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**D E C I S I O N**  
**of 12 January 2006**

**Case Number:** T 1322/04 - 3.4.01

**Application Number:** 99119697.3

**Publication Number:** 1014339

**IPC:** G10L 15/26

**Language of the proceedings:** EN

**Title of invention:**

Provide mobile application services with download of speaker independent voice model

**Applicant:**

GENERAL MOTORS CORPORATION

**Opponent:**

-

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56

**Keyword:**

"Inventive step - no (main request and auxiliary request)"

**Decisions cited:**

-

**Catchword:**

-



Case Number: T 1322/04 - 3.4.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.01  
of 12 January 2006

**Appellant:**

GENERAL MOTORS CORPORATION  
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**Representative:**

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**Decision under appeal:**

Decision of the Examining Division of the  
European Patent Office posted 18 June 2004  
refusing European application No. 99119697.3  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** B. Schachenmann  
**Members:** M. Rognoni  
H. Wolfrum

## Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal, received on 9 August 2004, against the decision of the examining division, posted on 18 June 2004, refusing the European patent application No. 99 119 697.3 (publication No. 1 014 339). The appeal fee was paid on 9 August 2004 and the statement setting out the grounds of appeal was received on 26 October 2004.

II. In the decision under appeal, the examining division held that the subject-matter of the independent claims 1 and 5 filed with a letter dated 22 October 2003 did not involve an inventive step within the meaning of Article 56 EPC, having regard to the following documents:

D1: US-A-5 752 232

D2: US-A-5 764 731.

III. Oral proceedings were held on 12 January 2006 at the appellant's request.

IV. The appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the following documents:

### **Main Request:**

- claims 1 to 11 filed on 22 October 2003,
- revised description pages 2 and 2a filed on 22 October 2003,
- pages 1 and 3 to 12 of the description as originally filed

- figures 1 to 5 (sheets 1/6 to 6/6) as originally filed;

**Auxiliary Request:**

- claims 1 to 7 filed with the statement of grounds of appeal on 26 October 2004.

V. The wording of claim 1 of the main request reads as follows:

*"1. A method of providing mobile application services to a subscriber in a vehicle (10) comprising:*

*providing a service center (20) having a telecommunication apparatus (90) connected to a public switched telephone network (15) and an electronic database (95) containing a data structure associating each of a plurality of points of interest with an identifying speaker independent voice model and a dialable telephone number;*

*providing in the vehicle (10) a wireless telecommunication apparatus (64) for communication over a wireless network (12) to the public switched telephone network (15), the wireless telecommunication apparatus (64) comprising a microphone (71), a speaker (72), means (70,76) for receiving and storing at least one of the identifying speaker independent voice models and its associated dialable telephone number, and means (75, 76, 122) responsive to spoken data matching the stored associated identifying speaker independent voice model for performing automated dialing (132) of the stored dialable telephone number associated therewith;*

*in response to a subscriber request, choosing a point of interest from the electronic database (95) and*

*downloading the associated dialable telephone number and the associated identifying speaker independent voice model of the chosen point of interest to the data storage means (76) in the vehicle (10) through the public switched telephone network (15), the wireless network (12) and the wireless telecommunication apparatus (64) of the vehicle (10), whereby automated dialing thereof may be activated in the vehicle (10) by the subscriber speaking data matching the associated identifying speaker independent voice model."*

Independent claim 5 of the main request is directed to an *"Apparatus for providing mobile application services to a subscriber in a vehicle"* and is essentially based on features for implementing the method of claim 1.

Claim 1 according to the auxiliary request differs from claim 1 of the main request in that it further comprises the following features and steps:

*"wherein the data structure further associates each of the plurality of points of interest with identification data and location data, the method further comprising:*

*providing the wireless telecommunication apparatus (64) in the vehicle (10) with means (66) for displaying identification data and location data stored in the data storage means (76);*

*downloading the associated identification data and location data of the chosen point of interest along with the associated dialable telephone number and identifying speaker independent voice model to the data storage means (76) for display by the display means (66)."*

Independent claim 3 of the auxiliary request is directed to an "*Apparatus for providing mobile application services to a subscriber in a vehicle*" comprising features for implementing the method of claim 1.

VI. The appellant's arguments may be summarised as follows:

Document D2 related to a system and a corresponding method for downloading dialable telephone numbers to a voice operated telephone. The subject-matter of claim 1 according to the main request differed from the method of D2 essentially in that it comprised the provision of an electronic database which contained a data structure associating each dialable telephone number with an identifying speaker independent voice model to be downloaded together with the telephone number and stored in the user's apparatus. Automated dialling of a stored telephone number was performed when the user spoke into the apparatus data matching the identifying speaker independent voice model associated with said telephone number.

Starting from the teaching of D2, the objective problem addressed in the present application consisted in improving the user friendliness and versatility of the known method.

D1 was concerned with a system for downloading to a voice operated device speaker independent voice commands required for a particular application. It was neither intended to be used in a vehicle nor was it related to the downloading of telephone numbers. In particular, this document did not teach to provide a

database associating downloadable telephone numbers with voice models. Thus, a person skilled in the art, wishing to improve the method known from D2, would have had no reason to regard D1 as relevant prior art or to assume that this document might have contained any teaching applicable to the method of D2, in particular since the latter document stressed that there was no universal voice pattern.

However, even if, against the explicit teaching of D2, the person skilled in the art had thought of combining D2 with D1, such a skilled person would not have arrived at the claimed method but rather at a method for providing telephone numbers and further data to a device which was operable by means of speaker dependent voice models.

Hence, the claimed subject-matter involved an inventive step within the meaning of Article 56 EPC.

The method according to the auxiliary request further specified a database comprising telephone numbers associated not only with speaker independent voice models but also with location data, such as addresses, of the corresponding points of interests. As an information service relying on such a unique data structure was neither known from nor suggested by the cited prior art documents, the claimed method and apparatus involved an inventive step.

## **Reasons for the Decision**

1. The appeal is admissible.

2. The present application relates to a method and an apparatus *"for providing mobile application services to a subscriber in a vehicle"* and, in particular, for providing data, such as name, address and telephone number, associated with *"specific points of interest"* (column 1, lines 10 to 20 of the published application). The gist of the present invention consists essentially in associating an *"identifying speaker independent voice model"*, e.g. the name of a restaurant or a hotel, with the corresponding telephone number and in downloading both the identifying speaker independent voice model and the dialable phone number to the subscriber's apparatus, so that the telephone number can be automatically dialled when the subscriber speaks data matching the associated identifying speaker independent voice model (cf column 2, lines 13 to 45).

*Main request*

- 3.1 Document D2, which is considered to represent the closest prior art, relates, *inter alia*, to a method for providing mobile application services to a subscriber in a vehicle (cf column 4, lines 23 to 35), and discloses the following combination of steps recited in claim 1 according to the main request:

- providing a service centre having a telecommunication apparatus connected to a public switched telephone network and an electronic database (see figure 1);
- providing in the vehicle a wireless telecommunication apparatus for communication over



a wireless network to the public switched telephone network (see figures 1 and 6), the wireless telecommunication apparatus comprising a microphone, a speaker, and means for receiving and storing a dialable telephone number;

- in response to a subscriber request, downloading a dialable telephone number to the data storage means in the vehicle through the public switched telephone network, the wireless network and the wireless telecommunication apparatus of the vehicle (see column 7, lines 46 to 57; column 10, lines 21 to 26 and figure 6).

3.2 Furthermore, D2 teaches to make the user's telephone entirely hands-free by means of "a voice keyboard" trained to recognise vocal signals generated by the user and corresponding precisely to keyboard keys (see column 9, lines 13 to 23), or a voice pattern supplied by the user and stored in association with a downloaded telephone number (column 35, lines 17 to 27).

As to the services provided to a subscriber, D2 hints at the possibility of supplying a wide range of user information comprising digital information data bits, graphical data images, image data, audio data etc. (column 32, lines 32 to 51). Hence, the user information referred to in D2 implicitly covers unspecified data concerning a particular "*point of interest*".

3.3 The method according to the appellant's main request differs from the method known from document D2 in that:

- the electronic database contains an identifying speaker independent voice model associated with a dialable telephone number;
- the wireless telecommunication apparatus comprises means for receiving and storing the identifying speaker independent voice models;
- the identifying speaker independent voice model is downloaded to the data storage means in the vehicle together with the associated dialable telephone number so that automated dialling of the number may be activated in the vehicle by the subscriber speaking data matching the associated identifying speaker independent voice model.

By providing a speaker independent voice model to be downloaded together with the required telephone number, the method according to the present invention offers the possibility of identifying and dialling telephone numbers by means of voice commands which require no specific training of the speech recognition system on the part of the user, so that an apparatus installed in a vehicle can be readily used by different persons.

- 3.4 Starting from the method disclosed in D2, the problem addressed in the present application could be defined as increasing the user friendliness and versatility of the known method, as pointed out by the appellant.
- 4.1 Document D1 "relates generally to voice activated devices, and, in particular, to a voice activated device and method for providing access to remotely retrieved data" (column 1, first paragraph).

The system according to D1 (see figure 1 and the corresponding description) comprises a handset 110 which communicates with a voice activated device 120 including a database of phonetic acoustic models. Basic speech sounds (phonemes) are stored in a memory 125 which also includes a dictionary 127 with the phonetic spellings of words and unique identifiers associated with each of such words. The particular phonetic spellings that are stored in the dictionary 127 are received from a remote central office 160 which may comprise a computer or general-purpose processor connected to a plurality of application memory units. Each application memory unit stores the phonetic spellings of certain words used in a particular application. For some applications, the application memory unit also stores application data that are relevant to the particular application (column 4, lines 22 to 29). On a periodic basis, the device automatically dials a pre-programmed telephone number to establish a connection with the remote central office 160 (column 3, lines 53 to 58). The processor at the central office retrieves the phonetic spellings of the applications for whose services the user is registered. This information together with a unique identifier for each word is transmitted to the voice activated device 120.

As the voice recognition is performed locally in the voice activated device using "*speaker independent speech recognition means*", the user need not speak each word at least once prior to using it as a command for the device. This system is thus considerably user friendlier than speaker dependent methods acknowledged

in the introductory part of D1 (see "BACKGROUND OF THE INVENTION").

4.2 According to the appellant, the systems known from D2 and D1 were completely different as to their design and purpose. In particular, D1 related to a voice activated device capable of routinely updating application data stored in its memory. This system, however, did not allow the user to send a request for a specific desired point of interest and did not download voice models for the automatic dialling of the downloaded telephone numbers. Thus, the skilled person would not consider D1 when trying to solve the problem addressed by the present invention.

4.3 The Board agrees with the appellant that D1 does not teach to effect the automatic dialling of telephone numbers downloaded from a service centre by providing speaker independent voice models associated and downloaded with the telephone numbers.

However, D1 is generally concerned with the operation of a voice activated device which relies on speaker independent speech recognition. Its essential teaching consists in storing voice models (phonetic spellings) of voice commands used in different applications at a central location connected to a public switched telephone network and an electronic database, and in downloading, from said electronic database to a wireless, voice activated apparatus, the voice models and the application data relating to the applications for whose services the user is registered.

On the other hand, document D2 explicitly states that *"Various voice recognition schemes may be used to simplify the process of determining and calling a telephone number"* (column 2, lines 39 to 41) and warns that *"such systems generally must be taught to recognize the voice pattern of each individual that uses them, the size of the directory of listings for which such a system can be effective is very much constrained, and generally, these systems operate on a pre-defined directory of telephone numbers"* (column 2, lines 45 to 50). To increase the utility of even the most rudimentary voice processing systems, *"methods are needed to simplify the range of voice commands and signals that a user needs to utter and to reduce the quantity of numbering information that needs to be searched to provide a desired telephone number"* (see column 2, lines 56 to 61). In other words, document D2 clearly stresses the advantage of having a speech recognition method which relies on the recognition of a particular voice command among a limited number of stored commands.

By teaching to download only the speaker independent voice models which are actually needed by the user for a particular application, D1 offers in effect a solution to the problem of reducing the range of voice commands and signals that a user needs to utter, which D2 identifies as one of the challenges facing the designer of a voice operated device (see D2, column 2, lines 56 to 61).

- 4.4 A person skilled in the art, starting from the method known from document D2 and wishing to improve its user friendliness, would have realised the advantage

afforded by the teaching of D1 and, in the opinion of the Board, would have seen no difficulty in applying it to the known method. In doing so, such a skilled person would have arrived at a method falling within the terms of claim 1 according to the appellant's main request without exercising any inventive skills.

4.5 Hence, the subject-matter of claim 1 of the appellant's main request does not involve an inventive step within the meaning of Article 56 EPC.

*Auxiliary request*

5.1 Claim 1 according to the auxiliary request differs from claim 1 of the main request in that it comprises the following features:

- the data structure further associates each of the plurality of points of interest with identification data and location data,
- the method further comprising providing the wireless telecommunication apparatus in the vehicle with means for displaying identification data and location data stored in the data storage means;
- downloading the associated identification data and location data of the chosen point of interest along with the associated dialable telephone number and identifying speaker independent voice model to the data storage means for display by the display means.

5.2 As pointed out above (see item 3.2), document D2 teaches that enhanced user information may be downloaded upon request of the subscriber and that the enhanced user information comprises a broad range of information types (column 32, lines 32 to 55). Though location data are not explicitly mentioned in document D2, it would be obvious to the person skilled in the art to assume that, if required, the system of D2 could provide location data and transmit them to the subscriber.

As to the means for displaying such data, the system according to D2 (see figure 1) comprises also display means for displaying numbers or additional data associated with the phone number.

5.3 As the additional features recited in claim 1 according to the auxiliary request are either known from or suggested by document D2, the subject-matter of this claim 1 also results from an obvious combination of the teaching of D1 with the method known from D2.

6. In summary, the Board finds that none of the appellant's requests is allowable and that, therefore, the present appeal has to be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

R. Schumacher

B. Schachenmann