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Case Number: T 0010/13 - 3.2.01

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Title of invention:
Communication system in trains

Patent Proprietor:
Hitachi, Ltd.

Opponent:
Siemens Aktiengesellschaft

Headword:

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
Novelty (yes); inventive step (yes)

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Case Number: T 0010/13 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 10 September 2015

Appellant: (Opponent)	Siemens Aktiengesellschaft Wittelsbacherplatz 2 80333 München (DE)
Respondent: (Patent Proprietor)	Hitachi, Ltd. 6-6, Marunouchi 1-chome Chiyoda-ku Tokyo 100-8280 (JP)
Representative:	Gill, Stephen Charles Mewburn Ellis LLP City Tower 40 Basinghall Street London EC2V 5DE (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 26 October 2012 concerning maintenance of the European Patent No. 1975031 in amended form.**

Composition of the Board:

Chairman	G. Pricolo
Members:	C. Narcisi
	S. Fernández de Córdoba

Summary of Facts and Submissions

I. European patent No. 1 975 031 was upheld in amended form by the decision of the Opposition Division posted on 26 October 2012. An appeal was lodged by the Opponent on 20 December 2012 and the appeal fee was paid at the same time. The statement of grounds of appeal was filed on 5 March 2013.

II. Oral proceedings took place on 10 September 2015. The Appellant (Opponent) requested that the appealed decision be set aside and that the patent be revoked. The Respondent (Patentee) requested that the appeal be dismissed.

III. Claim 1 has the following wording:

"A train communication system comprising: an image data communication device, a control data communication device which is separated from the image data communication device, and a display unit installed in each of a plurality of connected cars; and a server installed in at least one of the cars; wherein the image data communication devices are mutually communicably connected in series by a first transmission path, the control data communication devices are mutually communicably connected in series by a second transmission path, and the image data communication device and the control data communication device of each of the cars are mutually communicably connected, wherein a plurality of image data is transmitted from the server to the display unit through the image data communication device and stored in the display unit, and the screen display of the plurality of image data stored in the display unit is controlled by utilizing control information transmitted from the

control data communication device through the image data communication device."

IV. The Appellant's submissions may be summarized as follows:

The subject-matter of claim 1 is not new over D1 (Dorn, H.: "Fahrgastinformationssysteme - Gegenwart und Zukunft//Passenger Information Systems - Present And Future", Zevrail-Glasers Annalen, Georg Siemens Verlag, Berlin, DE. vol. 127. no. 8, 1 August 2003 (2003-08-01), pages 370-377, XP001168404, ISSN: 1618-8330), which discloses a train communication system comprising all the features of contested claim 1, particularly the features (i) (i.e. "image data communication devices are mutually communicably connected in series by a first transmission path, the control data communication devices are mutually communicably connected in series by a second transmission path"), (ii) (i.e. "a plurality of image data is transmitted from the server to the display unit through the image data communication device and stored in the display unit") and (iii) (i.e. "the screen display of the plurality of image data stored in the display unit is controlled by utilizing control information transmitted from the control data communication device through the image data communication device"). Contrary to the opinion of the Opposition Division in the appealed decision feature (i) is disclosed in figure 1 (page 371) of D1, as shown by the communication path (data bus) mutually connecting in series the control data communication units DBK (second transmission path as claimed) and by the image data communication devices WR connected through repective branching points to said second path (thus forming a first path mutually connecting in

series said WR units). In effect, claim 1 does not require that said first and second transmission paths be physically separate, therefore it suffices that these paths be separate logical paths, as implied by figure 1 of D1. Further, even though the image data units WR are mutually connected through branching points to said main data bus forming said second path, nevertheless a connection in series is thereby obtained, equivalent to that shown in figure 2 of the patent specification (hereinafter denominated as EP-B), likewise including a branching point. Feature (iii) is likewise implicitly derivable from D1, since the control signals related to the timing of the screen display of information concerning train stops (current or next stop) necessarily has to be transmitted by the server (see "Datenzentrale" in fig. 1 of D1) and, given the topology and configuration of the communication paths of fig. 1, through the communication data unit DBK and the image data unit WR. Finally, feature (ii) is also known from D1, given that it is obvious that at least a temporary storage ("Zwischenspeicherung") of data is necessary, first transmitted from the server to the image data communication unit WR, these data being subsequently temporarily stored in the memory or storage unit provided on the display units INA and GRA (see D1, page 373, central column, last paragraph) just before display on the screen.

The subject-matter of claim 1 is not inventive over prior art E3 (JP-A-2002-209193) (and E4 (English translation of E3)) in view of the skilled person's common general knowledge or E6 (DE-U1-20 2005 012 939). E3 discloses a train communication system (see figures 1, 8, 9) including all features of claim 1 except for feature (ii). In particular, according to E3 the storage unit is provided in the image data

communication unit 81 and not in the display device 82, as required by claim 1 (see figure 8; E4, paragraph [0037], [0038]). The skilled person would however obviously envisage installing the storage unit in the display unit in order to reduce the time delay necessary to produce the screen display of image information. This is moreover also suggested by E6 (see for instance claim 1). The subject-matter of claim 1 hence lacks an inventive step.

The subject-matter of claim 1 does not involve an inventive step in view of D1, in conjunction with the skilled person's general knowledge or E3. On the assumption that aforesaid feature (i) is not known from D1, this difference would anyway not justify the presence of an inventive step. Indeed, the skilled person would contemplate implementing first and second communication paths in order to increase redundancy as a fail safe measure, in the event that the image data communication unit (or one of the communication paths) should fail. This measure is also suggested by E3, disclosing transmission path 11, mutually connecting control data communication units 60, and transmission path 30, mutually connecting image data communication units 81 (E3, figure 8). The combination of D1 and E3 is moreover suggested by the analogy existing between the two transmission paths 11, 30 according to E3, on the one hand, and the data bus mutually connecting the control data communication units DBK and the audio-video bus AV-Bus mutually connecting the high frequency-car central data units HF-WZ (located on each of the cars) according to D1, on the other hand. Thus, providing an obvious coupling of said two data buses disclosed in D1 in each of the cars would in principle, as also suggested by E3, lead the skilled person to the claimed subject-matter.

V. The Respondent's arguments may be summarized as follows:

The subject-matter of claim 1 is new over D1. D1 does not disclose two separate transmission paths as implied by the wording of claim 1, nor does it disclose that the first and second transmission paths connect said devices in series (see aforementioned feature (i)). Moreover, D1 does not disclose features (ii) and (iii), since no indication is given in D1 that image information is stored in the storage device of the display unit (assuming such a device is present in the display unit, which is not necessarily the case) before being displayed on the screen after transmission of a control signal from the control data communication device through the image data communication device. In particular, it is generally known (for instance from E6) that previous storage of image data in the storage device of the display unit is not necessary, given that alternatives exist.

The subject-matter of claim 1 is inventive over E3 in view of the skilled person's common general knowledge or E6. The combination of E3 and E6 would not be obvious, for these documents relate to different technical fields and E6 does not mention train communication systems. The skilled person would not contemplate modifying the communication system of E3 as shown in figure 8, particularly in view of the complex internal structure of the control data communication unit 81 illustrated in figure 9 of E3. If anything, the skilled person would rather turn to the embodiment of figure 6 in E3, where the display device unit 80 is shown to additionally possess control data and image data processing capabilities and would not try to

modify the communication system of figure 8 (and 9). The embodiment of figure 6 does not however include features (iii) of contested claim 1, this embodiment hence likewise does not anticipate the claimed subject-matter.

The subject-matter of claim 1 is inventive over D1 in view of the common general knowledge of the skilled person and E3. In effect, the architectures of the communication systems of D1 and E3 differ substantially and there would be no reason for the skilled person to extract from E3 just the information concerning separate transmission paths and try to apply it to the system of D1. Also, substantial modifications would be necessary in order to implement this technical feature in the system of D1.

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 is new over D1 since at least features (i) and (ii) are not disclosed in this document. In effect, within the meaning of the invention said first and second transmission paths have to be considered as "separate" (though not explicitly stated in the claim) at least insofar as "even when the image data communication device is unable to communicate due to failure or other reasons, control information transmitted by the server or the control data communication device allows to change display on the screen using the plurality of image data prestored in the display unit" (see EP-B, column 3, lines 5-7). By contrast, this technical feature is not derivable from D1, given that figure 1 merely illustrates a configuration where the image data communication

devices WR are located in the transmission paths, between the control data communication devices DBK and the display units INA and GRA. No separation of transmission paths within the meaning of the invention is disclosed in D1 to remedy or circumvent failure of the image data communication devices. Further, it is noted that a series connection of said image data communication devices WR by a first transmission path necessarily implies that any signal has to pass sequentially through all preceding image data communication devices WR to reach a predetermined one of said devices WR. This is however clearly not warranted by the system configuration of figure 1 in D1.

As to feature (ii) it is noted that this feature is neither explicitly nor implicitly derivable from D1. In effect, the presence of a storage device in the display device (as implied by D1, page 373, central column, last paragraph), does not necessarily entail that image information data are "prestored" in this storage device before display on the screen. Indeed alternatives are possible, as described for instance in E6 (as pointed out by the Respondent) (see E6, paragraph [0002]). These alternatives would imply in the present case direct transmission of image data in real time to the display device by the server (see "Datenzentrale" in figure 1 of D1) or by the control data communication device DBK, or, as a further alternative, prestorage in the image data communication device WR. In particular, the last alternative is also implemented in E3 (see reference sign 81, paragraph [0038]). It is therefore concluded that D1 does not anticipate the subject-matter of claim 1.

3. The subject-matter of claim 1 is not derivable in an obvious way from E3 in view of E6 and the skilled

person's common general knowledge. Starting from E3 the skilled person would not arrive at the subject-matter of claim 1. In effect, E3 discloses two distinct embodiments (in figures 1 and 6 or 8), wherein the reception device 80 (acting as control data communication device according to claim 1) either includes both the display control device and the display device (figures 1 and 6), or is split into a display control device 81 and a display device 82 (see E4, paragraph [0036]). However, in all mentioned embodiments according to E3 the storage device is included in the devices 80 or 81, both including the display control, and it is not separated from the display control and translated to a distinct and mere display device (see E4, paragraphs [0037]-[0038]), nor is an additional storage device provided in such a distinct and mere display device. Evidently, the embodiment of figure 8 presents particular advantages when a number (plurality) of display devices have to be installed in each of the railway cars (or if a display device has to be located at a position different from that of the reception device), for it avoids installation of a plurality of reception devices including both a display control and a display device. Thus, starting from figure 8 (according to the Appellant's line of argument), the skilled person (contrary to the Appellant's view) would avoid implementing said feature (ii), since this would largely nullify the mentioned advantages implied by the embodiment of figure 8. Indeed, the system's architecture and its functions would get more involved, while at the same time causing increased costs, particularly due to duplication of components (i.e. additional storage device and related data receiving device in each display device).

The above conclusions would similarly apply if the embodiment of figure 8 had to be modified (through implementation of feature (ii)) with only one display control device and one display device per car being present and required. In particular, if a display device had to be located at a position different from that of the reception device (which is the situation implied by figure 8), unnecessary duplication of components (already included in the display control device) and modification of the system's architecture would be avoided by the skilled person.

Furthermore, if the skilled person would contemplate reducing the time delay necessary for the display of image information on the screen (as asserted by the Appellant), then it would rather consider implementing the embodiment of figure 6 of E3 itself, where the display control device and the display device are already brought together in one single unit. This would reduce time delay due to data transmission. Moreover, it can be doubted whether feature (ii) would contribute at all to substantial reduction of said time delay, given that in said embodiment of figure 8 said time delay is already significantly reduced thanks to prestorage of image information in said display control 81 (image data communication device) and the proximity of the display control 81 to the display device 82 (these devices being directly connected within the same railway car). Therefore the skilled person would have no incentive and no motivation to contemplate prestorage of said data in the display device 82 according to feature (ii).

Finally, in the Board's view, consideration of the object of the invention as indicated in EP-B (i.e. "to reduce the influence of disconnection of a transmission

line or failure of a communication device, thereby providing a highly reliable communication system", EP-B, paragraph [0009]) would not lead the skilled person to said feature (ii) in an obvious manner. In effect, this object would be achieved for instance by generally increasing redundancy through various different technical measures. In particular, redundancy could be increased by duplicating the relevant components needed for this purpose in the image data communication device 81 (such as for instance the storage device in display control 81 and the transmission path connecting device 81 to the display device(s) 82) or in the control data communication device 60 (see figure 8). These measures would also be less costly and involved than providing a number or plurality of display devices (in each car) with additional hardware components. Thus, the mentioned object would by no means obviously and necessarily lead the skilled person to the implementation of feature (ii).

For the above reasons, particularly in view of the arguments submitted by the parties, the Board considers that despite said feature (ii) being in principle known from E6 (and also in view of the skilled person's common general knowledge) its implementation in the communication system according to figure 8 of E3 would not be obvious for the skilled person.

4. The subject-matter of claim 1 is not made obvious by prior art D1 in view of E3 or the skilled person's common general knowledge. Contrary to the Appellant's view, the configuration and architecture of said train communication systems of D1 (D1, figure 1 page 371) and E3 (figure 8) differ substantially, such that the combination of these documents would not be obvious. Specifically, according to D1 the audio/videobus AV-Bus

(transmitting video information for the passengers; see D1, page 372, left column, first paragraph; page 376, columns 1,2 and column 3, first paragraph) does not communicate at all with said display devices (see D1, figure 1, display devices INA, GRA) through the control data communication devices WR, as is the case according to E3 (figure 8, see control data communication device 81). Indeed, the audio/videobus AV-Bus transmission path is not coupled to the first and second transmission paths respectively mutually connecting said image data communication devices WR and said image data communication devices DBK (see D1, figure 1), being instead coupled at one end to the server (figure 1, "Datenzentrale") (through a high-frequency train central unit HF-ZZ ("Hochfrequenzzugzentrale"), an Audio/Video module AV-BGT ("Audio/ Videobaugruppenträger") and an ISDN-communication central unit HICOM ("ISDN-Kommunikationszentrale")), and at the opposite end to passenger-seat-modules SIM ("Sitzplatzmodule") through a high-frequency car central unit HF-WZ ("Hochfrequenzzugzentrale"). Thus, said transmission path AV-Bus is in no way to be equated or compared to said first transmission path in E3 (and according to claim 1) mutually connecting the display control devices 81, which are connected to the display devices 82, the configuration of these paths being entirely different. Therefore the skilled person would not contemplate or consider combining D1 with E3, nor can said features (i) and (ii) be regarded as constituting part of common general knowledge. In conclusion, the subject-matter of claim 1 would not be obvious in view of the available prior art (Article 56 EPC).

5. The same conclusions as above apply to independent claim 2, which also includes said features (i) and (ii)

which in conjunction with the further subject-matter of the claim do not result in an obvious manner from the prior art documents discussed above.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated