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Datasheet for the decision of 9 February 2012

Case Number: T 1823/08 - 3.5.02

Application Number: 04018839.3

Publication Number: 1531441

IPC: G08G 1/09

Language of the proceedings: EN

Title of invention:
Off-board navigation system and method for calibrating error using the same

Applicant:
SAMSUNG ELECTRONICS CO., LTD.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Keyword:
"Novelty - no (both requests)"

Decisions cited:
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Catchword:
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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1823/08 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 9 February 2012

Appellant: (Applicant)
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 6 February 2008 refusing European patent application No. 04018839.3 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: M. Ruggiu
Members: R. Lord
R. Moufang

Summary of Facts and Submissions

I. This is an appeal of the applicant against the decision of the examining division to refuse European patent application No. 04 018 839.3. The reasons given for the refusal were that claim 1 of the main request then on file was not clear (Article 84 EPC), and that the subject-matter of claim 1 of the auxiliary request then on file did not involve an inventive step (Article 56 EPC).

II. The following document of the state of the art has been cited during the procedure before the first instance:

D1: US 2003/0055555 A.

III. In a communication accompanying a summons to oral proceedings, dated 22 August 2011, the board informed the appellant *inter alia* of its preliminary opinion that the subject-matter of claim 1 of the main request filed with the grounds of appeal was not new and the subject-matter of claim 1 of the auxiliary request filed with the grounds of appeal did not involve an inventive step.

Oral proceedings before the board took place on 9 February 2012. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request or the auxiliary request, both filed with the grounds of appeal dated 11 June 2008.

IV. Claim 1 of the appellant's main request reads as follows:

"A navigation system, comprising:
a server (100) for calculating a predetermined path using a pre-stored map in response to a request (S102) from a terminal, and transmitting calibration information of a digital map corresponding to a position which allows a sensor calibration operation to be performed; and
the terminal for requesting the calculations, receiving the calibration information from the server, comparing the position which allows the sensor calibration operation to be performed with a position measured by a sensor unit (210) embedded in the terminal, and performing the sensor calibration operation by calibrating output data of said sensor unit based on the position comparison."

Claim 1 of the appellant's auxiliary request reads as follows:

"A navigation system, comprising:
a server (100) for calculating a predetermined path using a pre-stored map in response to a request (S102) from a terminal, and transmitting calibration information of a digital map corresponding to a position which allows a sensor calibration operation to be performed; and
the terminal for requesting the calculations, receiving the calibration information from the server, comparing the position which allows the sensor calibration operation to be performed with a position measured by a sensor unit (210) embedded in the terminal, and performing the sensor calibration operation based on the position comparison;

wherein the calibration information is section information necessary for performing the sensor calibration operation in relation to the path calculated by the server; and
wherein the section contains an optimum point for calibrating the sensor unit."

V. The appellant essentially argued as follows:

The subject-matter of claim 1 of the main request was new with respect to D1, firstly because it was apparent from paragraphs [0141] to [0144] of D1 that the correction applied in the method of that document was in the form of pseudorange data, which would not be applied to the output data of the sensor unit, but would instead be applied within the sensor unit, and secondly because the data used for calibration in that document was part of the path guide data, so that D1 did not disclose the separate transmission of calibration information within the meaning of the application.

The system of claim 1 of the auxiliary request was further distinguished from that of D1 because that document did not disclose a calibration section which was distinct from the manoeuvre window, and because the term "optimum point" in the claim was more restricted in meaning than the manoeuvre locations of D1. The first of these differences applied particularly with respect to the start point of the calibration section, and was more clearly expressed in claim 9 of that request. The second difference also resulted in the presence of an inventive step in the claimed subject-matter, because in the claimed system calibration

information was only transmitted for the optimum points, not for all manoeuvre points, resulting in the advantage that less data had to be transmitted from the server to the terminal.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request - Novelty (Article 54 EPC)*

2.1 Document D1 describes a navigation system comprising a server for calculating a predetermined path using a pre-stored map in response to a request from a terminal (see for instance Figs. 1 and 2 and the abstract). In paragraphs [0193] and [0194], referring to Fig. 17, D1 further describes a technique for correcting or calibrating the output of the GPS receiver (see also paragraphs [0285] to [0302]). In this technique, the server transmits calibration information of a digital map corresponding to a position which allows a sensor calibration operation to be performed (see paragraph [0194]: "*the in-vehicle system uses the downloaded location of the maneuver point to compute its own GPS correction data*"). As described in paragraph [0194], the terminal receives the calibration information (latitude and longitude of the manoeuvre point) from the server, compares the position which allows the sensor calibration operation to be performed (the downloaded manoeuvre point) with a position measured by a sensor unit embedded in the terminal (the manoeuvre position detected by the dead-reckoning sensor), and performs the sensor calibration operation by

calibrating output data of the sensor unit based on the position comparison ("*the in-vehicle system computes the deviation in latitude and longitude at the maneuver point and applies these deviations as corrections to the latitude and longitude position estimates output from its GPS receiver*"). The navigation system of D1 thus includes all the technical features of claim 1 of the appellant's main request, so that the subject-matter of that claim is not new within the meaning of Article 54 EPC.

2.2 The appellant argued with reference to paragraphs [0141] to [0144] of D1, in particular comparing the alternatives of paragraphs [0143] and [0144], that paragraph [0290] did not disclose that the calibration based on the manoeuvre point made a correction on the basis of latitude and longitude, rather than GPS pseudorange data, and hence did not disclose correction of the output data of the sensor unit as claimed. The board is not convinced by this argument, firstly because paragraphs [0141] to [0144] of D1 relate to a different aspect of the system calibration, and secondly because, even if it is not clear from the disclosure in paragraph [0290] of that document that the calibration is based on latitude and longitude (i.e. calibration of the output data of the sensor), this is unambiguously disclosed in paragraph [0194] as discussed above.

2.3 The appellant has also argued that in the claimed invention the server generates path guide information and separate calibration information, whereas D1 merely used the manoeuvre points, which are part of the path guide information, for the purpose of calibration. The

board does not find this argument convincing, because it sees no reason to consider that the downloaded location of the manoeuvre point disclosed in D1, as discussed above, cannot be considered as calibration information in the sense of the present claim, or indeed of the application as a whole.

3. *Auxiliary request - Novelty (Article 54 EPC)*

3.1 Compared to claim 1 of the main request, claim 1 of the appellant's auxiliary request contains the additional features that "*the calibration information is section information necessary for performing the sensor calibration operation in relation to the path calculated by the server*" and that "*the section contains an optimum point for calibrating the sensor unit*".

3.2 Concerning the first of these features, the document D1 describes (see lines 1716 to 1720 of Fig. 17) that the calibration process is initiated on entry into a "*maneuver detection window*", which according to paragraph [0301] is a distance-based window around the manoeuvre point. Given this teaching, the downloaded location of the manoeuvre point discussed in paragraph 2.1 above can be considered as section information (i.e. the mid-point of the section) as now defined in the claim. The appellant has argued in this context that the claimed invention is distinguished from D1 in that the start point of the calibration section is different from the manoeuvre notification point of the path guide information. The board notes however that D1 (see paragraph [0298]) also explicitly distinguishes between the "*maneuver notification window*" (see Fig. 17, lines

1712 and 1713 and paragraph [0300]) and the "*maneuver detection window*" (see Fig. 17, lines 1716 and 1717 and paragraph [0301]), so that there is no difference between the system of D1 and the claimed invention in this respect.

3.3 Concerning the second definition introduced in this claim (the "optimum point" definition), the board sees no reason to deviate from the conclusion of section 2.7 of the decision under appeal that there is no difference between a manoeuvre point used for calibration in D1 and an "*optimum point for calibrating the sensor unit*" as defined in the present claim. The board notes in particular that the question as to whether or not a particular manoeuvre point could be used to carry out calibration of the sensor unit depends not only on the nature, e.g. physical layout, of the manoeuvre point (as implied by the appellant's argumentation that the usable points could be identified by the server so that only the information relating to these points would be sent to the vehicle), but also on factors about which the server could not be expected to have information (such as the driving style of the individual driver, or the local traffic conditions at the time when the manoeuvre is performed). On this interpretation, "*optimum point for calibrating the sensor unit*" can be understood as meaning only a manoeuvre point which is potentially usable for calibration, which the board considers as identical to the manoeuvre points of D1.

3.4 Therefore the board concludes that, if the interpretation of the claim discussed in the previous paragraph is assumed, then the subject-matter of

claim 1 of the appellant's auxiliary request is also not new with respect to D1.

4. *Auxiliary request - Inventive step (Article 56 EPC)*

Even if the board were to accept that the expression "*optimum point for calibrating the sensor unit*" has a more restricted meaning, this would not result in the presence of an inventive step, since merely using a calibration point which is in some unspecified way optimal must be considered as being in itself trivial. The appellant's argument that this results in a saving of transmission capacity, because only the data on the optimum points is transmitted to the vehicle, is not considered relevant since this is neither specified in the claim nor disclosed in the application.

5. *Claim 9 of the auxiliary request*

During the course of the oral proceedings before the board, the appellant suggested that the inventive concept of the auxiliary request was more clearly specified in claim 9 of that request, in which context he referred in particular to steps (c) and (d) of the method defined in that claim. The board understands that these steps correspond to the steps S130, S140 and S150 of Fig. 6 of the application. On the basis of this interpretation, it seems to the board that the only difference between this method and that of D1 is that in the claimed method the calibrating step is carried out only after the vehicle has left the calibration section, whereas in D1 it is implicit that if the manoeuvre point is successfully detected, then the calibration is carried out without any further delay.

It is not apparent to the board what technical purpose might be served by the additional delay in the claimed method. It is conceivable that it might result in simplification of the programming of the terminal, but such an optimisation would fall within the scope of normal practice for the skilled person. In this context the board notes that the application provides no indication as to the purpose of this difference, and also that, unlike D1, the application contains no teaching as to the procedure to be carried out if the manoeuvre is not successfully detected.

6. Since neither of the appellant's requests defines subject-matter meeting the requirements of the EPC regarding novelty and inventive step, the board concludes that the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

C. Eickhoff M. Ruggiu