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**Datasheet for the decision  
of 13 February 2025**

**Case Number:** T 0045/22 - 3.5.06

**Application Number:** 12857131.2

**Publication Number:** 2791782

**IPC:** G06F7/04, A61B5/00, A61B5/145,  
G06F19/00, H04W4/00, H04W12/04,  
H04W12/06

**Language of the proceedings:** EN

**Title of invention:**

NEAR FIELD TELEMETRY LINK FOR PASSING A SHARED SECRET TO  
ESTABLISH A SECURE RADIO FREQUENCY COMMUNICATION LINK IN A  
PHYSIOLOGICAL CONDITION MONITORING SYSTEM

**Patent Proprietor:**

Becton, Dickinson and Company

**Opponent:**

Abbott Diabetes Care Inc.

**Headword:**

Key generation/BECTON

**Relevant legal provisions:**

EPC Art. 56  
RPBA 2020 Art. 12(6), 13(2)

**Keyword:**

Inventive step - (no)

Late-filed request - should have been submitted in first-  
instance proceedings (yes)

Amendment after summons - exceptional circumstances (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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**Case Number: T 0045/22 - 3.5.06**

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.06**  
**of 13 February 2025**

**Appellant:** Becton, Dickinson and Company  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
19 October 2021 concerning maintenance of the  
European Patent No. 2791782 in amended form.**

**Composition of the Board:**

**Chairman** M. Müller  
**Members:** T. Alecu  
K. Kerber-Zubrzycka

## **Summary of Facts and Submissions**

- I. The appeal lies from the decision of the Opposition Division to maintain the patent in amended form. Both parties appealed.
- II. With the notice of opposition the Appellant-Opponent (henceforth "Opponent") requested revocation of the patent based on Article 100(a), 100(b) and 100(c) EPC, and filed inter alia document  
  
D1: US 2008/0222711 A1.
- III. During the opposition proceedings, the oral proceedings took place on two separate days (23 April 2021 and 13 July 2021), the decision being taken on the second day. In preparation of the second day, with letter dated 11 June 2021, the Appellant-Proprietor (henceforth "Proprietor") stated its requests to be a main request filed on 27 January 2020, 37 auxiliary requests filed on 23 February 2021, and 10 auxiliary requests filed with that letter.
- IV. During the oral proceedings on the second day the Opposition Division found the independent claims 1 of all requests to be in breach of Article 123(2) EPC. The Proprietor then filed one new auxiliary request 48 based on its previous main request, in which it deleted all claims except independent system claim 8 and its dependent claims.
- V. The Opposition Division admitted that request and the Opponent raised various objections in respect of novelty and inventive step, which were either not admitted or not found convincing. In particular the

Opposition Division admitted, but did not find convincing, objections as to novelty and inventive step based on D1 alone. The patent was maintained in amended form according to auxiliary request 48.

- VI. On appeal, the Proprietor first requested that the decision of the Opposition Division be set aside and that the patent be maintained on the basis of a new main request, filed with the statement of grounds of appeal. Alternatively, the Proprietor requested that the patent be maintained in the form maintained by the Opposition Division, i.e. based on what was auxiliary request 48, re-filed as the (at that point, sole) auxiliary request with the statement of grounds of appeal. Yet alternatively, the Proprietor requested that the patent be maintained in a form according to one of second to sixth auxiliary requests as filed with the reply to the appeal of the Opponent.
- VII. During the oral proceedings before the Board, the Proprietor withdrew the main request and filed a new seventh auxiliary request. At the end of the oral proceedings, the Proprietor requested maintenance of the patent on the basis of one of the first to seventh auxiliary requests.
- VIII. The Opponent requested that the decision of the Opposition Division be set aside, and that the patent be revoked. The Opponent also requested that the second to seventh auxiliary request not be admitted.
- IX. Claim 1 of the first auxiliary request defines:

*A wireless physiological condition monitoring system, comprising:*

*a physiological condition sensor (110) adapted to measure physiological condition of a user and transmitting the measured physiological condition data using a secure wireless link based on a secret key; and a physiological condition meter (105) adapted to receive the measured physiological condition data via the secure wireless link based on the secret key and displaying the physiological condition data to the user,*

*wherein, in response to an instruction provided when the physiological condition sensor (110) and the physiological condition meter (105) are in proximity to each other, the secret key is generated and transmitted using another communication link that is different from the secure wireless link.*

X. Claim 1 of the second auxiliary request adds the following to claim 1 of the first auxiliary request:

*wherein the physiological condition meter (105) receives operational information of the physiological condition sensor (110) via the other communication link and determines if the physiological condition meter (105) can transmit the secret key to the physiological condition sensor (110) based on the operational information.*

XI. Claim 1 of the third auxiliary request adds the following to claim 1 of the first auxiliary request:

*wherein the physiological condition meter (105) or the physiological condition sensor (110) receiving the secret key stores the secret key to initiate setup the secure wireless link based on the secret key between the physiological condition meter (105) and the physiological condition sensor (110);*

*wherein the physiological condition meter (105) or the physiological condition sensor (110) receiving the secret key transmits test data;*

*wherein the other one of physiological condition meter (105) or the physiological condition sensor (110) decrypts the test data and determines that the test data was successfully received to determine that the secret key was successfully received by the physiological condition meter (105) or the physiological condition sensor (110) receiving the secret key;*

*wherein the other one of physiological condition meter (105) or the physiological condition sensor (110) transmits an acknowledge message via either the another communication link or the secure wireless link; wherein the physiological condition sensor (110) transmits measurement data to the physiological condition meter (105) via the secure wireless link upon receipt of the acknowledge message; and*

*wherein if the other one of the physiological condition meter (105) and the physiological condition sensor (110) does not determine that the secret key was successfully received by the physiological condition meter (105) or the physiological condition sensor (110) receiving the secret key, the other one of the physiological condition meter (105) and the physiological condition sensor (110) generates and transmits a secret key again until the secret key is successfully determined to be received by the physiological condition meter (105) or the physiological condition sensor (110) receiving the secret key.*

XIII. Claim 1 of the fourth auxiliary request adds the following to claim 1 of the third auxiliary request:

*wherein the test data comprises random data with error check information to determine successful reception and encryption of the random data; or predetermined data that is also stored at the other one of the physiological condition meter (105) and the physiological condition sensor (110).*

- XIII. Claims 1 of the fifth and sixth auxiliary request add the following to claims 1 of the second and third auxiliary request respectively:

*wherein the physiological condition meter includes a switch that a user depresses to pair the physiological condition sensor with the physiological condition meter.*

- XIV. Claim 1 of the seventh auxiliary request adds the following to claim 1 of the first auxiliary request:

*wherein the secret key is generated using a random process, and*

*wherein the physiological condition sensor (110) includes a one-time programmable memory for storing the secret key, and*

*wherein the physiological condition sensor (110) encrypts the measured physiological condition data using the secret key and the physiological condition meter (105) decrypts the received encrypted data using the secret key.*

## **Reasons for the Decision**

### *The patent: brief summary*

1. The patent relates to physiological condition (e.g. glucose level) monitoring, and in particular to a method of connecting a physiological condition sensor to a meter by a secure wireless link. The sensor, when in use, is attached to the user's skin and incorporates a small transmitter which communicates with the meter. In the prior art, according to the patent, the pairing of the transmitter with the meter is performed by entering transmitter information into the meter. This operation needs to be repeated when the transmitter's battery runs out (paragraphs 3 and 4).
  
2. This pairing method is inconvenient for the user, but also insecure, because the information can be seen by a non-authorized person (paragraph 5). The patent addresses both problems by proposing that the two devices exchange this information directly and encrypt it using a shared key. The key can be generated when the two devices come in proximity (e.g. by the meter or the sensor, paragraphs 42 and 45), and shared between the two devices via a short range communication link (e.g. NFC, see paragraph 36). A user may initiate the pairing by pressing a button, or the pairing may be started automatically, e.g. when a coil in the sensor detects the magnetic field from the meter (see paragraph 34).

*D1: US 2008/0222711*

3. This document describes the use of close range communication, such as NFC, to exchange credentials

(e.g. encryption keys) between devices within a trust domain so as to enable secure communication amongst the devices of the trust domain over a different, long-range data link (see e.g. abstract and paragraphs 32 and 39). One of the examples relates to patient monitoring, where ECG sensors pair with an ECG monitor, which further pairs with a PC (paragraphs 87, 88 and 89, and figures 18 and 19).

*First auxiliary request: novelty and inventive step*

4. The Opposition Division found claim 1 of the first auxiliary request to be new and inventive over D1 because, although D1 disclosed key generation and transmission, it neither disclosed (decision, reasons 4.2.2 to 4.2.5) nor rendered obvious (reasons 4.4) the generation of the key at the sensor or at the meter (ECG monitor).

*Alleged differences*

5. The Proprietor argued that D1 also did not disclose that the key is transmitted in response to an *instruction*. In D1 the key was shared upon bringing the ECG sensor and the ECG monitor in close proximity (referred to as "touching", see e.g. page 16 of the reply to the statement of grounds of appeal of the Opponent, dated 12 July 2022). The Proprietor contested the interpretation used by the Opposition Division (decision, reasons 4.2.2) according to which the "touching" could be considered an instruction to begin the pairing within the meaning of the claim (page 17, penultimate paragraph, in that same reply).
- 5.1 The Board agrees with the Opposition Division that proximity detection in D1 produces a signal that falls

within the claimed scope of "*instruction*", and notes that the patent itself teaches that proximity detection may trigger the pairing (see paragraph 34, see claim 5).

6. The Proprietor also disputed that D1 implicitly taught the ECG monitor to display the acquired data (see point 6.3 in its reply dated 12 July 2022). The Board considers that, even if this argument were to succeed, it would be very obvious to equip an ECG *monitor* with a *display* for the data it monitors. So this alleged difference cannot support an inventive step anyway.
7. Therefore, the only difference, if present, that might support the presence of inventive step is the one identified by the Examining Division, i.e. the generation of the key at the sensor or at the meter.

*Claim interpretation: place of key generation*

8. The Opponent argued (see e.g. its statement of grounds of appeal, point 4.2) that the claim did not require the key generation to take place either at the meter or the sensor, but allow it to take place at yet another device. The Opposition Division (decision, reasons 4.2.4 and 4.2.5), construing the claim in the light of the specification, concluded that for the skilled reader it was "*immediately implicit that one of the two devices generates the key*" and that all the claim left open was which one of the two devices generated the key.
9. In the present case, this question may be left open. In the following, the Board assumes, for the sake of argument, the most favourable position for the

Proprietor, i.e. the interpretation adopted by the Opposition Division.

*Key generation: disclosure in D1*

10. The Opponent argued (see e.g. its statement of grounds of appeal, pages 9 and 10) that D1 disclosed the feature that the key was generated at either the meter or the sensor. In particular, paragraph 45 stated: "*a member of the trust domain may generate a new set of credentials triggered by the discovery of the new member in a proximity condition*". This, in the Opponent's view, already disclosed that the ECG monitor, as a member of the trust domain in the example of paragraphs 87 and 88 (figure 18), may generate the key.
11. If that was not accepted, the Opponent further argued (during the oral proceedings before the Board) that the object of D1 was not only secure communication for larger systems, where a CA server could be used (CA standing for certificate authority; see D1, paragraphs 31 and 78 to 80), but also secure communication between two devices only. Paragraph 32 made that clear ("*bring two electronic devices to communicate*"). If, in such a scenario, the key were to be generated dynamically (see paragraph 45), key generation would have to take place on one of the two devices.
  - 11.1 The embodiments of paragraphs 87 to 89, as shown in figures 18 and 19, referred to a patient monitoring computer and to a mainframe computer, the latter generating the credentials. But both were optional. They were both introduced by "may" and depended on the implementation: "[s]uch a system may include a patient monitoring computer" - paragraph 87, and "[d]epending upon the implementation, the hospital mainframe

*computer 220 may send credential information to the patient monitor computer".*

- 11.2 The Proprietor argued (see below) that these "mays" were an artefact of patent drafting, caused by a patent professional which was trying to make features appear optional where they actually are not. The Opponent disagreed. The person skilled in the art would understand that D1 also disclosed embodiments without these two components, i.e. one with just an ECG sensor and an ECG monitor. This was in accordance with paragraph 32. In this embodiment it was a matter of necessity that the key was generated in one of the two devices.
12. The Proprietor disagreed, arguing (see e.g. pages 16 and 17 of its reply dated 12 July 2022) that paragraph 45 introduced an alternative which was detailed in the subsequent paragraphs (as stated in the last sentence of paragraph 45, referring to figures 11 and 12, and especially paragraphs 78 to 80). In this more detailed disclosure, a specific device within the domain was used for credential generation, namely a CA server, and thus neither a meter nor a sensor as claimed. So the mention of dynamic key generation in paragraph 45 was not a separate teaching, but D1 as a whole had to be construed as teaching that dynamic key generation was carried out by the CA server.
- 12.1 In the embodiment of figures 18 and 19, paragraphs 87 to 89, it was explicitly said that the credential information was generated at a hospital mainframe computer, which acted as the CA authority.
- 12.2 Further, the use of the word "may" was only an artefact of patent drafting. The person skilled in the art would not understand the mainframe computer or the patient

monitoring system to be optional. The disclosure of D1 was consistent in that regard. The monitoring method described in paragraph 88 and figure 19 was for a system comprising all four different components and more: hospital mainframe, acting as CA authority, patient monitoring system, ECG monitor and ECG sensor, IV pumps etc. There was no reason for the person skilled in the art to deviate from this architecture.

13. The Board's opinion is as follows.

13.1 The hospital mainframe computer is indeed optional: the expression "*[d]epending on the implementation*" introduces an optional feature and the removal of this component still leaves a fully functional system. However, the Board is in doubt that the person skilled in the art would understand D1 to disclose a system without the patient monitoring system, as it is also used to monitor other medical devices such as the IV pumps.

13.2 Nonetheless, there are scenarios where these other devices may not be needed, especially where ECG is the only signal that needs monitoring, and the person skilled in the art will apply the teachings of D1 to such simpler scenarios as well.

13.3 In such a case, involving just an ECG sensor and an ECG monitor, the alternative of paragraph 45 does lead to key generation in the monitor or in the sensor. Even if a CA authority is implemented, it would have to be implemented in one of the two devices (the more likely place being the ECG monitor as the CA authority could then serve other sensors as well).

14. Thus the Board finds that, even when interpreted in the most favourable manner for the Proprietor (key genera-

tion in the meter or sensor, see point 9 above), and assuming that D1 does not disclose a system with just an ECG sensor and an ECG monitor (point 14.1 above), the only feature that may support an inventive step (point 7 above) is obvious in view of D1, starting from the embodiment of figure 18.

15. Claim 1 of the first auxiliary request lacks inventive step over D1 alone.

*Second to sixth auxiliary request*

16. These requests were not filed in opposition proceedings. They were first filed with the reply to the statement of grounds of appeal.
- 16.1 The Proprietor explained (page 4 of its statement of grounds of appeal; section 8 of the reply to the statement of grounds of appeal of the Opponent) that during the opposition proceedings it had already filed a large number of requests which were meant to respond separately to the "*great number of independent objections*" of the Opponent. The new requests were not filed then so as not to file too many requests.
- 16.2 The Proprietor argued that the requests were based on (a combination of) auxiliary requests already filed during the opposition proceedings, with the further deletion of independent claims, as carried out during the oral proceedings before the Opposition Division for the auxiliary request 48.
- 16.3 So they were a combination of "*technical*" amendments, which were already filed in first instance, and claim deletions to bring the request in line with the request

maintained by the Opposition Division, which do not impact procedural economy.

- 16.4 The Proprietor also argued that these requests were filed as early as possible, with the reply to the appeal of the Opponent. In particular there was no need to file them during the oral proceedings, because the Opposition Division had found auxiliary request 48 to be allowable.
17. The Opponent argued that all these auxiliary requests should have been filed during the opposition proceedings and therefore should not be admitted (Article 12(6) RPBA).
18. All the objections were already raised during opposition. Whether a request should be filed or not at a certain point in time did not depend on the total number of requests. As a matter of principle the Proprietor had to define all its auxiliary requests as early as possible during the opposition proceedings.
- 18.1 Therefore, the requests should have been filed at the latest during the oral proceedings before the opposition division when the auxiliary request 48 was filed. At that point, the Proprietor chose to file just one further request, as indicated in the minutes of the oral proceedings, though it had the opportunity to file more than one. The Proprietor also had reasons to file more, because the inventive step objection was known.
- 18.2 The RPBA did not allow for a change of mind. The parties were bound by their own actions during the first instance. The fact that some of the requests differed from those filed in first instance only by deletions was irrelevant. They were still amendments

and should have been filed during opposition proceedings.

19. The Board notes first that these requests, are, as such, amendments of the Proprietor's appeal case within the meaning of Article 12(4) RPBA: the decision is not based on any one of these requests (Article 12(2) RPBA) nor has any of them been filed before the Opposition Division (so that they have not been "admissibly raised and maintained", pursuant to Article 12(4) RPBA).
20. The Board agrees that a very high number of requests may be detrimental to an efficient procedure, if only because their handling may be tedious. It may therefore be acceptable for a proprietor to file separate requests containing amendments in response to separate objections and to file a new request with some such amendments combined when and if needed.
  - 20.1 However, the situation during the oral proceedings before the Opposition Decision was peculiar. It was evidently necessary for the Proprietor to choose its responses when the Opposition Division found independent claims 1 and 14 of all requests to be in breach of Article 123(2) EPC. And the Proprietor should indeed have filed the present auxiliary requests then.
  - 20.2 First, as it was not at all clear at that point that the Opposition Division would find the new request ("48") allowable, the Proprietor should have been aware of the need to file further fallback positions. Secondly, even if the Proprietor had known (or trusted) that the Opposition Division would have allowed the new request, it should still have filed the requests in view of a likely, or at least possible, appeal by the

Opponent and the strict rules on admittance according to the RPBA.

21. The Board therefore finds that these requests should have been filed before the Opposition Division. The Proprietor has not argued that any circumstances of the appeal case justified their admittance. These requests are not admitted (Article 12(6) RPBA).

*Seventh auxiliary request*

22. This request was filed during oral proceedings before the Board after the Board had come to its conclusion on all previously pending requests. The Proprietor explained that claim 1 of the new request merely combined claim 1 and claim 2 of the first auxiliary request. Dealing with this new request was not detrimental to procedural economy because all objections to the dependent claim 2 were already put forward, so that there were no additional elements to consider.
23. The Board remarks that the admittance of this request is regulated by Article 13(2) RPBA, which requires, as a rule, that exceptional circumstances be present so that the request can be admitted. The Proprietor has not shown that such exceptional circumstances are present, nor does the Board see any; the mere fact that all objections are already known is not exceptional in any way. This request is not admitted (Article 13(2) RPBA).

## Order

### For these reasons it is decided that:

1. The decision of the Opposition Division is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



L. Stridde

Martin Müller

Decision electronically authenticated