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**Datasheet for the decision  
of 25 October 2021**

**Case Number:** T 2074/17 - 3.5.06

**Application Number:** 11166998.2

**Publication Number:** 2388698

**IPC:** G06F9/445

**Language of the proceedings:** EN

**Title of invention:**

Portable that downloads software for provision to an embedded system

**Applicant:**

BlackBerry Limited

**Headword:**

Embedded software update/BLACKBERRY

**Relevant legal provisions:**

EPC Art. 123(2), 56  
RPBA 2020 Art. 13(1)

**Keyword:**

Amendments - added subject-matter (no)  
Inventive step - (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
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Case Number: T 2074/17 - 3.5.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 25 October 2021**

**Appellant:** BlackBerry Limited  
(Applicant) 2200 University Avenue East  
Waterloo, Ontario N2K 0A7 (CA)

**Representative:** Murgitroyd & Company  
Murgitroyd House  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 3 March 2017  
refusing European patent application No.  
11166998.2 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** M. Müller  
**Members:** G. Zucka  
B. Müller

## Summary of Facts and Submissions

- I. The appeal is against the decision by the examining division, dispatched with reasons on 3 March 2017, to refuse European patent application 11166998.2, on the basis that the main and the auxiliary request did not satisfy the requirements of Article 56 EPC, and the auxiliary request did not satisfy the requirements of Article 123(2) EPC.
- II. The following documents were cited during the first instance procedure:
- D1: WO 2005/039161 A1;  
D2: US 2004/093597 A1;  
D3: US 2008/092227 A1;  
D4: Anonymous: "System and method for upgrading firmware in a vehicle", ip.com Journal, ip.com inc., West Henrietta, NY, US, 3 March 2003, XP013005813, ISSN: 1533-0001.
- III. A notice of appeal was received on 11 May 2017, the appeal fee being paid on the same day. A statement of grounds of appeal was received on 7 July 2017.
- IV. The appellant requested
- that the decision of the examining division to refuse the application be set aside and a patent be granted on the basis of claims 1 to 12, labelled "Main Request Claims", re-filed with the grounds of appeal;
  - as auxiliary request, that the decision of the examining division to refuse the application be set aside and a patent be granted on the basis of claims 1

to 12, labelled "Auxiliary Request Claims", filed with the grounds of appeal;

- conditionally, oral proceedings.

- V. The board issued a summons to oral proceedings. In an annex to the summons, the board set out its preliminary, negative opinion on the appeal.
- VI. On 13 August 2021, the appellant filed claims - 1-11, 1-10, 1-9 and 1-9, respectively - for a new main and 3 auxiliary requests, replacing all previous requests.
- VII. The appellant requests that the decision under appeal be set aside and a European patent be granted on the basis of the claims of the main request or auxiliary requests 1 to 3, all filed with the letter dated 13 August 2021.
- VIII. Independent claim 1 of the main request reads as follows:

"A system that provides embedded software to an embedded system comprising:

a portable device (110) having a portable device application (112) programmed to provide an embedded software component (140) to the embedded system, wherein the portable device (110) obtains identification information (114) of the embedded system (120);

a communication link (130) connecting the portable device (110) to the embedded system; and

an embedded software manager (122) resident to the embedded system for accessing the embedded software component (140) through the communication link (130);

wherein the embedded software component (140) is selected by the portable device (110) from an application store (220) based on the identification information (114) of the embedded system (120), and

wherein the application store (220) comprises an on-line site that supports selection and downloading of application software for the portable device."

IX. Independent claim 2 of the main request reads as follows:

"A method that provides embedded software to an embedded system comprising:

storing (410) on a portable device (110) an embedded software component (140);

connecting (412) the portable device (110) to the embedded system; and transferring (414), to the embedded system, the embedded software component (140) that is stored on the portable device (110) responsive to an [sic] identifying indicia;

wherein the embedded software component (140) is selected by the portable device from an application store (220) based on the identifying indicia,

wherein the application store (220) comprises an on-line site that supports selection and downloading of application software for the portable device (110), and

wherein the embedded software component (140) is executable with a processor in the embedded system."

X. Independent claim 2 of auxiliary request 1 reads as follows:

"A method that provides embedded software to an embedded system comprising:

storing (410) on a portable device (110) an embedded software component (140);

connecting (412) the portable device (110) to the embedded system;

transferring (414), to the embedded system, the embedded software component (140) that is stored on the portable device (110) responsive to an [sic] identifying indicia;

wherein the embedded software component (140) is contained in a portable device application (112) that is selected by the portable device (110) from an application store (220) based on the identifying indicia,

wherein the application store (220) comprises an on-line site that supports selection and downloading of application software for the portable device (110),

wherein the embedded software component (140) is executable with a processor (128) in the embedded system, and

wherein the selected portable device application (112) includes, as data, processor executable instructions that are not executable on the portable device (110)."

XI. Independent claim 2 of auxiliary request 2 reads as follows:

"A method that provides embedded software to an embedded system comprising:

obtaining (404), by a portable device (110) from the embedded system, identifying indicia;

disconnecting (406) the portable device (110) from the embedded system after obtaining the identifying indicia;

obtaining (404), by the portable device (110), an embedded software component (140) after disconnecting the portable device (110) from the embedded system;

storing (410) on the portable device (110), the embedded software component (140);

reconnecting (412) the portable device (110) to the embedded system;

transferring (414), to the embedded system, the embedded software component (140) that is stored on the portable device (110) responsive to the identifying indicia;

wherein the embedded software component (140) is contained in a portable device application (112) that is selected by the portable device (110) from an application store (220) based on the identifying indicia,

wherein the application store (220) comprises an on-line site that supports selection and downloading of application software for the portable device (110),

wherein the embedded software component (140) is executable with a processor (128) in the embedded system, and

wherein the selected portable device application (112) includes, as data, processor executable instructions that are not executable on the portable device (110)."

XII. Independent claim 2 of auxiliary request 3 reads as follows:

"A method that provides embedded software to an embedded system comprising:

obtaining (404), by a portable device (110) from the embedded system, identifying indicia;

disconnecting (406) the portable device (110) from the embedded system after obtaining the identifying indicia;

obtaining (404), by the portable device (110), an embedded software component (140) after disconnecting the portable device (110) from the embedded system;

storing (410) on the portable device (110), the embedded software component (140);

validating integrity of the embedded software component (140) via a cryptographic validation controller resident or interfaced to the portable device (110);

reconnecting (412) the portable device (110) to the embedded system;

transferring (414), to the embedded system, the embedded software component (140) that is stored on the portable device (110) responsive to the identifying indicia;

wherein the embedded software component (140) is contained in a portable device application (112) that is selected by the portable device (110) from an application store (220) based on the identifying indicia,

wherein the application store (220) comprises an on-line site that supports selection and downloading of application software for the portable device (110),

wherein the embedded software component (140) is executable with a processor (128) in the embedded system, and

wherein the selected portable device application (112) includes, as data, processor executable instructions that are not executable on the portable device (110)."

XIII. At the end of the oral proceedings, the chairman announced the board's decision.

## **Reasons for the Decision**

### 1. *The admissibility of the appeal*

The appeal is admissible.

### 2. *The invention*

The application relates to a system that provides embedded software to an embedded system.

The problem to be solved (see middle of page 2 of the grounds of appeal, with reference to paragraphs 4 and 5 of the application) is (said to be) to provide improved updating of the embedded system via a portable device.

The solution (see middle of page 2 of the grounds of appeal) is that the portable device obtains identification information of the embedded system, and the embedded software component is selected by the portable device from an application store based on the identification information of the embedded system.

### 3. *Article 123(2) EPC*

The board judges that Article 123(2) EPC has not been infringed.

According to the decision under appeal (point 14), claim 1 of the then sole auxiliary request infringed Article 123(2) EPC for the following reasons (the text in italics is quoted from the decision):

#### 3.1 *The original application does not directly and unambiguously disclose that the portable device*

*application is selected by the portable device from an application store.*

The board considers that par. [0022] of the original description does disclose this combination of features.

Indeed, the first sentences of that paragraph state that **"An application store 220 may comprise an on-line site that supports the selection and downloading of application software for the portable device 110. When connected to the application store 220, embedded software components 140 may be automatically selected through the identification information 114 of the embedded system 120. The embedded software component 140 may be contained (e.g. encapsulated in, appended to, etc.) in a selected portable device application 112 as data."** (Emphasis added.)

According to the board, this implies the disclosure of a portable device application being selected by the portable device from an application store.

- 3.2 *The same amendment leaves out the limitation that the embedded software component is contained in the selected portable device application **as data** (intermediate generalisation).*

This limitation is now present in claims 1 and 2 of the auxiliary requests.

- 3.3 *The original application does not directly and unambiguously disclose that the selected portable device application belongs to the category of portable device applications which include processor executable*

*instructions that are not executable by the processor on the portable device.*

According to the board, a direct and unambiguous disclosure is given by the statement in the original description, page 6, lines 16 to 18, that "Some portable device applications 112 may include processor executable instructions that are not executable by the processor 118 on the portable device 110".

4. *Main request - inventive step; Article 56 EPC*

4.1 The board holds that D1 is not a particularly suitable starting point for an inventive step analysis, because as pointed out by the appellant (grounds of appeal, top of page 2), the system of D1 has only two components, the device to be upgraded and the upgrade server, and it does not require an additional intermediary, as the device in D1 already has appropriate communication capability.

Instead, the board considers D4 to be a more suitable starting point, given that it discloses all of the main elements which are also present in the method according to claim 2, viz.:

- an embedded system
- a portable device programmed to provide software to the embedded system
- a communication link connecting the portable device to the embedded system
- an on-line site storing software for the embedded system.

4.2 More precisely, D4 discloses a method that provides embedded software (firmware) to an embedded system (vehicle interior system) comprising:

receiving through a portable device (cell phone) an embedded software component;

connecting the portable device to the embedded system (via a Bluetooth link); and

transferring, to the embedded system, the embedded software component via the portable device;

wherein the embedded software component is selected from an on-line site ("Internet") storing application software, and

wherein the embedded software component (being firmware) is executable with a processor in the embedded system

4.3 D4 does not disclose:

(a) the embedded software component being stored on the portable device;

(b) the transfer being in response to identifying indicia;

(c) the embedded software component being selected by the portable device from the application store based on the identifying indicia.

4.4 In the words of the appellant, these distinguishing features provide improved updating of the embedded system via the portable device. In particular, the two-step process of the application, where the embedded software is first downloaded on the portable device, and then transferred to the embedded system, among others does not require a constant connection between the portable device and the embedded system during the upgrade process. In this way it alleviates the problems caused by the battery of the portable device running

low or the Internet connection failing while the upgrade is taking place.

- 4.5 The board holds that the skilled person will obviously wish to improve updating of the embedded system via the portable device. In particular, the skilled person would very soon become aware that the Internet connection can be interrupted or the battery of the portable device may run low, thus interrupting the upgrade process.

The board also observes that the two necessary connections may not exist at the same time. For example, if there is no Internet connection in the garage where the car (i.e. the embedded system) is parked, the user cannot apply the solution of D4 without moving the car. For this reason, too, the skilled person would be asked to modify the solution of D4 in such a way that a simultaneous Internet and Bluetooth connection is not required.

Already before the application date, a tendency existed to provide cell phones, in particular smartphones with increasing functionality to assist their users with various tasks. In that context, it would be natural for the skilled person to achieve the desired improvement by increasing the functionality of the cell phone and allowing it to be in control of the updating process.

- 4.6 The portable device should obviously select the correct embedded software component from the application store, which means that it should obtain correct identification information of the embedded system, either manually or from the system itself (features (b) and (c)).

- 4.7 For a portable device that is in control of the upgrade process the most straightforward manner to protect against Internet or power interruptions is to buffer, i.e. store, the downloaded software (feature (a)) before it is transferred to the embedded system.
- 4.8 The skilled person would thus arrive at the subject-matter of claim 1 without the exercise of any inventive activity.
- 4.9 During the oral proceedings, the appellant argued that in the claimed system the embedded software component was downloaded from an application store, which supports selection and downloading of application software for the portable device.

According to the board, this feature imposes no technical limitation on the claimed system. From a technical point of view, it makes no difference for either the portable device or the embedded system that the embedded software component originates from an application store with such a feature. When asked by the board during the oral proceedings, the appellant also could not explain in what exactly the technical limitation would consist.

- 4.10 The board therefore holds that the subject-matter of claim 2 of the main request is not inventive (Article 56 EPC).
- 4.11 The board observes that in the present case it chose to assess inventive step for claim 2 rather than claim 1, because as it indicated during the oral proceedings, it had doubts whether the wording of claim 1, contrary to that of claim 2, implies that the software is stored on

the portable device, which was a central point in the appellant's reasoning.

5. *Auxiliary request 1 - inventive step; Article 56 EPC*

In D4, the software selected by the portable device from the application store is a firmware update, i.e. it is or contains new firmware for the embedded device. Such firmware can only be executed by the embedded device; it consists of processor executable instructions that are not executable on the portable device. But even if they were, for instance by way of emulation, the board considers that the nature of the data to be transferred is immaterial for solving the objective technical problem, namely to make its transfer from the application store to the embedded system more robust against battery or connection outage (see points 4.4 and 4.5 above).

The feature added in claim 2 of auxiliary request 1 therefore does not render that subject-matter inventive, and claim 2 and, for similar reasons, claims 1 and 12 of auxiliary request 1 consequently also do not satisfy the requirement of Article 56 EPC.

6. *Auxiliary request 2- inventive step; Article 56 EPC*

6.1 The amendments introduced by auxiliary request 2 constitute a genuine attempt to deal with the objections raised by the board in its summons. The request is therefore admitted into the proceedings in the exercise of the board's discretion under Article 13 RPBA 2020.

6.2 As was already set out under point 4.7 above, the skilled person starting from the disclosure of D4 would arrive at a two-step process where the downloaded

software is first buffered in the portable device, to protect against power and Internet interruptions.

Bringing this to its logical conclusion, the skilled person realises that in such a setup there is no need to maintain a connection between the portable device and the embedded system while the download of the software takes place, and actually the intended effect of the two-step process is maximised if both are separated during this time.

The skilled person would therefore make arrangements such that the portable device is disconnected from the embedded system after obtaining the identification information, that it then obtains and stores the software, and that it then reconnects to the embedded system and transfers the downloaded software to the embedded system.

In so doing, the skilled person would arrive at the subject-matter of claim 2 of auxiliary request 2, which hence also lacks an inventive step (Article 56 EPC).

7. *Auxiliary request 3 - admittance*

Claim 2 of auxiliary request 3 contains the additional feature that integrity of the embedded software component is validated via a cryptographic validation controller resident or interfaced with the portable device.

Given that cryptographic validation of software components is a standard practice in the art, the board considers that this amendment does not clearly go in the direction of remedying the raised inventive step objection. It was also not contained in the original

claims, is not disclosed in the documents cited in the search report, and was not discussed during the first-instance proceedings. Examining auxiliary request 3 would therefore also be detrimental to procedural economy.

For these reasons, pursuant to Article 13(2) and (1) RPBA 2020, the board does not admit auxiliary request 3 into the proceedings.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

M. Müller

Decision electronically authenticated