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**Datasheet for the decision  
of 11 May 2023**

**Case Number:** T 2330/18 - 3.5.02

**Application Number:** 15739609.4

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**IPC:** B60L11/18, H02J5/00, H02J7/02

**Language of the proceedings:** EN

**Title of invention:**

Operation of an inductive power transfer system

**Applicant:**

Bombardier Primove GmbH

**Relevant legal provisions:**

EPC Art. 111(1), 54, 56, 84  
RPBA 2020 Art. 11

**Keyword:**

Appeal decision - remittal to the department of first instance (no)  
Claims - clarity (no)  
Novelty - main request (no)  
Inventive step - auxiliary request (no)



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Case Number: T 2330/18 - 3.5.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.02**  
**of 11 May 2023**

**Appellant:** Bombardier Primove GmbH  
(Applicant) Eichhornstrasse 3  
10785 Berlin (DE)

**Representative:** Patentanwälte Bressel und Partner mbB  
Potsdamer Platz 10  
10785 Berlin (DE)

**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 3 April 2018  
refusing European patent application No.  
15739609.4 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chair** J. Hoppe  
**Members:** G. Flyng  
C.D. Vassoille

## Summary of Facts and Submissions

- I. The applicant's appeal contests the examining division's decision to refuse the European patent application no. 15 739 609.4.
- II. In the contested decision, the examining division held that the subject matter of the independent claims 1, 10 and 11 as filed on entry into the regional phase before the EPO lacked novelty and, *arguendo*, lacked an inventive step over **document D1 (US 2014/0111019 A1)**.
- III. In the statement setting out the grounds of appeal, the appellant (applicant) requested that the decision under appeal be set aside and a patent be granted with the application documents on which the decision was based (main request) or based on one of auxiliary requests 1 to 5 that were filed with the statement setting out the grounds of appeal in the order of their enumeration.
- IV. The Board initially summoned the appellant to attend oral proceedings to be held on 16 September 2022.

In a communication pursuant to Article 15(1) RPBA that was annexed to the summons dated 3 June 2022, the Board expressed their preliminary view that having regard to just document D1, the only prior art cited in the contested decision, the subject-matter of the claims as filed on entry into the regional phase before the EPO (main request) was novel and non-obvious. However the Board observed that **document D2 (WO 2014/064489 A1)** might render the subject-matter of claim 1 of the main request as lacking novelty or inventive step. Document D2 had been cited in the search report and the

facts and submissions of the contested decision, but had not been addressed at all in the decision's reasons. Also, the Board raised a number of objections under Articles 83 and 84 EPC.

- V. With a letter filed on 26 July 2022, following a telephone conversation with the Board Chair, the appellant withdrew their request for oral proceedings and stated their intention to file amended sets of claims for all requests. In response, the Board cancelled the oral proceedings scheduled for 16 September 2022. In a communication dated 4 August 2022 the Board invited the appellant to file amended requests to address the objections under Articles 83 and 84 EPC that were set out in section 3 of the Board's communication pursuant to Article 15(1) RPBA of 3 June 2022.
- VI. On 29 September 2022 the appellant filed claim sets and various description pages according to a new main request and new auxiliary requests 1 and 2 and explained that the main request was provided to address the clarity objections, whereas auxiliary requests 1 and 2 were intended to address all the objections set out in the board's communication of 3 June 2022. Accordingly, the appellant provided inter alia arguments with respect to novelty and inventive step in the light of document D2 for the auxiliary requests.
- VII. The independent method claim 1 of the **main request** reads as follows:

*"1. A method of detecting an arrangement comprising a primary unit (7) of an inductive power transfer system (5), wherein the primary unit (7) comprises a primary winding structure for generating a*

*magnetic or electromagnetic field to be received by a secondary unit (34) of the inductive power transfer system (5) and wherein the method comprises:*

- using a detector device (31) to detect the arrangement, the detector device (31) comprising at least one electrical conductor,*
- determining at least one electrical property of the detector device (31) and generating determination results consisting of a determination result for each of different regions of the arrangement,*
- comparing the determination results with existing information about a signature, which signature is characteristic for the arrangement to be detected, wherein the existing information includes information about expected values for the different regions of the arrangement, thereby generating a comparison result,*
- deciding from the comparison result whether the determination results indicate that the detector device (31) has detected the arrangement as expected, thereby identifying the arrangement comprising the primary unit (7),*

*wherein different types of primary units have different signatures and wherein the arrangement comprising a primary unit (7) of a specific type of primary units, for which specific type of primary units information about its signature exists, is identified by deciding from the comparison result whether the determination results indicate that the detector device (31) has detected the arrangement comprising the primary unit (7) of the specific type of primary units."*

The main request also includes an independent method claim 2, which is directed to a corresponding "method of detecting an arrangement comprising a secondary unit (34)", as well as two independent apparatus claims 10 and 11, each of which is directed to a corresponding "arrangement" comprising a primary or secondary unit, respectively.

VIII. Claim 1 of **auxiliary request 1** differs from claim 1 of the main request in that the following feature is added at the end:

*" , characterized in that at least one deviation between the determination results and the existing information is detected and it is decided based on the at least one deviation detected that the arrangement comprises an additional object (4), which is part of the detected arrangement in addition to the primary unit (7) "*.

Independent method claim 2 and apparatus claims 10 and 11 of auxiliary request 1 are amended accordingly.

IX. Claim 1 of **auxiliary request 2** differs from claim 1 of auxiliary request 1 in that the following feature is added at the end:

*" , and in that a location of the additional object (4) is determined by determining a corresponding one or a corresponding plurality of the different regions of the arrangement for which the determination result(s) deviate(s) from the existing information "*.

Independent method claim 2 and (renumbered) apparatus claims 9 and 10 of auxiliary request 2 are amended accordingly.

- X. The Board summoned the appellant to attend oral proceedings to be held on 11 May 2023.

In a communication pursuant to Article 15(1) RPBA that was annexed to the summons dated 18 January 2023, the Board stated that they understood the appellant's requests from the letter dated 28 September 2022 to be that the decision under appeal be set aside and:

- (a) that the case be remitted to the examining division for further examination on the basis of the main request and auxiliary requests 1 and 2 filed on 29 September 2022;
- (b) as an auxiliary measure, if the Board had identified that the application documents did not satisfy all requirements for remittal, that the appellant be given an opportunity to fulfil these requirements;
- (c) as an auxiliary measure, if the Board decided not to remit the case to the examining division, because the Board would decide on the grant of a patent, that a patent be granted based on one of the auxiliary requests 1 and 2 filed on 29 September 2022 in that order; and
- (d) that oral proceedings be scheduled if the Board decided not to remit the case to the examining division and not to grant a patent based on auxiliary request 1 filed on 29 September 2022.

Furthermore, the Board set out their preliminary observations with respect to the appellant's latest requests. The Board raised objections to the main request for lack of clarity (Article 84 EPC),

non-compliance with Article 123(2) EPC and lack of novelty from document D2 (Article 54 EPC). Furthermore, the Board raised objections to the auxiliary requests 1 and 2 for lack of clarity (Article 84 EPC), non-compliance with Article 123(2) EPC and lack of an inventive step in view of document D2 combined with D1 (Article 56 EPC). The board also set out that it was not inclined to follow the appellant's request for remittal.

- XI. With a letter filed on 28 April 2023 the appellant withdrew their request for oral proceedings and stated that they would not participate in the scheduled oral proceedings on 11 May 2023 without providing further submissions in reaction to the objections set out in the Board's latest communication.
- XII. Oral proceedings were held on 11 May 2023 in the absence of the appellant. The appellant's requests were established as set out above in paragraph X., except for the appellant's request for oral proceedings, which had been withdrawn. The order of this decision was pronounced at the end of the oral proceedings.



## **Reasons for the Decision**

1. The board did not accede the appellant's request for remittal. Rather, the Board exercised their discretion under Article 111(1) EPC and Article 11 RPBA 2020 not to remit the main request, auxiliary request 1 and 2 to the examining division for further prosecution.
- 1.1 According to Article 11 RPBA, the Board shall not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so. In this regard it needs to be noted that there is no absolute right to have every issue decided upon at two instances (see Case Law of the Boards of Appeal, 10th edition, V.A.9.2.1). The appropriateness of a remittal is decided by the Board on the merits of the particular case. The criteria which can be taken into account when deciding on a remittal include the general interest that proceedings are brought to a close within an appropriate period of time and whether or not there has been comprehensive assessment of the case during the proceedings. According to established case law, the boards should not normally remit a case if they can decide all the issues without undue burden (see Case Law of the Boards of Appeal, 10th edition, V.A.9.1.2). Also according to the explanatory remarks on Article 11 RPBA 2020 Supplementary publication 2, OJ 2020), the aim of the new provision is to reduce the likelihood of a "pingpong" effect between the boards and the departments of first instance and a consequent undue prolongation of the entire proceedings before the EPO.

When exercising their discretion under Article 111 EPC, the boards should take account of this aim.

- 1.2 In the case on file, it can be established without undue burden that the main request and auxiliary requests 1 and 2 do not fulfill the requirements of the EPC as the assessment to be carried out is not complex. Moreover, in their communications, the board has provided a comprehensive assessment of the relevant requirements of the EPC with respect to the requests on file. In particular in the communication of 18 January 2023 a detailed analysis of the main request and auxiliary requests 1 and 2 has been provided inter alia in view of Articles 84 and 123(2) EPC, as well as Article 54 EPC (main request) and Article 56 EPC (auxiliary requests) in the light of D2. In this communication the board also informed the appellant that it was not inclined to remit the case to the examining division for further prosecution. Thus, even though document D2 was not addressed in the reasons of the impugned decision, the case was assessed comprehensively - also in the light of D2 - during the appeal proceedings in the board's communications and the appellant's submissions provided with letter dated 28 September 2022. In this letter, the appellant explicitly also addressed the Board's objections, as raised in the communication of 3 June 2022 under Article 54 and 56 EPC based on D2, and submitted auxiliary requests 1 and 2 to overcome these objections. In view of these circumstances, no special reason for remitting the case for further prosecution according to Article 11 RPBA 2020 is apparent.

- 1.3 With letter dated 28 September 2022, the appellant requested an opportunity to fulfill all requirements for remittal if the board intended to decide not to

remit the case. Afterwards, in the communication dated 18 January 2023, the Board informed the appellant that they were inclined not to remit the case to the examining division for further examination. The appellant however refrained from providing further submissions in reaction to the Board's reasoning and also decided not to attend the oral proceedings. As there is no legal basis for giving the appellant a further opportunity to address the Board's objections, the appellant's request in this respect cannot be acceded to.

- 1.4 As set out in the communication of 18 January 2023, claim 1 of the main request and claim 1 of auxiliary requests 1 and 2 are not clear within the meaning of Article 84 EPC at least for the reasons that the two different expressions "the arrangement" (for example in claim 1, line 10 and 14 of the main request) and "the arrangement to be detected" (for example in claim 1, line 12 of the main request) refer to the same arrangement to be detected. The inconsistent use of different expressions for the same entity causes a lack of clarity.
  
- 1.5 According to the appellant in the letter dated 28 September 2022 (paragraph spanning pages 3 and 4), the "arrangement to be detected" in claims 10 and 11 could be the arrangement that is actually detected or one of several possible arrangements that could be detected". This does not however solve the problem of two expressions used in the claim without clearly identifying whether they refer to the same arrangement or not.

2. For the sake of completeness, the board notes that the main request additionally does not meet the requirements of Article 54 EPC.
- 2.1 As already set out in detail in section 4.3 of the communication dated 18 January 2023, the subject-matter of the independent claim 1 of the main request is considered to lack novelty (Article 54 EPC) from document D2 for the reasons that were set out in section 2 of the Board's communication pursuant to Article 15(1) RPBA of 3 June 2022. With respect to the main request, the appellant did not provide further arguments to address this objection. The board thus sees no reason to deviate from their preliminary opinion as provided in the communications on file.
- 2.2 Document D2 is concerned with wireless charging apparatuses (page 1, line 8) and addresses the problem of foreign object detection in such inductive-based wireless energy transfer systems (page 1, lines 10 to 27).

According to its abstract, D2 discloses a method for determining, based on at least one capacitance representative sensed by at least one capacitance sensing element (111, 112, 113) of an apparatus (100), whether an object detected (160) corresponds to a predefined type of objects, the apparatus(100) further comprising a wireless charging unit (140).

The apparatus 100 disclosed comprises a wireless charging unit 140 that may include a transmitting coil or a receiving coil (page 32, line 35 to page 36, line 6 and figure 1). They correspond to the primary unit (7) and secondary unit (34) of an inductive power

transfer system (5) as set out in claim 1 of the main request.

The device includes a detector 150 comprising capacitive sensing elements 111, 112, 113, located in proximity to the wireless charging unit 140, which sense deviations in capacitance value caused by metallic objects being in a predefined region (page 33, lines 22 to 23). These sensing elements correspond to the claimed detector device (31) and operate in the claimed manner. In particular, as disclosed on page 34, lines 23 to 30, in a step 220 (figure 2), it is determined whether an object detected based on the capacitance sensed by the capacitance sensing elements 111, 112, 113 corresponds to a predefined type of objects and an object may be detected based on the change of a sensed capacitance compared to a sensed capacitance when no object is placed in the predefined region. The predefined type of objects may be foreign objects which would interfere with wireless charging (page 35, lines 15 and 16). Furthermore, when determining whether the detected object corresponds to the predefined type of object, the detection unit 150 may be configured to distinguish between a foreign object and an object which corresponds to an allowable further apparatus configured to perform wireless charging in conjunction with the wireless charging unit 140 (page 37, last paragraph).

As disclosed on page 38, lines 24 to 33, in step 220, the detector 150 may be configured to determine whether a detected object matches with such a wireless charge object based on the sensed capacitance and based on a matching rule. If no match is determined it may be determined in step 220 that the detected object is a foreign object. The matching rules associated with a

foreign object or associated with a wireless charge object are determined based on a training with known objects (paragraph spanning pages 38 and 39). The information stored from this training and used in the matching process of D2 is a signature in the sense of claim 1 of the main request, and is used in the manner claimed. On page 40, lines 14 to 21 the term "partner object" is used for associated objects with which wireless charging can be formed. These partner objects correspond to a specific type of primary or secondary unit, in the sense of claim 1, there being a vast array of other known types of charging/chargeable devices which would not be compatible for charging and thus would not be considered to be partner objects.

The detection unit 150 of figure 1 of D2 uses a capacitive sensing structure 110 comprising capacitive sensing elements 111, 112, 113 (page 32, lines 9 to 14). This capacitive sensing structure 110 can be embodied as a capacitive sensing structure 410 as shown in figure 4a (see page 40, lines 23 to 29). In this sensing structure, capacitive sensing elements are arranged in a matrix of rows and columns in a plane (page 41, lines 2 and 3). The capacitance sensing structure 410 is used to capture an image of an object disposed on it (page 41, lines 13 to 19; figures 4c and 4d). Thus, in the wording of claim 1 of the main request, they provide a determination result for each of different regions of the arrangement, both when detecting a new object, and when performing the training with known objects.

3. As set out above, claim 1 of auxiliary requests 1 and 2 lacks clarity for the same reasons as invoked for the main request. The appellant stated that they had filed these requests to address not only the board's previous

objections according to Article 84 EPC but all objections raised in the communication dated 3 June 2022. Thus, for the sake of completeness, the board notes that auxiliary requests 1 and 2 additionally do not meet the requirement of Article 56 EPC in view of D2 as closest prior art in combination with D1.

- 3.1 Document D2 discloses on page 38, lines 24 to 33 a determination of whether a detected object matches with an associated wireless charge object, based on a matching rule. If no match is determined it is assumed that the detected object is a foreign object. On page 40, lines 14 to 21 the term "partner object" is used for such associated devices.
- 3.2 The appellant argued that matching as disclosed in document D2 is not the same as detecting a deviation in the sense of the independent claims of the auxiliary requests 1 and 2.
- 3.3 However the Board considers that detecting a deviation is merely detecting the extent to which the determined results do not match the existing (stored) information. This is at least comparable to what is done in document D2. The Board considers that seeking to carry out the determination of whether a detected object matches with an associated wireless charge object as disclosed in D2, it would be at least obvious for the skilled person to do so by assessing the extent to which the determined results match the existing (stored) information. Thus, the skilled person would arrive at the claimed feature of detecting a deviation without inventive activity.

- 3.4 The appellant further argued with respect to auxiliary requests 1 and 2 that D2 did not disclose an indication to detect both, the other part of the inductive power transfer system and a foreign object, at the same time.
- 3.5 Starting from the disclosure of document D2, the objective technical problem solved by this may be seen as being to provide an improved detection system. Faced with this problem it would be obvious for the skilled person to take account of document D1, which is in the same technical field as document D2. Document D1 discloses (see for example paragraph [0070]) to detect and locate foreign objects in a wireless charging arrangement by detecting perturbations picked up by a sensor array (i.e. by detecting deviations from expected values). Thus for a skilled person seeking to improve the detection system in document D2, it would be obvious to additionally detect a foreign object by detecting deviations as in document D1 in order to further differentiate and thereby improve the detection.
- 3.6 Furthermore, with respect to auxiliary request 2, which further determines the location of the foreign object, document D1 discloses in paragraph [0174] that a FOD (foreign object debris) detection system may be driven at a frequency that may evoke a reflection unique to a type, size, material, and/or location of a FOD. This at least implies an ability to detect the location of the foreign object. This corresponds to determining the location of the additional object as set out in the feature that has been added to claim 1 of auxiliary request 2.
- 3.7 For these reasons, the subject-matter of claim 1 of the auxiliary requests 1 and 2 is at least obvious in view



of a combination of document D2 (which discloses detection of the other part of an inductive power transfer system) and D1 (which discloses detection of a foreign object and its location based on deviations from expected values). Hence, the auxiliary requests 1 and 2 do not meet the requirement of Article 56 EPC.

4. *Conclusions*

4.1 As none of the requests is allowable, the question of their admittance (given that they were first filed in the appeal proceedings) needs not be addressed.

4.2 In the absence of an allowable request, the appeal had to be dismissed.

**Order**

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

The appeal is dismissed

The Registrar:

The Chair:



U. Bultmann

J. Hoppe

Decision electronically authenticated