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**Datasheet for the decision
of 5 July 2011**

Case Number: T 0104/08 - 3.5.05

Application Number: 02076747.1

Publication Number: 1246414

IPC: H04L 12/56

Language of the proceedings: EN

Title of invention:

Wireless communications system and method therefor

Applicant:

Johnson Controls Technology Company

Headword:

Wireless communications system and method/JOHNSON

Relevant legal provisions:

EPC Art. 54, 123(2)

Relevant legal provisions (EPC 1973):

EPC Art. 56, 84

Keyword:

"Clarity and support by description (yes - after amendment)"
"Extension of subject-matter (no - after amendment)"
"Inventive step (yes - after amendment)"

Decisions cited:

-

Catchword:

-



Case Number: T 0104/08 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 5 July 2011

Appellant: Johnson Controls Technology Company
650 Waverly
Holland
MI 49423 (US)

Representative: Schwöbel, Thilo K.
Patentanwälte Kutzenberger & Wolff
Theodor-Heuss-Ring 23
D-50668 Köln (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 20 August 2007
refusing European application No. 02076747.1
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chair: A. Ritzka
Members: P. Corcoran
G. Weiss

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division to refuse the European patent application No. 02 076 747.1, publication no. EP 1 246 414. The decision was announced in oral proceedings held on 11 July 2007 and written reasons were dispatched on 20 August 2007.

II. The decision under appeal was based on a main request and five auxiliary requests. The main request and the first and third to fifth auxiliary requests were refused due to a lack of inventive step in the light of the following documents:

D1: F. Bennett et al., "Piconet: Embedded Mobile Networking", IEEE PERSONAL COMMUNICATIONS, vol.4, no. 5, 1 October 1997, pp.8-15, ISSN: 1070-9916;

D2: DE 197 28 083 A;

D3: J. Haartsen, "Bluetooth - The universal radio interface for ad-hoc wireless connectivity", Ericsson Review, no.3, 1998, pp.110-117, ISSN: 0014-0171.

The second auxiliary request was not admitted under Rule 86(3) EPC 1973 in view of its late filing during oral proceedings before the examining division.

III. In an *obiter dictum* appended to the decision under appeal the following documents were cited as having been identified in a search under Article 54(3) EPC 1973:

D4: EP 1 052 834 A;

D5: W099/30429 A;

D6: DE 199 17 169 A.

IV. Notice of appeal was received at the EPO on 23 October 2007 with the appropriate fee being paid on the same date. A statement setting out the grounds of appeal was received at the EPO on 28 December 2007. With the statement setting out the grounds of appeal the appellant (applicant) filed a new main request and an auxiliary request.

V. In a communication accompanying a summons to oral proceedings to be held on 5 July 2011 the board gave its preliminary opinion that neither of the appellant's requests were allowable.

VI. Objections were noted in respect of the main request under Articles 84 EPC 1973, Article 123(2) and Article 56 EPC 1973. Similar objections were noted in respect of the auxiliary request.

VII. In its communication, the board made reference to the following additional prior art documents:

D7: F. Stajano, "Security for Ubiquitous Computing", pp.43-44, 2002, John Wiley and Sons Ltd., ISBN: 0-470-84493-0;

D8: GB 2 264 613 A;

D9: US 5 086 510 A;

D10: K.J. Negus et al., "HomeRF and SWAP: Wireless Networking for the Connected Home", Mobile Computing and Communications Review, vol.2, no.4, pp.28-37, October 1998, ACM Press, ISSN:1559-1662.

D11: F. Berkner, "Hören, wo es langgeht - Die Sprachsynthese ICs von Oki machen Texte hörbar", Elektronik, vol.47, no.23, pp.58, 60, 62-64, 10 November 1998, ISSN 0013-5658.

D7 is a textbook extract which refers to the Piconet system of D1 and which was submitted by the appellant in a letter dated 22 March 2006.

D8 is cited in the International Search Report of D5.

D9 is cited in the national Search Report of D8.

D10 is a document relating to the SWAP-CA wireless communications specification referred to in the present application without any specific prior art publication being acknowledged in respect thereof (cf. published application: [0019] and [0024]).

D11 is a document relating to "text-to speech" conversion technology referred to in the present application without any specific prior art publication being acknowledged in respect thereof (cf. application: [0029]).

VIII. With a letter of reply dated 3 June 2011, the appellant filed a new main request and two auxiliary requests.

IX. At the oral proceedings held as scheduled on 5 July 2011, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 and 2 filed during the oral proceedings as a sole request. The requests filed with letter dated 3 June 2011 were withdrawn.

X. Independent claim 1 of the appellant's sole request reads as follows:

"A system for enabling a vehicle occupant to view and playback text information, in the form of personal calendars, e-mails or telephone directories, provided by a portable electronic device in a vehicle, the vehicle including a display mounted in the vehicle and an audio system mounted in the vehicle, wherein a first radio frequency transceiver is integrated with the portable electronic device, the system comprising:

- the first radio frequency transceiver,
- a second radio frequency transceiver,
- the display,
- the audio system, and
- a text-to-speech module,

wherein the second radio frequency transceiver is mounted in the vehicle, the second radio frequency transceiver being configured to communicate with the first radio frequency transceiver in accordance with a wireless communications protocol, wherein the wireless communications protocol

- makes use of the 2,4 GHz ISM band, and
- uses a frequency hopping scheme using 1600 hops/second,

wherein the text information is transmitted using the wireless communications protocol from the first radio frequency transceiver to the second radio frequency transceiver,

wherein the second radio frequency transceiver provides the text information to the display and wherein the second radio frequency transceiver provides the text information to a text-to-speech module, and the text information is converted to

audio by the text-to-speech module and transmitted to the audio system for playback, wherein a wireless data link is automatically created between the two radio frequency transceivers when the two radio frequency transceivers are within a predetermined proximity to each other."

Claim 2 of the request is a further independent claim seeking protection for a corresponding method.

XI. During oral proceedings before the board, the representative made oral submissions in support of the request and argued that the cited prior art documents were not prejudicial to the inventive step of the claimed subject-matter.

XII. With respect to D8, the appellant submitted that although said document disclosed a wireless (infrared) communication link between a portable device in the form of a mobile telephone device, the communication link appeared to be used solely for transferring an audio signal from the mobile telephone device to the audio system of the vehicle. According to the appellant, D8 failed to disclose that a portable device such as a mobile telephone provided text information to a transceiver mounted in a vehicle whereupon the text information was displayed on a display mounted in the vehicle and was also forwarded to a text-to-speech conversion module for conversion to audio and subsequent rendering ("playback") via the audio system of the vehicle. The appellant submitted that such an arrangement involving the parallel presentation of information in text and audio format was neither disclosed nor rendered obvious by D11.

The appellant further submitted that although D8 disclosed the provision of information such as telephone numbers from a telephone device to a vehicular display unit, this appeared to be in the context of an embodiment in which the telephone device was mechanically rather than wirelessly coupled to the vehicular information system. Moreover, D8 did not disclose the parallel rendering of text information in visual and acoustic formats as specified in claim 1.

XIII. With respect to D9, the appellant submitted that although said document disclosed a wireless (infrared) communication link used to transfer data between a portable device and a vehicular information system, the portable device of D9 was an input device which was primarily intended for the transmission of data commands to control the operation of peripheral devices attached to the vehicular information system.

In one embodiment of D9, the portable input device incorporated the functionality of a telephone handset. However, the appellant submitted that according to this embodiment the telephone base unit was hardwired to the vehicular information system. The wireless (infrared) communication link disclosed in this embodiment was used to interconnect components of the mobile telephone equipment, i.e. the handset and the base unit, and not to provide a coupling between the mobile telephone equipment and the vehicular information system.

The appellant further submitted that although D9 disclosed text-to-speech conversion means in the form of a digital speech memory and a speech synthesizer

which was used to produce acoustic output via the audio system of the vehicle, the disclosure of D9 in this regard was essentially limited to providing telephone answering announcements to telephone callers, providing audible announcements of coded broadcast traffic advice and piloting instructions from a navigational system and responses to manual inputs to the system.

XIV. With respect to D11, the appellant submitted that although said document referred in general terms to the use of text-to-speech conversion technology in the context of automotive applications, its disclosure in this regard was essentially limited to the audible announcement of digitally transmitted traffic information or the audible announcement of instructions from a navigation system.

D11 also referred to applications of text-to-speech conversion technology in the context of mobile communications and mentioned as an example the use of a GSM telephone to listen to e-mails. According to the appellant, this example implied an arrangement in which the conversion of text information (i.e. an e-mail) to audio format took place remotely, for example at an e-mail server, and the resulting audio signal was transmitted to the GSM telephone device such that the user could listen to it. At the time of publication of D11 such a telephone device would normally have been designed for voice telephony applications and would not have had any inherent capability for receiving e-mails. D11 was thus proposing to convert the text information contained in the e-mail into a format which could be transmitted to and rendered on the telephone device.

The claimed invention, on the other hand, related to an arrangement in which a portable device, which could be a mobile telephone, provided text information to a transceiver mounted in a vehicle such that the text information was visually presented on a display mounted in the vehicle and was also converted to audio format using a text-to-speech conversion module for parallel rendering ("playback") via the audio system of the vehicle. The appellant submitted that such an arrangement involving the parallel presentation of text information in visual and acoustic formats was neither disclosed nor rendered obvious by D11.

- XV. At the end of the oral proceedings the chair announced the board's decision.

Reasons for the Decision

1. *Admissibility*

1.1 The appeal is admissible.

2. *Basis for amendments*

2.1 Claim 1 of the appellant's request is directed to a system for enabling a vehicle occupant to view and playback text information provided by a portable electronic device in a vehicle and is evidently based on the embodiment disclosed in [0026] to [0029] of the description according to which information from an electronic device can be transmitted to a transceiver disposed within a motor vehicle and then output to the vehicle's audio system and/or to the display system.

2.2 In the board's judgement, the specification in claim 1 to the effect that the text information provided by the portable electronic device is "in the form of personal calendars, e-mails or telephone directories" is supported by [0029] of the description which discloses that the text information may comprise personal calendars, e-mail messages and telephone directories.

2.3 The specification in claim 1 of a second radio frequency transceiver being configured to communicate with a first radio frequency transceiver in accordance with a wireless communications protocol finds support *inter alia* in [0019], [0026] to [0028] of the description.

- 2.4 The specification in claim 1 to the effect that the wireless communications protocol makes use of the 2,4 GHz ISM band and uses a frequency hopping scheme using 1600 hops/second finds support in [0021] of the description.
- 2.5 According to claim 1, the second radio frequency transceiver provides the text information to the display and also to a text-to-speech module whereby the text information is converted to audio by the text-to-speech module and transmitted to the audio system for playback. In the board's judgement, this specification is supported by [0029] of the description.
- 2.6 The concluding part of claim 1 specifies that a wireless data link is automatically created between the two radio frequency transceivers when the two radio frequency transceivers are within a predetermined proximity. This specification finds support in [0028] of the description.
- 2.7 In view of the foregoing, the board is satisfied that the definition of the matter for which protection is sought in claim 1 of the appellant's request is clear and supported by the description as required by Article 84 EPC 1973. A similar finding applies to claim 2 of the request.
- 2.8 In view of the fact that the passages of the description providing support for the claimed subject-matter are to be found in the application documents as originally filed, the board further concludes that the requirements of Article 123(2) EPC are complied with.

3. *Novelty*

3.1 In the board's judgement, D8 represents the closest prior art to the subject-matter of claim 1 of the appellant's request, in particular the embodiment illustrated in Figs. 4 to 8 of said document and disclosed in the associated text passages (cf. D8: p.13 l.25 to p.22 l.1).

3.2 The aforementioned embodiment of D8 discloses a vehicle information system comprising a display and an audio system mounted in the vehicle (cf. D8: Fig. 5; p.15 l.17-26) and which is thus inherently suitable for enabling a vehicle occupant to view and playback information provided by a portable electronic device.

3.3 D8 further discloses a portable electronic device in the form of a telephone device (cf. D8: p.14 l.18-25) which is configured to communicate with a vehicle information system via a wireless communication link employing an infrared transmitter and receiver (cf. D8: p.14 l.7-13).

3.4 The board judges that the system of claim 1 is distinguished from the disclosure of D8 in the following respects:

- (i) The portable electronic device of claim 1 is wirelessly coupled to the vehicle information system (i.e. the display and audio system mounted in the vehicle) by means of first and second radio frequency transceivers whereby the wireless communication link is automatically established when the two transceivers are within a predetermined proximity to each other and the

communication takes place using a radio frequency protocol which makes use of the 2,4 GHz ISM band, and uses a frequency hopping scheme using 1600 hops/second.

(ii) According to claim 1, the information provided by the portable electronic device to the second transceiver is text information in the form of personal calendars, e-mails or telephone directories.

(iii) The text information is provided to a display mounted in the vehicle and it is also converted to audio format using a text-to-speech module and provided to the audio system mounted in the vehicle for playback.

3.5 In view of the differences noted under 3.4 above, the subject matter of claim 1 is novel over the disclosure of D8.

4. *Inventive step*

4.1 The distinguishing features identified under (i) in 3.4 above relate to provision of a wireless communication link employing a radio frequency protocol whose technical characteristics correspond to those of the Bluetooth standard referred to in [0020] and [0021] of the published application.

4.2 It is noted in this regard that at the claimed priority date the Bluetooth standard, a wireless radio frequency communications protocol having the technical characteristics recited in claim 1, was known *per se*

(cf. D3: in particular the section entitled "The Bluetooth air interface" on p.112-114). Moreover, using the Bluetooth standard to provide a wireless communication link was a known design alternative to an infrared wireless communication link (cf. D3: 1.17-31 of the right-hand col. on p.110).

4.3 The board takes the view that, having regard to the disclosure of D3, the skilled person would not require the exercise of inventive skill to replace the infrared communication link of D8 with a radio frequency communication link based on the Bluetooth standard, i.e. a communication link between a first and second transceiver having the technical characteristics recited in claim 1.

4.4 However, in order to arrive at the subject-matter of claim 1 the system of D8 would have to be further modified to provide the distinguishing features identified under (ii) and (iii) in 3.4 above. The board judges that under the given circumstances such a further modification would not be obvious for the reasons which follow.

4.5 The distinguishing features identified under (ii) and (iii) in 3.4 above relate to the provision and display of text information in the form of personal calendars, e-mails or telephone directories using a display mounted in the vehicle in combination with a parallel acoustic rendering of the text information using an audio system likewise mounted in the vehicle. The text information is provided by a portable electronic device which is wirelessly coupled to the display and audio

- system and is converted to audio format using a text-to-speech module.
- 4.6 The stated aim of D8 is to provide a wireless connection between a telephone device and a vehicular audio system (cf. D8: paragraph bridging p.2 and p.3). D8 is thus primarily concerned with the transmission of an audio signal (i.e. a voice telephony signal) from the telephone device to the vehicular audio system rather than the provision of text information in the form of personal calendars, e-mails or telephone directories.
- 4.7 D8 discloses that it is possible to visually indicate "various telephonic information" by utilising the display function of a head unit for audio and that "telephone information" can be read out and displayed on the display means of the head unit (cf. D8: p.2 l.4-9; p.3 l.3-8). The precise scope of the term "telephonic information" as used in the given context is, however, unclear and the board cannot identify any direct and unambiguous indication to the effect that it is intended to include text information in the form of personal calendars, e-mails or telephone directories as recited in claim 1.
- 4.8 The references in the final paragraph on p.12 of D8 to registered telephone numbers stored in the RAM of the portable telephone and, likewise, to registered telephone number holders could arguably be considered to constitute an implicit disclosure of a "telephone directory". However, as noted by the appellant (cf. Facts and Submissions, item XII. above) these references occur in the context of an embodiment of D8

in which the telephone device is mechanically, rather than wirelessly, coupled to the vehicular information system (cf. D8: Figs. 1-4; p.5 l.4 - p.13 l.24, in particular p.6 l.24 - p.7 l.8) and not in the context of the embodiment illustrated in Figs. 4 to 8 of said document which the board considers to represent the closest prior art to the subject-matter of claim 1 (cf. 3.1 above). In the board's judgement, it is not evident from the disclosure of D8 as a whole that the subject matter disclosed in the final paragraph on p.12 can be combined in an obvious manner with the latter embodiment.

Even if such a combination of features from the aforementioned embodiments were to be contemplated, D8 only discloses a visual indication of "registered telephone numbers". There is no identifiable disclosure in said document of combining a visual indication of text information with a parallel acoustic rendering of the same information using a text-to-speech conversion module. Although l.20-21 of p.13 contains a statement relating to "audio, visual indications of various telephonic information stored in the portable telephone", the board judges that in the given context the reference to "audio ... indications" has to be interpreted as referring to the playback of information recorded and stored in a "voice memory" in audio format (cf. D8: p.13 l.3-6) rather than to a parallel conversion and acoustic rendering of text information displayed in visual format.

- 4.9 The board notes that text-to-speech conversion modules were known *per se* at the claimed priority date as was their use in the context of automotive applications as

evidenced by D11 (cf. D11: final paragraph on p.62; section entitled "Typische Anwendungen" on p.64). Nevertheless, the board finds that the disclosure of D11 would not lead the skilled person to the particular use of such a module as specified in claim 1.

On the basis of the appellant's oral submissions concerning D11 (cf. Facts and Submissions, item XIV. above), the board is satisfied that said document neither discloses nor suggests an arrangement involving the visual display and parallel rendering in audio format of text information provided by a portable electronic device to a vehicular information system via a wireless communication link as recited in claim 1.

4.10 In view of the foregoing, the board judges that the skilled person would not arrive at the combination of features recited in claim 1 in an obvious manner starting from D8.

5. *Observations re D9*

5.1 With respect to D9 (cf. Facts and Submissions, item XIII. above), the board concurs with the appellant's oral submissions to the effect that the portable device of D9 is an input device (cf. D9: "data input device 7", col.6 l.36-39 and Fig.1) which is primarily intended for the transmission of data commands to control the operation of peripheral devices attached to the vehicular information system (cf. D9: col.3 l.66 - col.4 l.15). Thus, the portable input device of D9 is not intended to be used for providing text information to the vehicular information system in the form of personal calendars, e-mails or telephone directories

- for display and parallel acoustic rendering using the vehicular information system.
- 5.2 In one embodiment of D9 (cf. D9: col.12 l.53-59; col.13 l.46-61) the portable input device incorporates the functionality of a telephone handset. However, the board concurs with the appellant's submissions to the effect that according to this embodiment the base unit of the telephone equipment is effectively hardwired to the vehicular information system (cf. D9: Fig.1, reference sign 13). Thus the wireless communication link of this embodiment is only provided between components of the mobile telephone equipment, i.e. between the handset and the base unit, and not between the mobile telephone equipment and the vehicular information system.
- 5.3 D9 discloses text-to-speech conversion means in the form of a digital speech memory and a speech synthesizer (cf. D9: col.2 l.4-50) which are used to produce acoustic output via the audio system of the vehicle (cf. D9: col.5 l.27-29; col.9 l.12-21). However, the board concurs with the appellant's submissions to the effect that the disclosure of D9 in this regard is limited to providing telephone answering announcements to telephone callers, providing audible announcements of coded broadcast traffic advice and piloting instructions from a navigational system and responses to manual inputs to the system (cf. D9: col.2 l.40-49).
- 5.4 It is further noted in this regard that although D9 refers to the storage of "personal data, telephone numbers, address or similar miscellaneous information" (cf. D9: col.7 l.64 - col.8 l.10), this information is

stored in a digital speech memory of the vehicular information system and it is evident from the above-cited passage of D9 that it is information which has been recorded in audio format via a "talk-in device" such as a microphone. Hence the "personal data, telephone numbers, address or similar miscellaneous information" referred to in D9 are not text information and are not provided to the vehicular information system from the portable device via a wireless communication link.

5.5 In the board's judgement, the aforementioned differences between D9 and the subject-matter of claim 1 render D9 more remote from the claimed invention than D8 and are such that the skilled person could not be expected to arrive at the subject-matter of claim 1 in an obvious manner starting from D9.

6. *Observations re D1*

6.1 For the sake of completeness, the following observations are made with respect to D1, which was cited in the decision under appeal. D1 is relevant to the subject-matter of the present application insofar as it discloses the use of a wireless networking protocol which is similar in many respects to the Bluetooth standard to establish ad-hoc connectivity between devices in a vehicle (cf. D1: Section entitled "Pico GPS" on p.12). However, the disclosure D1 in this respect is not, in the board's judgement, prejudicial to the inventive step of claim 1 of the appellant's request.

6.2 In particular, D1 fails to disclose an arrangement in which text information in the form of personal calendars, e-mails or telephone directories is transmitted from a portable electronic device via a wireless communication link to the display and audio system of a vehicle such that a parallel visual and acoustic rendering of the text information is provided as specified in claim 1. Neither, in the board's judgement, can such an arrangement be derived from D1 in an obvious manner on the basis of the available prior art.

7. *Concluding remarks*

7.1 In view of the foregoing, the board concludes that none of the prior art documents referred to above, whether singly or in combination, would lead the skilled person to the system of claim 1 in an obvious manner. On this basis, the board finds that the subject matter of claim 1 of the appellant's request involves an inventive step. A similar finding applies to independent claim 2 of the request.

7.2 The claims of the appellant's request are thus found to comply with the requirements of the EPC.

7.3 The description includes a plurality of further embodiments which do not appear to be covered by the claims, for example, the embodiments relating to performing diagnostics (cf. [0030] et seq.), conducting drive-through transactions (cf. [0037] et seq.), using a programmable key fob (cf. [0039] et seq.), enabling hands-free use of a cellular telephone using the proprietary "Travenote" playback/recording system (cf.

[0043] et seq.), the use of the proprietary "Homelink" system to interface with a garage door opener unit (cf. [0047] et seq.) and the use of a home PC connected to the Internet for downloading information (cf. [0054] et seq.).

- 7.4 Since the description has not yet been adapted, the case is to be remitted to the examining division for the purpose of bringing the description into conformity with the claims.

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 grant a patent on the basis of claims 1 and 2 of the sole request filed at the oral proceedings on 5 July 2011 and a description to be adapted thereto.

The Registrar:

The Chair:

K. Götz

A. Ritzka