this, a second amount of solar irradiance received by an aircraft 110 travelling along a flight path 112 is determined. The flight path 112 includes a subset of the geographical points 104 and has a starting and an ending time (feature [b]). Based on the solar irradiance on the aircraft, the amount of electrical energy produced by the photovoltaic system 200 on the aircraft 110 is predicted (feature [c]).

Finally, the predicted amount of electrical energy is translated into estimated fuel savings (feature [d] of the fifth to ninth auxiliary requests).

## 2. Inventive step

2.1 The Board finds it convenient to start with the **ninth auxiliary request** because it is the **clearest and most concrete definition of the invention.**

2.2 The Board decided to admit this late-filed request (as well as the fifth to eighth auxiliary requests which were filed at the same time) into the proceedings.

Amended claim 1 of the ninth auxiliary request aims at overcoming the Board's objections raised in the communication accompanying the summons to oral proceedings. As these objections were based on G 1/19, which was issued after the grounds of appeal were filed, the appellant could not have anticipated and addressed them earlier. In the Board's judgment,



these are cogent reasons that **justify the exceptional circumstances** required by Article 13(2) RPBA 2020.

2.3 The examining division held that steps [a] to [c] defined **a prediction method at a high level of abstraction that could be performed by purely mental or mathematical means**. This was in contrast to the case in T 1227/05 (Circuit Simulation/Infineon) where the deciding Board held that the simulation could not be performed purely by such means and provided for realistic prediction of the performance of a designed circuit.

2.4 In the grounds of appeal, the appellant argued that the present case resembled that in T 1227/05 because steps [a] to [c] simulated the performance of a photovoltaic system under realistic conditions. Therefore, the claimed method related to the simulation of an adequately defined class of technical systems under technically relevant conditions, which was held patentable in T 1227/05 (see point 3.5.2).

2.5 The Board considers that the question of whether or not the present case resembles that of T 1227/05 is **moot in view of G 1/19, which supersedes T 1227/05**. According to G 1/19, whether a simulation contributes to the technical character of the claimed subject-matter does not depend on the degree to which the simulation represents reality (point 111); nor does it depend on the technicality of the simulated system (point 120). What counts is whether the simulation contributes to the solution of a technical problem (point 120).

2.6 It is common ground that **steps [a] to [c] define a simulation method**. The method **produces calculated numerical data**, i.e. a **prediction of the amount of electrical energy produced by the photovoltaic system during multiple flight paths**. The Board agrees with the examination division's decision that **these steps do not involve a technical effect**.

2.7 Following the principles laid out in G 1/19, the Board considers that whether the simulation achieves a technical effect depends on the further use of these numerical data (G 1/19, point 124).

The appellant argued for such an effect on the basis of step [d], added during the appeal, which specifies a further use of the predicted amount of electrical energy, namely translating this amount into estimated fuel savings. The **issue in the present case is, thus, whether the estimated fuel savings provide a technical effect**.

2.8 In its written submissions, the appellant argued that estimating the savings in pounds of fuel, i.e. in terms of weight, was a technical feature. It defined a technical purpose for the predicted amount of electrical energy.

2.9 The **Board is not convinced** by this argument because **estimating the fuel savings for a flight is a non-technical administrative activity**. All that the **invention adds is another parameter in this estimation**, namely an additional source of energy and its associated fuel equivalent.

2.10 During the oral proceedings, the appellant argued that the estimated fuel savings implied a more precise estimation of the amount of fuel needed by the aircraft for a flight. This was a

technical effect because refuelling the aircraft with the optimal amount of fuel would enable the aircraft to traverse the flight path more efficiently.

According to the appellant, refuelling the aircraft with the optimal amount of fuel was implicit in the claim. Consequently, steps [a] to [d] contributed to the technical character of the invention (e.g. point 137 of G 1/19).

2.11 The Board considers that **although refuelling is a technical process, it is not a direct consequence of the estimated fuel savings but would only occur as a result of a human decision** (see also G 1/19, point 123). Moreover, the **estimated fuel savings can also be used for business decisions**, such as whether the savings merit the production and installation of the photovoltaic system or whether they permit a reduction of the flight tickets' prices. Hence, the **estimations do not have an implied technical use** that can be the basis for an implied technical effect (see also G 1/19, points 98, 128).

2.12 The appellant also argued during the oral proceedings that step [a] described an accurate model for predicting the solar irradiance at a plurality of geographical points. This, in turn, led to a more precise estimation of the fuel savings. According to point 111, second sentence, of G 1/19, the accuracy of a simulation might be taken into consideration in the assessment of inventive step.

2.13 In the Board's view, however, **the simulation's accuracy might play a role in the assessment of inventive step only if the simulation contributes to the technical character of the invention**. In view of the above (points 2.8 to 2.11), the Board judges that the **simulation does not contribute to the technical character of the invention**. Hence, the **simulation's accuracy is irrelevant for the assessment of inventive step**.

2.14 As features [a] to [d] do not contribute to the technical character of the invention, they can be legitimately incorporated into the technical problem solved, as constraints to be met (T 641/00). The Board concurs with the examining division that the technical problem solved is how to implement the non-technical features in a general-purpose computer system. The **claimed solution amounts to straightforward automation**, which is obvious to the skilled person.

2.15 Accordingly, claim 1 of the ninth auxiliary request does not involve an inventive step (Article 56 EPC).

2.16 Since claim 1 of the main and first to eighth auxiliary requests have a broader scope than that of claim 1 of the ninth auxiliary request, they do not involve an inventive step (Article 56 EPC) for the same reasons as given above.

## VERFAHREN ZUR PRÜFUNG EINZELNER ZAHLUNGSBELEGE UND HANDELSRECHNUNGEN

**Schlagwörter:** Zurückverweisung - Mangelnde Berücksichtigung technischer Merkmale durch die erste Instanz (ja Zurückverweisung - Nachrecherche erforderlich)

Anmeldenummer: 13759763.9  
IPC-Klasse: G06Q 20/04, G06Q 90/00, G07F 7/02  
Name des Anmelders: EFSTA IT Services GmbH

Angeführte Entscheidungen: T 0641/00, T 0772/18

Kammer: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t181984du1.pdf>

### 1. Hintergrund der Anmeldung

#### 1.1 Die Erfindung betrifft ein Verfahren zur Speicherung und Prüfung elektronischer Zahlungsbelege.

Handelsunternehmen müssen normalerweise Zahlungsbelege, etwa beim Verkauf von Waren oder Dienstleistungen, in der Buchführung erfassen und einer externen Revision, zum Beispiel durch die Finanzbehörde, zur Verfügung stellen (siehe zweiter Absatz auf Seite 1 der veröffentlichten Beschreibung).

1.2 Selbst wenn Verkaufsstellen über die technischen Voraussetzungen zur elektronischen Erfassung und Verbuchung von Zahlungsbelegen verfügen, sind diese oft nicht manipulationssicher. Ziel der Erfindung ist es, ein Verfahren bereitzustellen, das manipulationssicher ist und eine korrekte Verbuchung und Prüfbarkeit von Zahlungsbelegen sowohl für externe Prüfstellen als auch für Kunden ermöglicht - siehe Brückenabsatz der Seiten 1 und 2.

1.3 Dazu übermittelt die Kasse einer Verkaufsstelle Transaktionsdaten an eine Registrierungs- und Sendeeinheit, welche diese Daten mit einer eindeutigen Identifikationsnummer versieht und verschlüsselt. Ferner loggt die Registrierungs- und Sendeeinheit verschiedene Ereignisse, die auf Manipulationsversuche hinweisen könnten, wie zum Beispiel die aktuelle Schreibposition auf der Festplatte (siehe dritter Absatz auf Seite 4).

Diese Betriebsdaten ("Betriebsprotokoll" in Anspruch 1) werden ebenso verschlüsselt und zusammen mit den verschlüsselten Transaktionsdaten ("Transaktionsprotokoll") an einen externen ("öffentlich unzugänglichen") Datenspeicher übermittelt. Eine Prüfstelle kann auf diesen Datenspeicher nur nach Erhalt einer entsprechenden Zugriffsberechtigung und Entschlüsselungsvorschrift zugreifen. Die Prüfstelle kann somit sowohl die Korrektheit der

Umsatzmeldungen als auch allfällige Manipulationsversuche überprüfen - siehe letzter Absatz auf Seite 10 der Beschreibung.

1.4 Um Stichproben auch für Kunden zu ermöglichen, übermittelt die Registrierungs- und Sendeeinheit zudem die mit Hilfe des Kaufpreises verschlüsselte Identifikationsnummer an einen weiteren externen ("öffentlich zugänglichen") Datenspeicher. Der Kunde kann mittels Eingabe eines Zugangscodes, bestehend aus der Identifikationsnummer und dem Kaufpreis, auf diesen zugreifen und überprüfen, ob der betreffende Zahlungsbeleg von der Buchführung des Handelsunternehmens erfasst wurde (siehe zweiter Absatz auf Seite 11 der Beschreibung).

2.2 Es ist unstrittig, dass der Gegenstand von Anspruch 1 eine "Mischerfindung" darstellt, die aus technischen und nichttechnischen Merkmalen besteht und als Ganzes technischen Charakter aufweist.

Zur Beurteilung der erfinderischen Tätigkeit hat die Prüfungsabteilung deshalb den Comvik-Ansatz (T 641/00 - Zwei Kennungen/COMVIK, ABl. EPA 2003, 352) angewandt. Dabei ist die korrekte Bestimmung der technischen Merkmale von größter Bedeutung, da nur diese Merkmale zur Beurteilung der erfinderischen Tätigkeit herangezogen werden. Diese Merkmale werden regelmäßig recherchiert. Nichttechnische Merkmale sind hingegen normalerweise von der Recherche ausgeschlossen.

2.3 Die Kammer stimmt der Prüfungsabteilung zu, dass die **Grundidee der Erfindung, nämlich das Aufbewahren und Prüfen von Buchhaltungsdaten, insbesondere von Zahlungsbelegen, administrativer oder geschäftlicher und damit nichttechnischer Natur ist**.

So ist es zum Beispiel gesetzlich vorgeschrieben, dass Buchhaltungsdaten für einen bestimmten Zeitraum aufbewahrt oder von einer externen Prüfungsstelle überprüft werden müssen - siehe Brückenabsatz der Seiten 11 und 12 der Beschreibung. Dass diese Daten nur für autorisierte Personen zugänglich sind, ist eine weitere administrative Vorgabe. Ebenso der Wunsch, dass sich ein Kunde über die Rechtmäßigkeit der Buchführung informieren kann.

Die Kammer ist zudem der Meinung, dass es, dem **Trend der Zeit** entsprechend, für Kunden und Prüfungsstellen wünschenswert ist, online auf die Buchhaltungsdaten zugreifen zu können. **Zahlungsbelege müssen auch eindeutig identifizierbar sein**, um etwa zu überprüfen, ob ein bestimmter Zahlungsbeleg von der Buchhaltung erfasst wurde.

2.4 **Demgegenüber fallen die Verwendung von Verschlüsselungsvorschriften, Zugangscodes zu einem Datenspeicher und das Erstellen von Betriebsdaten in die Sphäre des technischen Fachmanns.**

Das **Speichern von verschlüsselten Daten in Datenspeichern**, die entweder nach erteilter Zugriffsberechtigung oder mit Hilfe eines Zugangscodes, welcher dem Kunden mit dem Zahlungsbeleg mitgeteilt wird, online zugänglich sind, **stellen technische Maßnahmen dar**. Auch das **Erfassen von Betriebsdaten durch die Registrierungs- und Sendeeinheit zum Zwecke des Nachweises von Manipulationen** (siehe dritter Absatz auf Seite 4 der Beschreibung) **beruht auf technischen Überlegungen, die über das hinausgehen, was von**

**einem Geschäftsmann an technischem Verständnis erwartet werden kann. Die zugehörigen Verfahrensschritte können deshalb nicht in die Formulierung der technischen Aufgabe aufgenommen werden** (siehe T 641/00, supra).

2.5 Damit hat die Prüfungsabteilung zwei wesentliche Merkmale des beanspruchten Gegenstandes **fälschlicherweise als nichttechnisch angesehen**. Diese sind:

A. Das Erstellen, Verschlüsseln und Übermitteln eines Betriebsprotokolls, welches Betriebsdaten enthält, an einen ersten Datenspeicher seitens der Registrierungs- und Sendeeinheit (siehe Punkte 15.2.1, 15.2.1.3 und 16.1.1 der Entscheidung)

B. Die Verschlüsselung und Speicherung einer Identifikationsnummer in einem zweiten Datenspeicher und deren automatische Ausgabe auf dem Zahlungsbeleg, mittels dessen der Kunde die korrekte Verbuchung überprüfen kann (siehe Punkte 15.4, 15.4.1 und 16.1.2 der Entscheidung)

2.6 Die Kammer hat **keine Zweifel, dass das (automatische) Erfassen von Betriebsdaten (Merkmal A) technisch** ist und ein wesentliches Ziel des erfindungsgemäßen Verfahrens betrifft, nämlich das Erkennen von Manipulationsversuchen.

Auch die Tatsache, dass die Prüfungsabteilung zwar argumentierte, dass das kennzeichnende Merkmal von Anspruch 1 bekannt sei, aber nicht begründete, warum der Fachmann dieses zum Erkennen von Manipulations-versuchen verwenden würde, deutet darauf hin, dass sie in der Erfassung von Betriebsdaten (wie etwa der unterschiedlichen Schreibpositionen auf der Festplatte) keinen Beitrag zum technischen Charakter des beanspruchten Gegenstandes sah.

2.7 Ferner stellte die Prüfungsabteilung wiederholt fest, dass die Anmeldung keinerlei technische Merkmale bezüglich der Verschlüsselung offenbare. Insbesondere sei der Zugang zu einem Datenspeicher mittels Identifikationsnummer und Kaufpreis (Merkmal B) eine rein gedankliche Tätigkeit.

Die Kammer kommt zum Schluss, dass **auch dieses Merkmal technischer Natur** ist. Während die Idee, dem Kunden die Möglichkeit einer Überprüfung der korrekten Verbuchung des Zahlungsbelegs zu geben, geschäftlicher Natur sein mag, verlangen die Datenverschlüsselung und der sichere Zugriff auf einen Datenspeicher zweifelsohne technische Überlegungen.

2.8 Die von der Prüfungsabteilung somit **fälschlich als nichttechnisch angesehenen Merkmale A und B wurden nicht recherchiert**. Damit ist eine **abschließende Beurteilung der erfinderischen Tätigkeit durch die Kammer nicht möglich**. Die fehlende Recherche ist also nachzuholen.

T 0658/18 (Aggregated soft card/MASTERCARD) of 13.6.2022

European Case Law Identifier: ECLI:EP:BA:2022:T065818.20220613

## **METHODS, SYSTEMS, AND COMPUTER READABLE MEDIA FOR PROVISIONING AND UTILIZING AN AGGREGATED SOFT CARD ON A MOBILE DEVICE**

Application number: 12846583.8  
IPC class: G06Q 20/32, H04B 5/02, G06Q 20/34, G06Q 20/20, G06Q 20/02  
Applicant name: MasterCard International Incorporated

Cited decisions: T 0641/00, T 1242/04

Board: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t180658eu1.pdf>

Independent claim 1 of the main request reads as follows:

"1. A system for provisioning and utilizing an aggregated soft card on a mobile device, the system comprising:

a plurality of soft card issuing system servers configured to store component soft card data;  
and

a trusted service manager (TSM) server configured to receive a request for an aggregated soft card from a mobile device, to access a mapping database to identify a primary component soft card and at least one secondary component soft card that constitutes the aggregated soft card using an aggregated soft card identifier contained in the request from the mobile device and to identify addresses of the soft card issuing system servers hosting the component soft card data associated with each of the primary component soft card and at least one secondary component soft card, to request the component soft card data associated with each of the primary component soft card and the at least one secondary component soft card from the plurality of soft card issuing system servers, to generate aggregated soft card data by establishing a link among the component soft card data received from the plurality of issuing system servers, and to send the aggregated soft card data to the mobile device, wherein the link includes an application identifier list that contains application identifiers that identify the primary component soft card and the at least one secondary component soft card and are loaded into a proximity payment system environment (PPSE) application of the mobile device in accordance with a predefined preference order in which the primary component soft card and the at least one secondary component soft card are attempted to be used in a wireless transaction between the mobile device and a wireless device reader upon selection of the aggregated soft card to conduct the wireless transaction with the wireless device reader, wherein each of the application identifiers for the primary component soft card and the at least one secondary soft card includes a field that includes an indicator that respectively designates each of the primary component soft card and the at least one secondary soft card as a component of the aggregated soft card."

1. Background of the invention



1.1 The invention concerns wireless devices conducting payment and non-payment transactions, in particular an aggregated soft card on a mobile device, see page 1, second paragraph, of the application.

1.2 Conventionally, consumers carry several plastic payment and non-payment cards in their wallets, such as debit and credit cards, transit tickets, identification cards, or club membership cards, see page 1, third paragraph. To reduce the number of physical cards, many consumers, page 2, first paragraph, have provisioned their mobile devices with soft card versions. However, different soft cards may be used separately in sequence during a single wireless transaction. Although the issuing of a dual purpose soft card is desirable, communication and compatibility problems can arise when utilizing a soft card version.

1.3 The invention addresses the technical problem of how to provide and utilize an aggregated soft card on a near field communication (NFC) enabled mobile device with which it interfaces with a passive wireless transceiver.

1.4 The solution is an aggregated or multi-component soft card which is a combination of two or more electronic or virtual cards that are logically linked as a single aggregated soft card that is depicted/displayed on a mobile device as a single visual representation. By logically linking the two or more soft cards into an aggregated one allows to use them in a single payment transaction (without multiple taps on a card reader).

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## 2. Main request - Article 56 EPC

2.1 Claim 1 of the main request was refused for a lack of inventive step over D1 (US2010/0041368), from which it was distinguished according to the examining division by the following features, see point 14 of the decision under appeal :

(i) the soft card is an aggregated soft card,

(ii) a plurality of soft card issuing servers,

(iii) to access a mapping database to identify a primary component soft card and at least one secondary component soft card that constitutes the aggregated soft card using an aggregated soft card identifier contained in the request from the mobile device and to identify addresses of the soft card issuing system servers hosting the component soft card data associated with each of the primary component soft card and at least one secondary component soft card,

(iv) to request the component soft card data associated with each of the primary component soft card and the at least one secondary component soft card from the plurality of soft card issuing system servers,

(v) wherein the link includes an application identifier list that contains application identifiers that identify the primary component soft card and the at least one secondary component soft



card and are loaded into a proximity payment system environment (PPSE) application of the mobile device in accordance with a predefined preference order in which the primary component soft card and the at least one secondary component soft card are attempted to be used in a [wireless] transaction with the aggregated soft card,

(vi) wherein each of the application identifiers for the primary component soft card and the at least one secondary soft card includes a field that includes an indicator that respectively designates each of the primary component soft card and the at least one secondary soft card as a component of the aggregated soft card.

2.2 The **examining division** considered that features (i, iii to vi) relate to business aspects solving no technical problem and that their implementation was a mere automation of constraints imposed by business aspects, whereas feature (ii) was a standard alternative in network processing to either centralize or decentralize a predetermined functionality, see point 14 of the decision; D1 was disclosing a single server.

2.3 The **appellant** in summary argues that D1 deals with the provisioning of soft cards which are single component cards used in payment transactions whereas the invention proposes an aggregated or multi-component soft card, which is a combination of two or more component electronic or virtual cards that are logically linked as a single card, on a mobile device. The aggregated soft card is provided by a trusted service manager (TSM) server upon request from the mobile device. This is an additional difference (ia) compared to D1.

This TSM server does not contain a limited number of different component soft cards, but it is configured, based on the received requests, to identify different addresses of the soft card issuing system servers hosting the component soft card data and thereafter combine component soft cards to obtain a large variety of aggregated soft cards.

2.4 The features which distinguish claim 1 from D1 are therefore features (i), (ia) and (ii) to (vi) which all together have the technical effect that with a single request an aggregated soft card can be provided that comprises a plurality of soft cards. This leads to the technical problem of "**how to improve the provisioning and use of a soft card on a mobile device**", such as the one known from D1.

2.5 The appellant then argues that based on D1, the skilled person might use a single issuing server for hosting a variety of single-component, single-issuer soft cards, wherein the single issuing server would be configured for storing, maintaining and updating, if needed, of the data relating the stored single-component, single-issuer soft cards. However, the skilled person would not be motivated to use a multitude of issuing system servers in combination with a TSM server for the claimed purpose of an aggregated, multi-component soft card by establishing a link among the soft card data received from the plurality of issuing system servers.

2.6 The **Board agrees with the distinguishing features as set out by the appellant**.

D1 discloses the provision of soft cards to a mobile device in replacement of physical cards, see [0012], which can be payment cards, loyalty cards, member cards, identification cards and

other payment and non-payment cards. [0027] discloses a wallet client application on the NFC-enabled mobile device 114 which manages multiple soft cards stored in a secure element on the mobile device. Prepaid soft cards (or gift cards) are provided by an OTA provisioning server 112, see [0029] and [0030], to a recipient of a mobile device upon request by a purchaser. Requester and recipient are different persons and the location for requesting a gift card is disclosed to be done from a merchant website or at a merchant point of sale, see [0016] [0023]. The merchant server receives the purchase data and requests the OTA provisioning server to deliver the prepaid soft card to the mobile device, see [0025] and [0026], if the mobile device is NFC-enabled. When payment is made at a cashier, a user selects the payment soft card from the wallet, see [0051], and brings the NFC enabled mobile device in close proximity to the wireless device reader.

2.7 However, **D1 is silent about how the other soft cards are provided to and installed on the mobile device.**

It may be assumed - reading it implicitly into D1 - that it is the OTA server which provides them. The OTA server would then correspond to the claimed TSM server. It may furthermore be assumed that the "merchant server" in D1 stands for a plurality of merchant servers.

When taking a credit card of D1 as a primary component soft card and a loyalty card of D1 as a secondary component soft card, it may also be seen as a business idea, for example, to link both cards in sort of an aggregated soft card, to make sure that loyalty points are registered after a purchase was made with a particular credit card. Customers might forget to use their loyalty card. Linking these two cards in some way that they are loaded in the payment application in D1 would be a logical technical consequence.

**However, the business idea stops here.**

2.8 The particular claimed process of requesting and providing an "aggregated" soft card is not disclosed in D1 nor is it rendered obvious, because the **features (i), (iii) to (vi)**, relating to the **provision of an "aggregated" soft card** were **erroneously taken as non-technical whereas they are clearly technical.**

2.9 Furthermore, the OTA server of D1 would need to be adapted in the claimed manner, that is, it would need to maintain a mapping database with "aggregated" soft cards, but **D1 teaches a different solution**: the linking of the different cards in D1 may also be done on the mobile device, simply by allowing a user to combine different cards.

**Incorrect application of the COMVIK approach**

2.10 The Board observes that the **examining division included a trusted service manager (TSM) server accessing a mapping database, the generation of an "aggregated" soft card, the provision of a link including an application identifier list, in the business method whereas these features have technical character.**

2.11 In the Board's view **this was an incorrect application of the COMVIK approach**, which **only permits "an aim to be achieved in a non-technical field" to appear in the**

**formulation of the problem** (T 641/00). They **can hardly be regarded as notorious** (nor did the examining division allege they were, see point 14, page 4, last paragraph). In the absence of prior art proving the contrary, they cannot be assumed to be known as such. Since the **decision under appeal does not cover these aspects of the invention, it must be set aside.**

Additional search

2.12 Regarding the procedure before the examining division, the Board is of the opinion that the **examining division should have performed an additional search since** the provision of a trusted service manager (TSM) server accessing a mapping database, the generation of an "aggregated" soft card, the provision of a link including an application identifier list and the other features of claim 1 which relate to the generation of an "aggregated" soft card are neither non-technical nor notorious.

2.13 Following the principles set out in decision T 1242/04, reasons, point 8, the **Board considers that it cannot decide without having these features searched which the examining division originally erroneously interpreted to be non-technical or notorious. The term "notorious" should always be interpreted narrowly.**

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T 1989/17 () of 19.5.2022

European Case Law Identifier: ECLI:EP:BA:2022:T198917.20220519

## **EFFICIENT BUMP MAPPING USING HEIGHT MAPS**

**Inventive step - sole request (yes)**

Application number: 04723632.8

IPC class: G06T 15/20

Applicant name: Imagination Technologies Limited

Board: 3.5.04

<https://www.epo.org/law-practice/case-law-appeals/pdf/t171989eu1.pdf>

The claim 1 of the sole request reads as follows:

1. A method for generating bump map data for use in a 3-dimensional computer graphics system comprising the steps of:

receiving data defining an area to which a texture is to be applied, the data comprising a requested sample position of the texture;

receiving texture data to apply to the area, the data including surface height data;

performing a filtering step on samples of the texture data to generate filtered samples;

deriving surface tangent vectors from the filtered samples; and

deriving a bump map surface normal from the surface tangent vectors characterised in that the filtering step includes the steps of: using bi-quadratic B-splines to model a height surface from the surface height data; and, for the requested sample position of the texture, fetching a 3x3 set of height values (100) for the surface height data comprising four partially overlapping 2x2 grids of values, and filtering the four 2x2 grids of values at respective bilinear units (65, 66, 67, 68) to generate the filtered samples, the bilinear units (65, 66, 67, 68) being red, green, blue and alpha bilinear units configured to calculate a respective red, green, blue and alpha colour channel, the bilinear units using a set of blending factors so that the bilinear unit that filters the top-left 2x2 grid of values uses blending factors (Ublend0, Vblend0), the bilinear unit that filters the top-right 2x2 grid of values uses blending factors (Ublend1, Vblend0), the bilinear unit that filters the bottom-left 2x2 grid of values uses the blending factors (Ublend0, Vblend1) and the bilinear unit that filters the bottom-right 2x2 grid of values uses the blending factors (Ublend1, Vblend1), where  $Ublend0 = 1/2 + Ublend/2$ ;  $Ublend1 = Ublend/2$ ;  $Vblend0 = 1/2 + Vblend/2$ ;  $Vblend1 = Vblend/2$  and Ublend and Vblend are linear blending factors.

IX. In the decision under appeal, concerning the second auxiliary request then on file, the examining division held as follows.

The region of the curve was calculated with the standard approach of using the equivalent Bézier representation of the quadratic B-spline, where the Bézier points were derived as the mid-points of the connecting line segments between the control points and were obtained by simple averaging, as acknowledged in the description on page 6, lines 15 to 23.

The calculation of blending factors was inherent in de Casteljaou's algorithm, as acknowledged on page 7 of the description and known from the prior art - see, for example, document D4, page 269, first two sentences.

The claimed conversion of the blending factors was mathematically equivalent to the above-mentioned standard approach. Using a mathematically equivalent calculation did not involve an inventive step (see decision under appeal, points 4.1 and 5 b)).

## 5. Sole request - inventive step (Article 56 EPC 1973)

5.1 Document D1 discloses, applying the wording of claim 1, a method for generating bump map data for use in a 3-dimensional computer graphics system (see page 1, left column, lines 1 to 7) comprising the steps of:

- receiving data defining an area to which a texture is to be applied, the data comprising a requested sample position of the texture (see page 3, left column, lines 7 to 9: "A torus is bump mapped")

- receiving texture data to apply to the area, the data including surface height data (see page 1, left column, lines 1 to 7)
- performing a filtering step on samples of the texture data to generate filtered samples (see page 2: left column, last paragraph; right column, equations (3) and (4); right column, first to third paragraphs)
- deriving surface tangent vectors from the filtered samples (see page 2, right column, equations (5) and (6))
- deriving a bump map surface normal from the surface tangent vectors (see page 1, right column, equation (1), lines 5 to 11)

5.2 Furthermore, document D1 discloses that the filtering step includes the step of using a suitable family of spline curves to model a height surface from the surface height data (see page 2, right column, lines 1 to 4 and 14 to 18). One such family of spline curves disclosed in document D1 comprises cubic B-splines (see page 3, left column, first paragraph: "Cubic B-splines" and section 3.1). Since these cubic B-splines are applied in both u and v dimension (see page 2, equation (4) and the subsequent paragraph), they act as bi-cubic B-splines.

5.3 It is common ground (see decision under appeal: page 8, point 4.1, first and second paragraphs, in combination with page 7, second paragraph; and statement of grounds of appeal: page 9, fourth paragraph, in combination with page 7, second paragraph) that the subject-matter of **claim 1 differs from the disclosure of document D1 in that the filtering step of claim 1 includes the following distinguishing features:**

- (a) using bi-quadratic B-splines to model a height surface from the surface height data
- (b) for the requested sample position of the texture, fetching a 3x3 set of height values for the surface height data comprising four partially overlapping 2x2 grids of values
- (c) filtering the four 2x2 grids of values at respective bilinear units to generate the filtered samples, the bilinear units being red, green, blue and alpha bilinear units configured to calculate a respective red, green, blue and alpha colour channel
- (d) the bilinear units using a set of blending factors so that the bilinear unit that filters the top-left 2x2 grid of values uses blending factors (Ublend0, Vblend0), the bilinear unit that filters the top-right 2x2 grid of values uses blending factors (Ublend1, Vblend0), the bilinear unit that filters the bottom-left 2x2 grid of values uses the blending factors (Ublend0, Vblend1) and the bilinear unit that filters the bottom-right 2x2 grid of values uses the blending factors (Ublend1, Vblend1), where  $Ublend0 = 1/2 + Ublend/2$ ;  $Ublend1 = Ublend/2$ ;  $Vblend0 = 1/2 + Vblend/2$ ;  $Vblend1 = Vblend/2$  and Ublend and Vblend are linear blending factors.

5.4 Using bi-quadratic B-splines instead of bi-cubic B-splines (see distinguishing feature a) in point 5.3 above) **has the technical effect of simplifying a calculation of the spline**, because fewer polynomial coefficients are to be determined.

The **distinguishing feature b)** in point 5.3 above together with the feature of "filtering the four 2x2 grids of values at respective bilinear units to generate the filtered samples" **has the technical effect of simplifying the calculation** of bi-quadratic B-splines through the application of successive bilinear interpolations between sub-sets of control points in the form of de Casteljau's algorithm.

The feature "the bilinear units being red, green, blue and alpha bilinear units configured to calculate a respective red, green, blue and alpha colour channel" **allows for a hardware-efficient implementation through the reuse of available hardware units within a graphics processing unit** (see description as originally filed: page 3, line 19, to page 5, line 26 and Figures 4a and 4b).

The **technical effect of feature d)** in point 5.3 above is that the **results of a bilinear interpolation between B-spline control points** using the modified sets of blending factors **become identical to the results of bilinear interpolation between Bézier control points** using the blending factors Ublend and Vblend (see decision under appeal: page 9, first paragraph and page 10, section 5 b); and statement of grounds of appeal: page 10, third and fourth paragraphs). Thus, a **conversion** from B-spline control points to Bézier control points **can be avoided while achieving the same filtering**.

5.5 A necessary condition imposed on the filtered surface height data is that the data must have at least C1 continuity or, in other words, a continuous first derivative. This guarantees the existence of defined surface tangents and a surface normal can thus be calculated at all positions of the height map (see description as originally filed, page 8, lines 3 to 5).

5.6 In view of the above, the **objective technical problem could be formulated as reducing the complexity of filtering using B-splines while maintaining at least C1 continuity in the modelled height surface and implementing this filtering in a hardware-efficient manner.**

5.7 The board finds that the **person skilled in the art**, faced with this objective technical problem, **would not have come across any hint or suggestion in the available prior art so as to arrive at distinguishing feature d)** of point 5.3 above.

...

5.8 The **examining division** held that the results of a bilinear interpolation between B-spline control points using the modified sets of blending factors were identical to the results of bilinear interpolation between Bézier control points using the blending factors Ublend and Vblend. The examining division concluded that **using a mathematically equivalent calculation did not involve an inventive step** (see point IX. above).

However, the board finds that **distinguishing feature d)** of point 5.3 above provides a specific **technical effect of avoiding a conversion** from B-spline points to Bézier points through alteration of the blending factors. This **amounts to a simplification of the computing workflow** facilitated by using bilinear interpolation units as available in a common graphics processing unit with non-standard interpolation factors.



5.9 Therefore, the board is of the opinion that the **subject-matter of claim 1 according to the sole request is not obvious** over the disclosure of document D1 combined with the common general knowledge of the person skilled in the art exemplified by document D4.

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T 1636/18 (Estimating departure time/QUALCOMM) of 3.3.2022

European Case Law Identifier: ECLI:EP:BA:2022:T163618.20220303

**METHODS AND APPARATUS FOR ESTIMATING  
DEPARTURE TIME BASED ON KNOWN CALENDAR  
EVENTS**

**Inventive step - obtaining current time from a network (no**

**Inventive step - obvious)**

**Inventive step - estimating travel time only when a current location and an event  
location differ by more than a threshold (no**

**Inventive step - not technical)**

Application number: 10776856.6

IPC class: G06Q 10/10, G01C 21/00

Applicant name: Qualcomm Incorporated

Cited decisions: G 0003/08, T 0641/00, T 0258/03, T 1227/05, T 1755/10, T 0520/13

Board: 3.5.01

<https://www.epo.org/law-practice/case-law-appeals/pdf/t181636eu1.pdf>

Claim 1 of the main request reads as follows (with the appellant's numbering):

1. |A method of operating a wireless device for generating at least one departure alert for at least one event, the method comprising: |

1.1|obtaining scheduling data associated with a first event, wherein the first event scheduling data includes a first event time value and a first event location value; |

1.2|obtaining a device location value of the wireless device from a location detecting sensor associated with the wireless device or from a network; |

1.3|obtaining a current time value from a network; |

1.4|determining if the first event location value and the device location value differ by more than an event location threshold: |



1.5|upon a determination that the first event location value and the device location value differ by more than the event location threshold, estimating a first travel time value from the device location and the first event location; |

1.6|generating, by the wireless device, a departure time value by comparing the first event time value and the estimated first travel time value; and |

1.7|generating, by the wireless device, a departure alert by comparing the departure time value and the current time value.

## 1. The invention

The invention concerns estimating the departure time when users have to leave their current location in order to arrive at the destination for a scheduled event on time (paragraph [0003] of the published application).

Looking at Figure 1, a user populates a calendar module 112 with an event 114 at a specified location 116 ([0029]). A wireless device 110 then calculates a departure time for this event by comparing its current location to the scheduled event location 116 ([0034]). If the two locations differ by more than a given threshold, the wireless device estimates the travel time from the current location to the event location ([0035]). Finally, the device determines a departure time from the estimated travel time and the scheduled event time and generates an alert by comparing the departure time and the current time ([0036]).

## 2. Main request - inventive step

2.1 It is common ground that D4 is a valid starting point for assessing inventive step and that claim 1 differs by features 1.3 to 1.5.

2.2 Concerning feature 1.3, the appellant argued that network-provided time properly reflected the local time and resulted in more accurate departure alerts. Accurate alerts were also energy-efficient as they rendered the generation of further alerts unnecessary. Moreover, as network-provided time was shared with other devices served by the network, it led to a better synchronisation between these devices and between the event participants.

2.3 The **Board**, however, **agrees with the examining division** that **obtaining the current time from a network is one of several obvious choices**. Cell phones normally have the option to obtain the time from their network provider. The description mentions this possibility only in passing ([0033]) without indicating any effects or advantages associated with it. The **appellant's efficiency and synchronisation arguments are merely speculative**, as claim 1 neither discloses how the alert generation depends on the current time nor mentions other event participants or devices that might be affected by this alert.

2.4 Concerning features 1.4 and 1.5, the appellant argued that not estimating the travel and departure times when the mobile device was near the destination achieved the technical effect of saving computational resources. The problem solved was thus to provide a more energy-efficient way of creating departure alerts. In line with established case law, non-technical

features which contributed to the solution of a technical problem also had to be taken into account in the assessment of inventive step.

2.5 The **Board is not convinced**. Estimating travel times and generating departure alerts is known from D4. **Features 1.4 and 1.5 merely specify a condition on when to perform (or not) these operations**. In the Board's view, this **condition does not necessarily come from technical considerations, but may merely reflect subjective user preferences**. Some users may prefer not to be disturbed by annoying notifications when they are close to their intended destination. Other users, however, may be unfamiliar with the neighborhood and may prefer to have such reminders.

Any **energy efficiency, if indeed achieved, would be an inevitable bonus effect resulting from the straightforward implementation of these non-technical considerations**. An effect that is a mere consequence of a modified business scheme cannot contribute to the technical character of the subject-matter claimed (see e.g. T 258/03 - Auction method/HITACHI, Headnote II).

2.6 Moreover, according to the jurisprudence of the boards of appeal, the **technical character of a feature is independent of the prior art**. Therefore, **relative effects, such as reduced processing time, cannot be used to distinguish between technical and non-technical method steps**. This is because it is always possible to conceive of a method that requires more computational resources (e.g. T 1227/05 - Circuit simulation/Infineon, point 3.2.5). **Considering the relative amount of processing time as an indicator of technicality might render the same method both technical and non-technical depending on the chosen starting point in the prior art**. Although features reducing the required computing resources might involve an inventive step, the assessment of inventive step presupposes that these features contribute to the technical character of the invention.

2.7 The appellant also argued during the written proceedings that since the method was carried out on a wireless device, and since it **caused a change in this device**, i.e. a **necessary change in the computational resources by carrying out the method, a **technical contribution had to be acknowledged****.

2.8 However, **these effects are inherent to any computer-implemented method. Inherent effects are not enough to establish technical character**. A "further" technical effect going beyond the normal effect of implementing something in a computer has to be achieved. (G 3/08 - Programs for computers, point 13.5; T 1755/10 - Software structure/TRILOGY, point 6).

**Features 1.4 and 1.5, however, do not achieve a "further" technical effect** in the context of the claimed method.

2.9 The Board thus agrees with the examining division that **features 1.4 and 1.5 may arise from non-technical considerations**, which according to the COMVIK approach (T 641/00 - Two identities/COMVIK) can be incorporated into the formulation of the technical problem. They need not be part of the solution which has to be examined for inventive step. The

implementation of these features within the system of D4 is obvious not least because it is claimed in functional terms without any technical details.

2.10 Finally, the Board notes that feature 1.3 on the one hand, and **features 1.4 and 1.5, on the other hand, do not produce a synergetic effect**. Accordingly, the claimed method does not involve an inventive step (Article 56 EPC) as it is a **mere juxtaposition of individually obvious features**.

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T 0447/19 () of 11.5.2022

European Case Law Identifier: ECLI:EP:BA:2022:T044719.20220511

## **SYSTEM AND METHOD FOR MANAGING ELECTRONIC ASSETS**

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

Application number: 15180403.6

IPC class: G06Q 10/06, G06Q 50/04, G06F 21/57

Applicant name: BlackBerry Limited

Board: 3.4.03

<https://www.epo.org/law-practice/case-law-appeals/pdf/t190447eu1.pdf>

Claims 1 of the sole request on file reads as follows:

1. A method of controlling the distribution of electronic assets to a test application (116b) in a manufacturing process, said method comprising:

providing a daemon application programming interface (API) (23) on an instance of said test application to provide assets upon detecting a request therefor, and to obtain log data from said instance of said test application during testing;

initiating a daemon (25) in connection with said daemon API to obtain said log data from said daemon API (23) and to provide said assets to said daemon API, said daemon hosting an agent API (21) for communicating with an appliance (18) remote to said instance of said test application;

utilizing said agent API to obtain a batch comprising a plurality of assets and to provide one or more log reports containing said log data separately from said instance of said test application; and

said daemon: caching said assets to provide a quantity of said assets to said daemon API upon request therefrom to enable said daemon API to provide said assets to said instance of said test application thereby avoiding session establishment between said instance of said test application and said appliance for obtaining said electronic assets; and maintaining a record of assets not used when said instance of said test application terminates for a next instance of the test application.

## 1. The claimed invention

1.1 The invention relates to a method for the distribution of electronic assets to a test application in a manufacturing process.

In distributed manufacturing, devices are manufactured at one or more manufacturing sites, often located remotely from the central producer. In such a situation there is a need for the central producer to monitor and control the devices produced remotely in order to avoid fraud by local manufacturing (sub)contractors.

1.2 A common practice is that in order to be functional each device produced has to be provided with an electronic asset, such as a cryptographic key, a serial number or a specific feature. These electronic assets are distributed from the central producer to the remote manufacturers upon request.

Electronic assets are thus transmitted from a controller of the central producer to a local server at each remote manufacturer ("appliance" in the terminology of the application). These assets are then distributed by the appliance to test applications (testers) which test the produced devices and also insert the assets into them (see Figure 1 of the published application). Each test application generates log data recording the assets inserted into the tested devices. An agent, as part of each test application, manages the assets for the test application (see e.g. Figure 6A of the published application).

1.3 The invention relates to the management of the asset distribution and usage at the manufacturer's site. The **agent is executed as a separate daemon process, independent from the corresponding test application.** In this way the agent takes over the communication with the appliance and the request/receipt of electronic assets for the corresponding test application. The assets are cached at the daemon and transmitted to the test application as needed. At the same time, the agent at the daemon receives the asset insertion log data from the test application and, comparing them with the assets recorded in the daemon's cache, can monitor their usage. In case the instance of the test application terminates, the unused assets remaining at the daemon's cache can be provided to a subsequent instance of the test application.

1.4 With this implementation, the **appliance does not need to establish connection with the test application every time the application needs assets for insertion into the device, as this task is taken over by the daemon.** The appliance does not need to monitor the usage of the assets for each test application, either, as this monitoring is also taken over by the daemon. Moreover, assets left at the daemon's cache at the termination of the test application are not

lost but can be used by a subsequent instance of the test application (see Figure 6B of the published application).

### 3. Inventive step (Article 56 EPC)

3.1 It is common ground that document D1 represents the closest prior art.

According to the **appellant, claim 1 differs from D1** in that (numbering by the board in line with the impugned decision):

(a) the agent software program is executed as a daemon process separately from the test application and comprises an agent API for communicating with the appliance, and

(b) the daemon maintains a record of assets not used when the instance of the test application terminates for a next instance of the test application.

These distinguishing features were also identified by the examining division, although the division interpreted feature (b) differently, in that it was not the daemon which maintained the assets for the next instance of the test application but simply "assets not used ... are maintained ..." (see the middle of page 6 of the impugned decision). Since the **board agrees with the appellant's interpretation of feature (b), it also adopted the appellant's definition of the distinguishing features** (see page 3 of the statement of the grounds of the appeal).

3.2 According to the appellant, these two **distinguishing features combine to provide the technical effect of the daemon taking over the management of assets, reducing thus the load of the server.** Hence, the **objective technical problem** the skilled person starting from D1 would be faced with was **how to minimise the overhead of the server 18 when dealing with equipment 20** (ibid., page 5).

3.2.1 As the appellant further explained during the oral proceedings, the **daemon was monitoring the use of the cached assets by the test application.** Receiving the log data from the test application regarding the assets inserted into the devices, the daemon was monitoring the use of the cached assets (see also Figure 6B of the published application). In D1 it was the controller of the producer which was receiving all the log data from the key agent and was monitoring which keys (assets) were inserted into the devices, whether there were any unused keys left, etc. (see e.g. Figures 1 and 4 of D1). Hence, **by having this monitoring performed by the daemon, the overhead of the server was indeed minimised.**

3.3 **The board accepts the appellant's formulation of the objective technical problem.**

In the decision under appeal, the examining division considered that the two identified distinguishing features did not combine to produce a synergistic technical effect and assessed them separately. However, since the **board does not accept the division's interpretation of the second distinguishing feature, it does not follow its formulation of the technical problem, either.** Since **both distinguishing features (a) and (b) relate to the daemon,** and the appellant's formulation of **the objective technical problem is considered plausible,** the board decided to follow the appellant in this respect.

3.4 The examining division referred also to D3. D3 describes a network in which a series of client applications 120 are connected to a directory server 110 (see Figure 1). Normally such client applications access the directory server by establishing a direct connection through a binding operation, which initiates a protocol session between the application and the server, allows authentication of the client to the sever, etc. (see paragraph [0009]).

A problem in such a network architecture is that each application needs to establish a direct connection to the server before it can request any information from it. The server needs to establish separate connections (sessions) to each application for any exchange of information to take place. This increases the load on the server affecting its performance (see paragraph [0010]).

D3 solves this problem by installing a Light Directory Access Protocol (LDAP) caching daemon 210 between the applications and the server (see Figure 2). The daemon obtains data from the server and stores (caches) them in its data cache so that it can directly provide them to the requesting applications without any need for the applications to connect to the server. At the same time, the daemon connects to the directory server and retrieves any information requested by an application but not stored in its cache. In this way, the server has to manage only one individual connection (to the daemon) and can perform its main task of information retrieval more efficiently (see paragraphs [0023] to [0027]).

3.4.1 The appellant pointed out that in D3 there was no asset distribution. The daemon cached LDAP server information, which was accessed by the application(s). **There were no log data regarding the use of this cached information by the applications nor any monitoring by the daemon of the use/access of the cached information by the applications.**

3.4.2 The board agrees with the appellant regarding this interpretation of D3. It notes, however, that the aspect of asset distribution and management is disclosed in D1. The examining division referred to D3 as an example of a "modular implementation" which would incite the skilled person to locate a part of the operations (processes) of the manufacturing line equipment (20) in D1, and specifically the key agent (21) at a separate daemon in the same way as in the claimed invention (see Figure 1 of D1).

3.5 Regarding the key agent (21) in D1, the board notes that it operates independently from the manufacturing equipment (20) (corresponding to the claimed test application). D1 states for example that the key agent requests and receives keys from the server (corresponding to the claimed appliance) based on predetermined threshold levels and thus independently from the insertion of the keys into the devices by the manufacturing equipment (see for example paragraphs [0043] and [0044]). Hence, there is no need for the manufacturing line equipment to connect constantly to the server and request keys. This is comparable to the function of the daemon of the application (see e.g. paragraphs [0104] and [0105] of the application as published).

In this respect, the **implementation of the key agent (21) within a separate daemon process would not have changed anything since the key agent (21) already manages the**



**communication with the server, the request/receipt of the keys (assets) and their distribution to the manufacturing equipment.**

3.5.1 In the light of these considerations the **board takes the view that the skilled person wishing to reduce the overhead of the server in D1 would not have been incited to locate the key agent in a separate daemon process as this would have not reduced the load to the server.**

3.6 Regarding the log data, in D1 there is a first log ("key\_to\_server" log) generated at the producer when keys are transmitted to the server (18) of the manufacturer. A second log ("key\_to\_agent" log) is generated when keys are transmitted from the server (18) to the key agent (21) and a third log ("key\_injection" log) is generated by the manufacturing equipment (20) as keys are inserted into the devices (see Figure 4). The "key\_injection" log is transmitted to the server through the key agent, which concatenates it with the "key\_to\_agent" log to generate a "Log Report R". This report is transmitted to the controller of the producer which, comparing it with the "key\_to\_server" log, evaluates the use of the distributed keys (see also paragraphs [0056] to [0063]). There is no indication in D1 that the key agent (21) is in any way involved in the monitoring of the key distribution and usage, other than transmitting the "key\_injection" log generated by the manufacturing equipment to the server.

3.7 The examining division considered that executing the key agent (21) as a separate background daemon process would have been an obvious choice for the skilled person which would be aware of the advantages of such a modular implementation based only on their common general knowledge. Moreover, such an a implementation would also have been obvious in view of the teaching of D3 (see first two paragraphs on page 7 of the impugned decision).

3.7.1 As explained previously, **the board does not agree with the examining division's separate assessment of the distinguishing features or its formulation of the objective technical problem.**

Even if this argument were followed and it were to be accepted that moving the key agent (21) of the manufacturing equipment (see Figure 1 of D1) to a separate daemon process would have been obvious to the skilled person, the **board notes that there would still be feature (b) missing from such an implementation to arrive at the claimed invention.**

In the claimed invention it is the daemon which, using the log data received from the test application, maintains a record of the unused assets remaining in its cache. The key agent (21) in D1 does not do anything similar. As explained in point 3.6 above, the monitoring of the keys (assets) and their usage in D1 is performed by the controller of the producer and not by the key agent. **Implementing the key agent in a separate daemon process would not change this.** The log data would still be sent by the manufacturing equipment (20) to the server (18) through the key agent (21). The evaluation and monitoring of the key usage would still be done by the controller of the producer based on the received log report "R".

Since according to the method of D1 the evaluation and monitoring of key usage based on the log data are effected at the producer and not at the server of the manufacturer, **the skilled**



**person wishing to reduce the load to the server would not have any reason to move this functionality from the producer to the key agent. They would rather seek functionalities that could be moved from the server of the manufacturer to the key agent.**

Hence, there is **no incentive** in D1 for the skilled person to introduce any key usage monitoring functionality at the key agent **without hindsight**. D3, which does not mention any keys/assets or any monitoring of the usage/access of the data cached at the daemon by the applications would not provide any such incentive, either.

3.8 The board's conclusion is, therefore, that the subject-matter of claim 1 involves an inventive step within the meaning of Article 56 EPC.

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T 0677/20 (E-book page turn/MICROSOFT) of 18.2.2022

European Case Law Identifier: ECLI:EP:BA:2022:T067720.20220218

## **VIRTUAL PAGE TURN**

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

Application number: 09837802.9

IPC class: G06F 3/048, G06F 3/041, G06F 3/14

Applicant name: Microsoft Technology Licensing, LLC

Board: 3.5.05

<https://www.epo.org/law-practice/case-law-appeals/pdf/t200677eu1.pdf>

Claim 1 according to the main request reads as follows:

"A digital reading device (10, 12), comprising:

a touch display (26);

a logic subsystem (22, 36) operatively coupled to the touch display (26); and

a data-holding subsystem (24, 38) holding instructions executable by the logic subsystem (22, 36) to:display a front side (247) of a page (48) on the touch display (26);recognize a page-turning gesture directed to the turning page (48) on the touch display (26); anddisplay a virtual page turn that actively follows the page-turning gesture, the virtual page turn curling a lifted portion of the turning page (48) to progressively reveal a back side (248) of the turning page (48) while progressively revealing a front side (249) of a subsequent page (58), the lifted portion of the turning page (48) having an increased transparency that allows visual information (60) from the back side (248) of the turning page (48) to be viewed through the front side (247) of the lifted portion of the turning page (48)."

1. Main request- Article 56 EPC

1.1 It was common ground in the oral proceedings that D1 represented the closest prior art to the subject-matter of claim 1 and that the difference between claim 1 and D1 was feature A: "the lifted portion of the turning page has an increased transparency that allows visual information from the back side of the turning page to be viewed through the front side of the lifted portion of the turning page". Figure 4 of D1 showed an opaque full page, i.e. both the portion remaining flat and the portion being lifted were opaque.

1.2 The appellant argued that feature A would help the user search for passages in the e-book by enabling them to see through the lifted portion of the content of the back side of a page. The **board is not convinced by this argument.** The visual information presented to the user by feature A is part of the content of a book page but seen in an inverted view. **If the page contains text, the user is not able to read an intelligible text from this view. Even an illustration in an inverted view may be difficult for the reader to identify. Therefore, in the board's view and contrary to what the appellant has argued, the user searching for a passage of text or an illustration by flicking through pages of an e-book would definitely not benefit from the visual information provided by feature A. This information would not help accelerate the user's search and is thus not to be considered as assisting the user in managing a technical task,** as was the case in T0643/00 mentioned by the appellant, or as improving the readability of a text, as was the case in T0049/04 mentioned by the appellant. Moreover, as shown by Figure 4 (see at time t1) of the current application, the visual information given by the lifted portion of a revealed page (248 in Figure 4) provides the user with much more relevant and readable information about the next page 248 than the inverted view 60 resulting from feature A.

The **board also disagrees with the appellant that the visual information of feature A is related to an internal state,** dynamically changing and automatically detected, prevailing in a technical system, and that its presentation enables the user to properly operate this technical system and prompts the user to interact with the system, for example to avoid technical malfunctions. **The visual information of feature A is not related to an internal state of the e-book reading device itself but to a state of progress of an interactive simulation of an e-book running on the e-book reading device.** Although this state of progress is dynamically changing upon actions of the user, it relates to an output of a program running on the e-book reading device and not to the internal functioning of the e-book reading device. Moreover, the **visual information of feature A is not information which is not predetermined and automatically detected in the e-book reading device but which is presented in response to an action of the user and which is determined by this action.** Furthermore, the board does not see any technical malfunction of the e-book reading device that the user could avoid by using the visual information of feature A. Turning too many pages at once or failing to turn a page when turning a page is desired, as mentioned by the appellant, are technical malfunctions of the e-book simulation program which the user cannot avoid by any action.

However, **the appellant plausibly argued that a technical effect of this distinguishing feature was to provide a more realistic digital reading device while still maintaining readability.** According to it, transparency as defined by feature A would provide the user with a realistic reading experience. It was common ground in the oral proceedings before the board that the

objective technical problem could be formulated as how to **provide** the e-book system of D1 with **a more realistic simulation**.

1.3 As acknowledged by the appellant in its letter of 27 January 2014 in the first-instance proceedings, the skilled person is well aware that some paper books have pages made of thin paper sheets with a certain degree of "see through" capability. When the user progressively lifts a page of such a book by its corner, the incident ambient light behind the lifted portion progressively increases, thus enabling the user to see the inverted picture, text and graphics printed on the back side of the paper sheet constituting the page. This common knowledge is illustrated by D6 (see the paragraph "Opaque Offset"). The skilled person would thus implement in the simulation of the page turning of the e-book reading device of D1 an interactive simulation of the page turning of such a real paper book without the exercise of inventive step.

For these reasons, the board holds that the subject-matter of claim 1 **does not involve an inventive step (Article 56 EPC) having regard to the disclosure of D1 and the common general knowledge as illustrated by D6.**

...

1.4 Furthermore, the **skilled person looking to achieve a more realistic simulation would also consult document D5, which also deals with e-books.** D5 discloses in the last sentence of page 80 that the pages of an e-book may be slightly transparent. Therefore, the **skilled person would consider implementing in the e-book of D1 a simulation of slightly transparent pages as disclosed in D5, which, when lifted, allows visual information from the back side of the turning page to be viewed through the front side of the lifted portion of the turning page.** In addition, the skilled person would implement increased transparency of the lifted portion of such a page to simulate the well-known characteristics of a thin paper becoming more and more transparent when the incident light increases.

For these reasons, the board holds that the subject-matter of claim 1 **also does not involve an inventive step (Article 56) having regard to D1 in combination with D5.**

1.5 The appellant argued that D6, although teaching that thin paper can have "see through" quality enabling a reader to see type and graphics printed on the other side of the sheet, did not disclose that the portion of the real sheet remaining flat on the subsequent page was opaque. In support of its arguments, the appellant provided Figures 1 and 2 in its response to the board's communication. According to the appellant, Figures 1 and 2 showed two possible lighting conditions using thin paper for a real book where in both cases, the flat portion of a page was not opaque. The **board is not convinced by this argument and considers it well known in the art that the transparency of a paper sheet having "see through" property depends on the intensity of the light seen through the paper sheet and the degree of "see through" capability of the paper chosen.** When a portion of a paper sheet remains flat on the subsequent page, an appropriate choice of the "see through" capability of the paper can lead to having the portion remaining opaque.

The appellant further argued that the feature of having a combination of opaque and transparent parts in the same e-page was not disclosed in D5, such that a combination of D1 with D5 would not lead to the subject-matter of claim 1. However, the **board holds that the skilled person would, based on their common general knowledge of "see through" paper (see above), simulate the property that the portion of page remaining flat on the subsequent page be opaque to maintain the readability of that portion.**

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