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**Datasheet for the decision
of 22 February 2021**

Case Number: T 0417/16 - 3.5.05

Application Number: 08009479.0

Publication Number: 1995147

IPC: B61L15/00, H04L29/12

Language of the proceedings: EN

Title of invention:

Transmission system for rail vehicles using an automatic
address allocation

Patent Proprietor:

Kabushiki Kaisha Toshiba

Opponent:

Siemens Aktiengesellschaft

Headword:

Transmission system for rail vehicles using an automatic
address allocation / Toshiba

Relevant legal provisions:

EPC Art. 54, 56, 100(a), 100(b), 99(1)

Keyword:

Inventive step - (yes)



Beschwerdekammern

Boards of Appeal

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Case Number: T 0417/16 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 22 February 2021

Appellant: Siemens Aktiengesellschaft
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 10 December 2015 rejecting the opposition filed against European patent No. 1995147 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chair A. Ritzka
Members: N. H. Uhlmann
F. Blumer

Summary of Facts and Submissions

- I. The appellant (opponent) appealed against the decision of the opposition division to reject the opposition against European patent No. 1 995 147.
- II. In the course of the first-instance proceedings, the following documents, *inter alia*, were referred to:

E1 "IEC 61375-1 ed 1.0 Electric railway equipment - Train bus - Part 1: Train Communication network", INTERNATIONAL STANDARD - IEC NORME INTERNATIONALE - CEI, vol. IEC 61375-1:1999, 6 September 1999, pages 1-104
E2 EP 1 694 035
D3 US 2006/180709
- III. The opposition division decided that neither of the grounds of opposition pursuant to Article 100(a), having regard to E2 and/or D3, and 100(b) EPC prejudices the maintenance of the patent as granted.
- IV. In its statement setting out the grounds of appeal, the appellant submitted arguments and the following documents:

E3 DE 102 60 806
E4 US 5,802,278
E5 EP 0 528 206
E6 Article from Wikipedia titled "Profinet"
- V. In its reply, the patent proprietor (respondent) submitted auxiliary request 1A and resubmitted auxiliary requests 1 to 3.
- VI. In a letter dated 6 December 2019, the respondent further submitted auxiliary request 3A.

- VII. The board summoned the parties to oral proceedings.
- VIII. In a communication pursuant to Article 15(1) RPBA 2020, the board set out its provisional view of the case.
- IX. With a letter dated 21 September 2020, the appellant submitted comments on the provisional view of the board and the following document:

E7 DE 10 2005 050 050

- X. In the course of the oral proceedings held on 22 February 2021, the respondent withdrew all auxiliary requests and the request that the appeal be held inadmissible.
- XI. Final requests

The appellant requested that the decision under appeal be set aside and that European patent No. 1 995 147 be revoked.

The respondent requested that the appeal be dismissed and the patent be maintained as granted. (All auxiliary requests and the request that the appeal be held inadmissible were withdrawn during the oral proceedings.)

- XII. Claim 1 of the patent as granted reads as follows (with numbering as used by the parties, the opposition division and the board):

"A transmission system for rail vehicles comprising:

M1.1: a transmission device (1) mounted on each of a plurality of vehicles (No. 1 to No. 5), having a plurality of transmission ports, and adapted to transmit data received from any port to a required transmission port in accordance with a prescribed instruction;

M1.2: a transmission path (3) for connecting transmission devices mounted in each of a plurality of said vehicles;

M1.3: an electrical device (2) that is connected with respective said transmission device and adapted to exchange data with said transmission device; and

M1.4: a transmission relay control device (4) arranged in respective said transmission device and adapted to set a transmission station address of said electrical device connected to a host transmission device,

M1.5: wherein said transmission device (1) is adapted, on address setting of an electrical device having an automatic address setting function in a network in which there are mounted a plurality of electrical devices of the same type,

M1.6: to create a condition wherein only said transmission device (1) itself and an electrical device (2) that is connected with said transmission device (1) are connected to said network, by temporarily stopping data exchange with an other transmission device and

M1.7: designating said transmission station addresses of said electrical device (2) in accordance with a prescribed setting."

XIII. Claim 3 of the patent as granted reads as follows (with numbering as used by the parties, the opposition division and the board):

"A transmission system for rail vehicles comprising:

M3.1: a transmission device (1) mounted on each of a plurality of vehicles (No. 1 to No. 5), having a plurality of transmission ports, and adapted to transmit data received from any port to a required transmission port in accordance with a prescribed instruction;

M3.2: a transmission path (3) for connecting between said transmission devices mounted in a plurality of said vehicles;

M3.3: an electrical device (2) that is connected with respective said transmission device and adapted to exchange data with said transmission device; and

M3.4: a transmission relay control device (4) arranged in respective said transmission device and adapted to set a transmission station address of said electrical device connected to a host transmission device; and

M3.5: a transmission station address conversion device (14) connected with said transmission relay control device and adapted to convert said transmission station address,

M3.6: wherein said transmission station address conversion device (14) is adapted to employ said same transmission station address as default address in respect of said transmission stations of identical electrical devices,

M3.7: and adapted to uniquely set said transmission station address on data flowing on a network even when more than one electrical device (2) of the same type is present on said network,

M3.8: by converting said transmission station address in the data to a prescribed transmission station address when data is received from an electrical device and on data transmission to an electrical device."

Reasons for the Decision

1. The patent in suit pertains to a data transmission system for rail vehicles. It deals with problems relating to assigning communication addresses to electrical devices in rail vehicles and converting these addresses when data is transmitted to and from the electrical devices.

2. Document E2 discloses, *inter alia*, techniques for assigning and translating IP addresses in a transportation vehicle.

Document D3 describes a method for train inauguration. IP addresses are assigned to devices, and address translation according to NAT techniques takes place.

3. **Sufficiency of disclosure, Article 100(b) EPC**

- 3.1 With regard to **claim 2**, the appellant argued that the interpretation of the claim wording "said address of said transmission station" by the opposition division was wrong.

- 3.2 The board observes that the interpretation of claim 2 as set out in the decision under appeal (section 4.3) is not in conformance with the description of the patent, because the initial IP addresses of the electrical/display devices are 0.0.0.0 (page 10, lines 22 to 24 of the originally filed description). Such addresses evidently cannot be used as a parameter for calculating the address of the electrical/display device.

However, the skilled person, who is clearly aware of general network communication techniques, would understand claim 2 to mean that the address of the electrical device is set to an address which is calculated using the address of the transmission device. This is confirmed in paragraphs 25 and 28 of the patent in suit, as correctly pointed out by the appellant. Figure 9 illustrates that the address of the electrical device 2a (192.168.0.100) is based on the address of the transmission device 1a (192.168.0.0).

For these reasons, the subject-matter of claim 2 is sufficiently disclosed and supported by the description.

3.3 The appellant argued that the description and the claims did not explain how the features of **claim 4** could be put into practice. In particular, the "dynamically altering said transmission station address conversion" implied that two conversions were needed, one per direction of travel. Furthermore, paragraph 35 of the patent taught two conversions. Thus, if a change of the direction is required, the skilled person could exchange these two conversions. However, the appellant further argued that such an exchange would affect the setting of the address (see feature M3.4 of claim 3) and not the conversion of addresses.

3.4 The board agrees with the appellant that the description of the patent in suit does not elaborate on the features of claim 4. As submitted by the appellant in its letter dated 21 September 2020 (penultimate paragraph on page 2), it is self-evident ("selbstverständlich") that the address conversion must be changed dynamically if the conversion has to consider the train's direction.

How to carry out this change does not pose any difficulties to the skilled person. The conversion essentially corresponds to exchanging a number for another one (see paragraph 35). Providing two such exchanges and using one or the other, depending on the direction, is well within the reach of the skilled person.

The appellant is right that the address conversion and the address setting are, normally, not independent of each other. However, the person skilled in general network communication techniques would clearly take into consideration this interdependency.

3.5 In summary, the ground of opposition based on Article 100(b) EPC does not prejudice the maintenance of the patent.

4. Patentability, Article 100(a) EPC

4.1 Claim 1 - inventive step

4.1.1 The appellant did not disagree with the distinguishing features (M1.5, M1.6 and M1.7) or the objective technical problem established by the opposition division (statement of grounds of appeal, section V). It argued that document E2 comprised a prompt in paragraph 27 which motivated the skilled person to combine E2's teaching with their common general knowledge and so arrive at the subject-matter of claim 1 (same section).

The board is not convinced. Paragraph 27 merely teaches that "network elements can be added to the network and others can be removed from it". Much more specifically, claim 1 states that:

"on address setting of an electrical device having an automatic address setting function in a network in which there are mounted a plurality of electrical devices of the same type, to create a condition wherein only said transmission device itself and an electrical device that is connected with said transmission device are connected to said network, by temporarily stopping data exchange with an other transmission device".

In other words, the data exchange is temporarily stopped when address setting takes place.

It is not apparent to the board, and it was not argued by the appellant, how and based on which common general knowledge the skilled person would arrive at these distinguishing features.

4.1.2 With the letter dated 21 September 2020, the appellant submitted document E7 and stated that paragraph 94 disclosed the distinguishing features M1.5, M1.6 and M1.7.

The question of the admissibility of the late-filed document E7 (Article 99(1) EPC and Articles 12 and 13 RPBA) notwithstanding, the board holds that it is not apparent that that paragraph discloses these distinguishing features and that the skilled person would combine the teaching of documents E2 and E7. The appellant did not provide any supporting arguments in this regard.

4.1.3 For these reasons, the subject-matter of claim 1 involves an inventive step.

4.2 Claim 3 - novelty

4.2.1 The decision under appeal deals with two lines of arguments regarding the novelty of the subject-matter of claim 3, both being based on document D3.

4.2.2 In document D3, IP addresses are assigned to devices by the VCU, see paragraph 52. Hence, the transmission relay control device (feature M3.4) cannot be anticipated by D3's router, but by the VCU. For this reason, the feature analysis provided by the appellant and dealt with in the impugned decision, sections 5.1 to 5.3, and the arguments in section III of the statement of grounds of appeal are not convincing.

4.2.3 Additionally, the opposition division set out a feature mapping of the features of claim 3 in view of document D3 in section 5.4.1 of the decision under appeal. Based on this mapping, the division came to the conclusion that the subject-matter of claim 3 is novel. The appellant did not argue against this.

4.2.4 The board confirms this finding of the opposition division.

4.3 Claim 3 - inventive step

4.3.1 The board agrees with the parties and the opposition division that document D3 forms a suitable starting point for the inventive-step assessment.

4.3.2 Distinguishing features

According to the decision under appeal, document D3 disclosed all the features of claim 3 except one part of feature M3.4, that the transmission relay control device **is arranged in** the respective transmission device.

The respondent further argued that D3 did not disclose an electrical device as claimed. D3's controller (Figure 2, Ctrlr. A, B and C) did not anticipate the electrical device, because the controller was not mentioned in NAT translation addresses "TABLE 1" (paragraph 66), thus D3 did not disclose address conversion for the controller. Furthermore, while paragraph 29 stated that the VCU managed the controller, no details regarding any address handling were given.

In this regard, the decision under appeal, section 5.6, considered that "Table 1 can easily be modified by the skilled reader". At the oral proceedings, the respondent convincingly argued that such a speculative modification does not correspond to a direct and unambiguous disclosure of address conversion for a controller.

Furthermore, the respondent submitted in a letter dated 18 September 2020 (section II.3 2.3.2 on page 5) that, in view of paragraphs 36 and 38 and Figures 3, 4, 5A

and 5B, the "devices in each of the cars" referred to in paragraph 65 of D3 can only mean the switches, routers and VCUs, not the controller.

The board agrees and points to paragraph 61, which confirms that the VCU "knows ... the particular routers and switches in those cars". The appellant did not submit any counter-arguments.

Consequently, the subject-matter of claim 3 is distinguished from the disclosure of document D3 by the following features:

- (a) an electrical device as claimed in features M3.4 and M3.6 to M3.8;
- (b) the transmission relay control device **is arranged in** the respective transmission device.

4.3.3 The board observes that document D3 does not effectively disclose the essential features of claim 3: an electrical device to which a transmission station address is set and the conversion of this address in data transmitted to/from the electrical device.

4.3.4 None of the documents on file discloses these features in the context of rail vehicles. The board holds that they do not belong to the general knowledge of the skilled person. The appellant did not argue differently. Consequently, the subject-matter of claim 1 is not obvious for the skilled person having regard to the disclosure of document D3.

4.3.5 In view of this finding, it is of no relevance whether feature (b) contributes towards inventive step.

4.4 For these reasons, the ground of opposition based on Article 100(a) EPC does not prejudice the maintenance of the patent.

5. Conclusion

No ground of opposition prejudices the maintenance of the patent in suit. Hence, the request of the appellant cannot be allowed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Götz-Wein

A. Ritzka

Decision electronically authenticated