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**Datasheet for the decision
of 3 September 2020**

Case Number: T 2288/18 - 3.2.01

Application Number: 10797532.8

Publication Number: 2445751

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H04B7/00, B60H1/00, B60H1/32,
F25D29/00, B65D88/74,
H04L29/08, H04W4/02

Language of the proceedings: EN

Title of invention:
PERFORMANCE AND POSITION MONITORING OF A MOBILE HVAC&R UNIT

Patent Proprietor:
Carrier Corporation

Opponents:
Lumikko Technologies Oy
Schmitz Cargobull AG

Headword:

Relevant legal provisions:
RPBA Art. 12(4)
EPC Art. 123(2), 54, 56

Keyword:

Late-filed request - request could have been filed in first instance proceedings (no)

Amendments - extension beyond the content of the application as filed (no)

Novelty - (yes)

Inventive step - (yes)

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

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Case Number: T 2288/18 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 3 September 2020

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
5 July 2018 concerning maintenance of the
European Patent No. 2445751 in amended form.**

Composition of the Board:

Chairwoman S. Fernández de Córdoba

Members: S. Mangin

 A. Wagner

Summary of Facts and Submissions

- I. The appeal was filed by the appellant (patent proprietor) against the interlocutory decision of the opposition division finding that, on the basis of the fifth auxiliary request, the patent in suit (hereinafter "the patent") met the requirements of the EPC.
- II. Oral proceedings were held before the Board on 3 September 2020 in presence of the patent proprietor and opponent 2. Opponent 1, which was duly summoned did not appear at the oral proceedings.
- III. The appellant (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the third auxiliary request, becoming the main request during oral proceedings. All the other requests on file were withdrawn.
- The respondent (opponent 2) requested that the appeal be dismissed. The respondent (opponent 1) made the same request in writing. No submissions on the substance have been made in appeal proceedings by the respondent (opponent 1).
- IV. The independent claims of the main request read as follows:
- (a) Independent claim 1

A system (14) for monitoring a mobile refrigerant system (10) including one or more system components, comprising:

a global positioning system receiver (16) that provides a locator signal; and

characterized by a performance monitor (18) that provides a monitor signal indicative of operational performance of at least one of the system components of the refrigerant system (10), wherein the monitor signal includes data indicative of at least one of airflow humidity, vibration, sound, operational speed, electrical voltage and electrical frequency in at least one of the system components; and

a processor (20) adapted to receive and combine the locator signal and the monitor signal, and produce a combined locator and monitor signal output (29).

(b) Independent claim 9:

A method of monitoring a mobile refrigerant system, comprising:

providing a mobile heat exchange system (10) having one or more system components and a processor having an output;

receiving a locator signal indicative of a position of the refrigerant system; and characterized by receiving a monitor signal indicative of operational performance of at least one of the system components, wherein the monitor signal includes data indicative of at least one of airflow humidity, vibration, sound, operational

speed, electrical voltage and electrical frequency in at least one of the system components;

combining the locator signal and the monitor signal using the processor into a combined signal (29) representative of location and performance at a point in time; and
analyzing performance of the mobile refrigerant system using the combined locator and monitor signal to at least one of
assign responsibility where a component or system malfunction has occurred; and
predict whether the mobile refrigerant system is going to malfunction.

V. In the present decision, reference is made to the following documents:

D1: Brochure "100% mehr Transparenz für Ihr Business. 100 gute Gründe für Ihre punktgenaue Disposition" (05.09.2008).

D2: Brochure "i-Box Universalschnittstelle für Telematikanwendungen" (2006).

E11: US 2003/0182950 A1 (2 October 2003)

Reasons for the Decision

1. Main request - Admissibility - Article 12(4) RPBA 2007

The Board exercised its discretion under Article 12(4) RPBA 2007 to admit the main request in the appeal proceedings.

1.1 Together with its statement of grounds of appeal, the appellant submitted for the first time new auxiliary requests 2, 3 and 4. During oral proceedings the appellant made auxiliary request 3 his main and sole request.

In the present case the statement of grounds of appeal was submitted before 1 January 2020. Thus the question whether or not new submissions should be admitted must be decided on the basis of Article 12(4) RPBA 2007, which gives the Board discretion not to admit, on appeal, requests that could have and should have been presented in the opposition proceedings (Article 25(2) RPBA 2020).

1.2 The proprietor arguments for admitting the main request in the proceedings can be resumed as follows:

- During oral proceedings in opposition a novelty objection based on E11 was raised against claim 1, while document E11 before the oral proceedings was only cited against claim 1 for inventive step. The novelty attack based on E11 was suggested by the opposition division rather than based on submissions from the opponents. The interpretation of E11 was devised by the opposition division and the only opportunity the patent proprietor had to consider this interpretation was during the oral proceedings. The opposition division gave to the proprietor thirty minutes to prepare and file a single new request that would solve all the issues (reference was made to point 9.4 of the minutes of the oral proceedings). To make sure to have his only possible request allowable, the request filed was over restricted. Therefore, the first possible opportunity to file the present main request was with the statement of grounds of appeal.

- Furthermore, the main request is directly aimed at overcoming the objections based on E11 raised in relation to the preceding requests filed with the statement of grounds of appeal (requests which were subsequently withdrawn). Moreover, it is directed at the same single inventive idea of "what is being monitored" as the other requests and finally the request converges directly onto the single inventive idea as defined in the upheld request by the opposition division.

1.3 Opponent 2 is of the opinion that the main request should not be admitted in the proceedings for the following main reasons:

- Claim 1 comprising the "the airflow humidity (...) in at least one of the system component" contravenes Article 123(2) EPC.

- The patent proprietor should have been prepared to deal with the novelty objection based on E11 during the oral proceedings. Although the objection of novelty based on E11 had only been raised during oral proceeding in opposition, an inventive step objection based on E11 had been raised with the grounds of opposition of the opponent 1.

- The patent proprietor should have filed the present main request during the oral proceedings in opposition proceedings, as the opposition division had given him thirty minutes to file a new request.

- Auxiliary requests 2, 3 and 4, filed with the statement of grounds of appeal are not convergent. In particular, auxiliary request 3, which was made main request in the course of the oral proceedings in appeal does not comprise the restriction to the compressor made in auxiliary request 2 filed by the proprietor with its statement of grounds of appeal and made in the fifth auxiliary request filed in oral proceedings in

opposition which was found to meet all the requirements of the EPC.

- 1.4 While the Board notes that the main request (auxiliary request 3 filed with the statement of grounds of appeal) is not convergent with the higher ranking requests filed with the statement of the grounds of appeal (Main request and auxiliary requests 1 and 2), the Board considers that the course of the oral proceedings in opposition had placed the proprietor in an unpredictable situation on the day of the oral proceedings with very little time to react to the new novelty attack based on E11 triggered by the opposition division. Indeed, according to the proprietor, he was only given one opportunity to file a new request and thirty minutes to prepare and file the new request. The course of the oral proceedings described by the patent proprietor was not contested by opponent 2.

The prevailing criteria under Article 12(4) RPBA 2007 is whether the patent proprietor could and should have filed the main request during opposition proceeding. The Board with its understanding of the course of the oral proceedings, in particular the restriction to file only one request, is of the opinion that the proprietor did not have the opportunity to file the present main request in opposition proceedings. The first possible opportunity for the proprietor to file a further request was with the statement of grounds of appeal. For these reasons and in exercising its discretion under Article 12(4) RPBA 2007, the Board admits the main request in the appeal proceedings.

2. Main request - Added subject-matter - Article 123(2) EPC

The subject-matter of claims 1 and 9 of the main request complies with the requirements of Article 123(2) EPC.

2.1 The opponent 2 is of the opinion that claim 1 extends over the content of the application as originally filed as "data indicative (...) of airflow humidity (...) in at least one of the system component" does not find any basis in the application as filed.

In his view original dependent claim 7: "The system of claim 1, wherein the monitor signal includes data indicative of at least one of airflow temperature and humidity" cannot be the basis for the amendment for the following reasons:

- the way claim 7 is worded the humidity is not associated to the airflow and;
- the data indicative of the airflow humidity is not limited "in at least one of the system component", and finally;
- paragraph [0012] of the application as filed (WO publication) cannot form the basis of the amendments either as paragraph [0012] lists as possible operational parameters "humidity" and "airflow" separately (i.e. not "airflow humidity").

2.2 The Board cannot follow the arguments of opponent 2 for the following reasons:

The way claim 7 is drafted "airflow temperature and humidity" should be understood as "airflow temperature and airflow humidity". In English it is common practice not to repeat the noun in a list of adjectives related to the same noun. Furthermore, in the context of the invention, the humidity can only be referring to the airflow humidity.

Furthermore although original dependent claim 7 does not specify that the airflow humidity is in at least

one of the system components, for monitoring the performance of a system component of the refrigerant system, it is implicit that the airflow humidity, similarly to the listed parameters in original dependent claim 8 (the temperature, vibration, sound, operational speed, electrical current, electrical voltage, electrical frequency and operational state) is monitored in at least one of the system components. It is further to be noted that in paragraph [0012], where parameters to be monitored are listed, there is no distinction made between some parameters that would be measured in a system component and other parameters that would be measured outside the system components. It has thus to be derived that all the parameters listed in original claims 6, 7 and 8 are parameters in at least one of the system components.

3. Main request - Novelty - Article 52(1) and 54 EPC

The subject-matter of claims 1 and 9 is novel over the prior art cited in the proceedings.

3.1 Opponent 2 is of the opinion that the subject-matter of claim 1 is not novel over the teaching of the brochure D1 alone as well as considering the teaching of the brochure D2.

3.2 D1 is an advertising brochure from Cargobull telematics GmbH about trailers using a telematic control unit with the date of 5 September 2008 indicated on the last page and D2 is an advertising brochure about i-Box universal interface for telematic applications with the date of 2006 indicated on the last page. The dates on the two brochures are well before the priority date of the patent application (23 June 2009). The public availability of the brochures has not been disputed by

the proprietor in appeal proceedings. D1 and D2 are thus considered prior art according to Article 54 EPC.

3.3 Opponent 2 is of the opinion that D1, disclosing that an alarm can be set for the battery condition ("Batteriezustand") on page 5, either alone or combined with the supplemental information in D2, discloses measuring the electrical voltage in at least one of the system components of the refrigerant system, namely the battery of the refrigerant system. According to opponent 2, D2 using telematic technology similarly to D1, can be used with D1 against novelty. Opponent 2 referred in D2 to the "battery voltage" ("Batteriespannung") listed under the data available from the i-box on page 1 and "The device being supplied with power from the refrigerator's battery via connections to the control box" under the heading "power distribution" ("Stromverteilung") on column 2 of page 2. Therefore, in his view D1 discloses measuring the electrical voltage of the refrigerant system's battery.

3.4 Furthermore, opponent 2 is of the opinion that D1, by disclosing on page 6 that the received information may be technical data about the cooling device (operating status, operating hours, defrost cycle), ("Technische Kühlgerätedaten (Betriebszustand, Betriebsstunden, Abtauzyklus)"), implicitly discloses measuring the electrical voltage in at least one of the system components of the mobile refrigerant system.

3.5 The Board cannot follow the reasoning of opponent 2.

Page 5 of D1 does not specify that the alarm for the battery condition "Batteriezustand" is the battery condition of the refrigerant system. On the contrary

except for the "deviation of the set value for temperature and set points", all the listed alerts on page 5 of D1 are not related to the refrigerant system but to the trailer in general:

- Trailer technology
- Door and coupling status
- Failure to comply with specified schedule times
- Area entries / exits
- battery condition
- Tire pressure and brake pad wear

Therefore, the battery condition seems to rather be the vehicle's battery. In any case there is no direct and unambiguous disclosure of the monitor signal including data indicative of the electrical voltage in at least one of the system components of the refrigerant system.

3.6 Furthermore the argumentation based on the combination of the teaching of the brochures D1 and D2 in the present case is an inventive step attack rather than a novelty attack, as no direct link can be found between the two brochures. While both brochures concern telematic-trailers, these two brochures are separate disclosures bearing different dates.

But even considering the disclosure of D2, page 1, listing the battery voltage among the data available from the i-box, does not specify that the battery voltage is of the refrigerant system. Some of the listed data not being specific to the refrigerant system, i.e. total diesel engine hours ("Gesamtdieselmotorstunden"), fuel level ("Kraftstoffstand"), the skilled person cannot derive that the battery voltage listed in D2 is of the refrigerant system.

Furthermore the disclosure on page 2, column 2 of D2 that the i-box device is being supplied with power from the refrigerator's battery via connections to the control box does not infer either that the battery voltage "Batteriespannung" listed in D2 is the battery of the mobile refrigerant system. Again it can well be the vehicle's battery.

3.7 Finally the list of information that can be received thanks to telematic disclosed on page 6 of D1 and in particular "Technical cooling device data (operating status, operating hours, defrost cycle) ("Technische Kühlgerätedaten (Betriebszustand, Betriebsstunden, Abtauzyklus)") is not a direct and unambiguous disclosure of the electrical voltage in at least one of the system components of the refrigerant system.

3.8 The above argumentation applies mutatis mutandis to independent method claim 9.

4. Main request - Inventive step - Article 52(1) and 56 EPC

The subject-matter of claim 1 involves an inventive step in view of both attacks presented by opponent 2 based on D1 in combination with D2 and E11 with common general knowledge.

4.1 Opponent 2 reiterated the above attack against novelty of claim 1 based on D1 in combination with D2 for inventive step. As mentioned above starting from D1 and with the teaching of D2, "the battery voltage" listed is neither implicit nor obvious to be the battery voltage of the refrigerant system.

4.2 Furthermore opponent 2 is of the opinion that starting from E11, where temperature is measured at the outside surface of the two-phase region of the condenser or evaporator to determine the level of refrigerant in the refrigerant system and to detect any eventual leak, the skilled person would want to improve the monitoring of the refrigerant system and would monitor additional data as an obvious course of action. The skilled person would for example measure the rotation speed of the compressor.

The Board cannot follow this line of argument either. Starting from the teaching of E11 dealing with determining any eventual leak in a refrigerant system, the skilled person has no incentive to further monitor the refrigerant system and even if he would, nothing hints the skilled person to monitor data indicative of at least airflow humidity, vibration, sound, operational speed, electrical voltage and electrical frequency in at least one of the system components of the refrigerant system. The argumentation of opponent 2 starting from E11 is based on hindsight.

4.3 The above argumentation applies *mutatis mutandis* to independent method claim 9.

5. To conclude, the main request fulfils the requirements of Articles 123(2), 52(1), 54 and 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to maintain the patent on the basis of the following documents:

- Claims 1-14 of the main request (third auxiliary request as filed with the statement setting out the grounds of appeal),
- Description columns 1-5 as filed during oral proceedings,
- Figures of the patent specification.

The Registrar:

The Chairwoman:



A. Vottner

S. Fernández de
Córdoba

Decision electronically authenticated