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**Datasheet for the decision
of 1 July 2026**

Case Number: T 1249/24 - 3.2.01

Application Number: 18879098.4

Publication Number: 3628563

IPC: B61H11/00, B60T13/66,
B60T17/22, B60L7/00

Language of the proceedings: EN

Title of invention:

RAIL TRAIN BRAKE CONTROL SYSTEM AND TRAIN

Patent Proprietor:

CRRC Tangshan Co., Ltd.

Opponent:

KNORR-BREMSE
Systeme für Schienenfahrzeuge GmbH

Headword:

Relevant legal provisions:

EPC Art. 54

Keyword:

Novelty - (no)

Decisions cited:

G 0001/24

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1249/24 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 1 July 2026

Appellant: KNORR-BREMSE
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted/electronically transmitted on 6 August 2024 rejecting the opposition filed against European patent No. 3628563 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman G. Pricolo
Members: J. J. de Acha González
S. Fernández de Córdoba

Summary of Facts and Submissions

- I. The opponent's appeal is directed against the decision of the Opposition Division rejecting the opposition to European patent No. 3 628 563.
- II. The following evidence is relevant for the present decision:
D1: EP 1 046 564 A2.
- III. Oral proceedings before the Board were held on 1 July 2026. The respondent did not attend the oral proceedings and the oral proceedings took place without them pursuant to Article 15(3) RPBA (Rules of Procedure of the Boards of Appeal).
- The appellant (opponent) requested that the decision under appeal be set aside and the patent be revoked.
- The respondent (patent proprietor) did not make any submissions in these appeal proceedings.
- IV. Claim 1 as granted reads as follows (feature numbering according to the contested decision):
- 1.1 *A brake control system of a rail train comprising multiple vehicles,*
 - 1.2 *the multiple vehicles comprising power vehicles and non-power vehicles,*
 - 1.3 *the system comprises a vehicle brake control unit (200),*
 - 1.4 *a train brake control unit (100),*
 - 1.5 *a traction control unit (300), and*
 - 1.6 *a communication control unit (400);*

- 1.7 each vehicle of a rail train is provided with the vehicle brake control unit (200);
- 1.8 each of the vehicles located at both ends of the rail train is provided with the train brake control unit (100) and the communication control unit (400);
- 1.9 each of the power vehicles of the multiple vehicles is provided with the traction control unit (300);
- 1.10 the vehicle brake control unit (200), the train brake control unit (100), the traction control unit (300) and the communication control unit (400) perform communication by means of gateways (602);
- 1.11 the train brake control unit (100) is configured to calculate, according to braking information sent by the vehicle brake control unit (200) and the traction control unit (300), data of air braking force and an electric braking force to be applied;
- 1.12 the train brake control unit (100) is configured to calculate, according to braking information sent by the vehicle brake control unit (200) and the traction control unit (300), data of air braking force and an electric braking force to be applied;
- 1.13 the traction control unit is configured to perform electric braking on the train according to the data of the electric braking force to be applied which is sent by the train brake control unit (100); and
- 1.14 the communication control unit (400) is configured to receive a braking instruction from a driver controller (603), and send the braking instruction to a system where the instruction is executed,
- 1.15 each vehicle is provided with a multifunction vehicle bus;
- 1.16 each of the vehicle brake control unit (200), the train brake control unit (100), the traction control unit and the communication control unit (400) is connected to the multifunction vehicle bus;
- 1.17 the multifunction vehicle bus is connected to the

gateway (602);

- 1.18 the gateways (602) between the multiple vehicles are connected to one another by means of a wired train bus, **characterized in that**
- 1.19 the train brake control unit (100) comprises a primary unit (101) and an auxiliary unit (102);
- 1.20 the primary unit (101) is the train brake control unit (100) which is provided on the vehicle at one end of the rail train where the driver is located, and
- 1.21 the auxiliary unit (102) is the train brake control unit (100) which is provided on the vehicle at the other end of the train;
- 1.22 the primary unit (101) and the auxiliary unit (102) are connected to one another by means of the gateway (602);
- 1.23 when the primary unit (101) malfunctions, the auxiliary unit (102) is upgraded to service as the primary unit (101).

Reasons for the Decision

1. Novelty

- 1.1 The subject matter of granted claim 1 is not new in view of the brake control system of D1 (Article 54 EPC).
- 1.2 The Opposition Division concluded that **D1** did not disclose features 1.8 and 1.23 of claim 1, namely:

1.8 - each of the vehicles located at both ends of the rail train is provided with the train brake control unit (100) and the communication control unit (400);

1.23 - when the primary unit malfunctions, the auxiliary unit is upgraded to service as the primary unit.

The Opposition Division construed the "malfunction" in feature 1.23 as referring to a defect in the primary unit itself and not to a communication issue between primary and auxiliary TBCUs (see point 11.7.3 of the decision, whereby TBCU = train brake control unit). The Division further considered that the feature implied a function monitoring mechanism for the primary control unit, which could involve various sensors and diagnostic assessments aimed at verifying whether the primary TBCU was functioning correctly.

- 1.3 The Board judges the interpretation of the Opposition Division to be too restrictive and agrees with the appellant that feature 1.23 can be interpreted in a broader manner as explained herein below. In this respect, the Board notes that the respondent, by not actively participating to the appeal proceedings, has not provided any arguments to the contrary.

In line with the principles set out in G 1/24, the description and drawings shall always be consulted to interpret the claims when assessing the patentability of an invention under Articles 52 to 57 EPC, and not only if the person skilled in the art finds a claim to be unclear or ambiguous when read in isolation.

Paragraph [0041] of the patent recites :

"The two TBCUs 100 perform communication of life signals with each other, and after the primary TBCU 100 malfunctions, the auxiliary TBCU 100 automatically becomes the primary TBCU 100 to perform the brake control". Accordingly, since life signals are exchanged

between the TBUs, it is appropriate to derive therefrom that a communication issue between the TBCUs, such as e.g. no life signal due to an interruption of communication, would trigger the automatic switch from primary TBCU to auxiliary TBCU, even in the absence of a malfunction of the primary TBCU itself. Accordingly, the expression "when the primary unit malfunctions" in feature 1.23 is to be construed such as not necessarily implying that the primary unit itself has to malfunction in order to upgrade the auxiliary unit to service as the primary unit, but as also encompassing the possibility that the auxiliary unit is upgraded to service as the primary unit "when the communication between the TBUs is interrupted".

- 1.4 The Opposition Division noted that in document D1 the control unit 23 located on the rear vehicle 22 fulfilled an auxiliary master function solely in the event of an assumed unintended train separation and then provided rapid braking. The separation was detected when no further signals were received from the master vehicle bus system by the last vehicle, when the electrical power supply routed through the train no longer provided on-board voltage, or when no communication took place via the train bus, thereby indicating that no control unit capable of taking over the braking was present. However, the Opposition Division found that D1 did not disclose any monitoring system designed to ascertain the operational status of the primary control unit located at the front of the train. A train separation could not be assumed to result from a defect or malfunction of the primary unit itself. D1 did not thus indicate whether the primary unit was malfunctioning and did not disclose feature 1.23 (see point 12.4 of the contested decision).

- 1.5 However, in view of the above, the interruption of communication falls under the definition of feature 1.23. Accordingly, in the event of a train separation, the primary braking unit can no longer brake the separated end section 44 of the train, and this function is taken over by the auxiliary unit 23 of the end car. Feature 1.23 is therefore disclosed in D1.

With regard to feature 1.8, the Opposition Division conceded that the control unit in car 22 at the end of the train could be considered a train brake control unit for its respective train section, and equipped with a communication control unit (see page 16 of the contested decision). This is correct and uncontested. Consequently, D1 also discloses feature 1.8.

2. It follows from the above that the opponent's appeal is allowable.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:



M. Schalow

G. Pricolo

Decision electronically authenticated