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**Datasheet for the decision  
of 12 January 2011**

**Case Number:** T 0571/06 - 3.5.02

**Application Number:** 97116904.0

**Publication Number:** 0833291

**IPC:** G08G 1/0968

**Language of the proceedings:** EN

**Title of invention:**

Vehicle navigation apparatus and storage medium

**Patentee:**

Aisin AW Co., Ltd.

**Opponent:**

Harman/Becker Automotive Systems GmbH

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 56, 84, 123(2)

**Relevant legal provisions (EPC 1973):**

-

**Keyword:**

Inventive step - yes (after amendment)

**Decisions cited:**

-

**Catchword:**

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Case Number: T 0571/06 - 3.5.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.02  
of 12 January 2011

**Appellant:** Harman/Becker Automotive Systems GmbH  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
6 February 2006 concerning maintenance of  
European patent No. 0833291 in amended form.

**Composition of the Board:**

**Chairman:** M. Ruggiu  
**Members:** G. Flynn  
P. Mühlens

## Summary of Facts and Submissions

- I. The proprietor and the opponent appealed against the interlocutory decision of the opposition division that, taking account of the amendments made according to the proprietor's third auxiliary request at that time, the patent and the invention to which it relates met the requirements of the EPC.

In the opponent's letter of 13 June 2006, setting out the grounds for appeal, the following prior art document was referred to for the first time in the procedure:

E6 = JP-A-H08-201091 and an English translation.

- II. The Board summoned the parties to oral proceedings. In an annex to the summons the Board made observations on the relevant issues.

- III. Oral proceedings were held before the Board on 12 January 2011.

The opponent requested that the decision under appeal be set aside and that the patent be revoked.

The proprietor requested that the decision under appeal be set aside and that the patent be maintained in amended form in the following version:

- Claim 1 of the main request filed at the oral proceedings of 12 January 2011
- Description pages 2, 2a, 2b, 3 and 8 filed with the letter of 10 December 2010; pages 4 to 7 of the patent specification
- Drawings figs 1 to 12 of the patent specification.

IV. Independent claim 1 according to the main request filed at the oral proceedings of 12 January 2011 (hereinafter "present claim 1") reads as follows:

*"A vehicle navigation apparatus comprising:*

*present position detection means (2) for detecting a present position of a vehicle;*

*out-of-the-route recognition means (S12) for recognizing occurrence of an out-of-the-route;*

*route search processing selection means (S21) for, when said out-of-the-route recognition means recognizes occurrence of an out-of-the-route, selecting a near-the-present-position route search processing (S18) or an entire route search processing (S22) to the destination;*

*route search means (S18, S22) for searching in conformity with a route search processing selected by said route search processing selection means;*

*out-of-the-route condition judgment means (S16, S17) for judging condition upon occurrence of an out-of-the-route as recognized by said out-of-the-route recognition means by judging, if a present location of the vehicle is on a search-executable road, that a vehicle driver intentionally caused the out-of-the-route when the vehicle went straight by passing through a predefined number of intersections to be turned and/or the out-of-the-route occurred on a specific type of road; and*

*guidance means for providing guidance along a route as searched by the route search means,*

*wherein said route search processing selection means (S21) selects the entire route search processing to destination when said out-of-the-route condition judgment means judges upon occurrence of an out-of-the-route that a vehicle driver intentionally caused the out-of-the-route."*

- V. The opponent's arguments relevant to the present decision may be summarised as follows:

Present claim 1 was filed late. It includes many changes and some of its features are presented in a different order, giving them a different sense. The amendments are not merely a reaction to the clarity objections that had been raised against an earlier auxiliary request 1 that was filed with the letter of 10 December 2010 - in particular against the feature "... *judging whether guidance is necessary or not by comparing a road at a certain location whereat the vehicle becomes out-of-the-route with a road along which the vehicle is presently travelling*". Present claim 1 should not be admitted into the procedure.

Present claim 1 mentions two conditions for judging that the driver intentionally caused the out-of-the-route and these two conditions are presented in an "and/or" combination. Whilst the description discloses each of the conditions being used separately, it does not disclose them being used together. Hence, the "and" of the "and/or" combination of the two conditions was

not originally disclosed and its introduction into claim 1 adds fresh subject-matter in contravention of Article 123(2) EPC.

Present claim 1 does not meet the requirements of Article 84 EPC in that it is not clear what relevance the specific type of road has in terms of judging the intention of the driver when an out-of-the-route event occurs. The patent discloses only one example of a specific road type - a "loop-like" road - and no clear link is disclosed between this type of road and the driver's intention when going out of the route.

Document E6 discloses a guidance system that performs a return route search (back to the planned route) when a vehicle goes off-route. When the vehicle goes off-route a predetermined number of times, the guidance system judges that the driver left the planned route intentionally and carries out a whole route search. In view of this disclosure, document E6 represents the closest prior art and hence, because of its relevance, E6 should be admitted into the procedure.

The subject-matter of present claim 1 is novel over document E6, but does not involve an inventive step. One of the two conditions that may be used according to present claim 1 to judge the driver's intention is the condition that *the vehicle went **straight** by passing through a predefined number of **intersections to be turned***. There exist only a limited number of ways in which a vehicle can leave a planned route. Going straight-on at a junction that was to be turned is merely one of those ways. It would be a routine matter for the skilled person implementing E6 to choose to

judge the driver's intention based on the way of leaving the route that is presently claimed from among the limited number of ways that exist.

VI. The proprietor's arguments relevant to the present decision may be summarised as follows:

The opponent introduced document E6 with the letter of 13 June 2006 setting out the grounds for its appeal. Document E6 should not be admitted into the proceedings, as the opponent failed to provide a proper feature analysis of the features disclosed in document E6 with the letter dated 13 June 2006.

The amendments according to present claim 1 aim to clarify the previously claimed feature of *judging whether guidance is necessary or not* and are therefore a reaction to the objections raised during the proceedings. Present claim 1 does not add fresh subject-matter as the amendments have a basis in the description and in claims 2 and 3 as filed.

There is no hint in document E6 to consider the type of road or the type of deviation from the planned route when judging the driver's intention upon an out-of-the-route event. The skilled person implementing E6 at the priority date of the present patent has to provide the system with means to determine that an out-of-the-route event has occurred. This would be done at that time by determining the vehicle's current position, for example by GPS, dead reckoning and map matching, and determining whether the current position goes too far from the link data representing the planned route. The system would not have to determine how the vehicle

drove to get off the route, but merely whether the current position is off-route. There is no hint in E6 for the skilled person to consider how the vehicle drove to get off the route.

The effect provided by the invention is to enable different types out-of-the-route event to be differentiated, which is useful in determining the driver's intention.

### **Reasons for the Decision**

1. The appeals are admissible.
2. *Document E6*

The Board considers that the opponent's analysis of document E6 in the letter of 13 June 2006 was sufficient to enable the proprietor and the Board to assess the document's relevance.

Furthermore, document E6 is particularly relevant to the claimed subject-matter in that it discloses to carry out a whole route search (i.e. an "entire route search processing") rather than a return route search (i.e. a "near-the-present-position route search processing") when it is judged that it was the **driver's intention** to deviate from the planned route (see paragraph [0012] of the translation). In view of the document's evident relevance to the idea of judging the driver's intention, the Board decided to admit it into the proceedings.



3. *Amendments*

3.1 Present claim 1 differs from claim 1 of the auxiliary request 2 that had been filed with the letter of 10 December 2010 principally in the deletion of the feature:

*"judging, ..., whether guidance is necessary or not by comparing a road at a certain location whereat the vehicle becomes out of the route with a road along which the vehicle is presently travelling",*

and its replacement by the feature:

*"judging, ..., that a vehicle driver intentionally caused the out-of-the-route when the vehicle went straight by passing through a predefined number of intersections to be turned and/or the out-of-the-route occurred on a specific type of road".*

The deleted feature had been objected to by the opponent for lack of clarity and during the oral proceedings the Board had expressed the view that the feature of *judging whether guidance is necessary* in particular lacked clarity in the context of the application as a whole. The Board considered therefore that the amendment represented an attempt to overcome the clarity objection. Furthermore, the Board considered that any issues arising from the amendment could be reasonably dealt with without adjournment of the oral proceedings. For these reasons the Board decided to exercise the discretion provided for in Article 13 of the Rules of Procedure of the Boards of

Appeal to admit the amendment to claim 1 into the procedure.

- 3.2 The newly introduced feature of "*judging, ..., that a vehicle driver intentionally caused the out-of-the-route*" is disclosed - either literally or with similar wording - at various locations in the description as filed (see for example EP 0 833 291 A1: page 6, lines 50 to 52; page 7, lines 7 to 10 and lines 44 and 45; and page 8, lines 14 to 16).

Furthermore, the feature of judging that the out-of-the-route is intentional is disclosed in combination with the condition that *the vehicle went straight by passing through a predefined number of intersections to be turned* (see EP 0 833 291 A1, page 7, lines 7 to 10) as well as in combination with the condition that *the out-of-the-route occurred on a specific type of road* (see EP 0 833 291 A1, page 7, lines 36 to 51 and page 16, claims 2 and 3). Furthermore, claims 2 and 3 of the application as filed disclose these two conditions being applied together - i.e. the "and" of the claimed "and/or" combination of these conditions.

For these reasons the Board concludes that the amendments made according to present claim 1 are not such that the application as amended contains subject-matter which extends beyond the content of the application as filed and hence do not offend Article 123(2) EPC.

The amendments have the effect of limiting the claimed subject-matter with respect to claim 1 as granted (Article 123(3) EPC).

3.3 The opponent raised objection under Article 84 EPC to the feature "*judging ... that a vehicle driver intentionally caused the out-of-the-route when ... the out-of-the-route occurred on a specific type of road*", which has been introduced into present claim 1.

The Board finds the wording of this feature in itself to be clear and concise.

Furthermore, the patent gives several examples of how the type of road on which an out-of-the-route event occurred may be a useful indication of whether or not the driver intentionally caused the out-of-the-route event.

In particular, according to the patent as granted (see EP 0 833 291 B1, paragraph [0047]), figure 11 shows an example which is designed to select either one of the nearby-area route search and full-range route search in conformity with the **type of a road** on which the vehicle becomes out of the route, wherein the full-range route search processing is to be done when it is judged that the road type is a **loop-like lane, toll-road, or the like**.

The example is explained in further detail in paragraph [0048], where it is stated that if the vehicle keeps running straightforwardly without dropping down at the branch point Q1, then it is judged that the **driver intentionally** causes such out-of-the-route event thus permitting effectuation of the full-range route search.

Paragraph [0048] of the patent continues, giving further examples of "*cases where performing a full-range route search toward a destination remains better in possibility of obtaining good results than returning to the original route upon occurrence of an out-of-the-route event*", mentioning specifically "*roads or streets which have apparently distinguishable entrance and exit points, such as toll roads or agricultural paths*".

For these reasons, the Board considers that the above-mentioned feature is also adequately supported by the description, and hence this feature fulfils the requirements of Article 84 EPC.

4. *Novelty and inventive step*

- 4.1 The Board considers document E6 to be the closest prior art as it discloses to carry out a whole route search (i.e. an "entire route search processing") rather than a return route search (i.e. a "near-the-present-position route search processing") when it is judged that it was the driver's intention to deviate from the planned route (see paragraph [0012] of the translation).

In particular, document E6 discloses a route guidance system which provides the vehicle with route guidance along an optimal route obtained by a search (see paragraph [0001]). E6 explains that even when route guidance is provided along an optimal route, a vehicle may get off the optimal route due to a driver's error or the like (see paragraph [0004]) or when the driver allows the vehicle to get off an optimal route, with an intention of changing a driving route (see paragraph [0010]). According to document E6, this situation was

dealt with in the prior art either by carrying out a re-search for a new optimal route (see paragraph [0004]) or by searching a return route for returning the vehicle to an original optimal route (see paragraph [0005]). In the Board's view these two types of searches correspond to an entire route search processing and a near-the-present-position route search processing as specified in present claim 1.

One of the objects of the invention in E6 is to provide a route guidance system in which a re-search can be carried out such that it reflects a driver's intention in a case where a driver intends to change a route (see paragraph [0011]). As the means for solving this problem E6 states that when the return route search is carried out repeatedly, it is judged that a driver intends to change a route, thereby changing over to a whole route search instead of searching for the return route (see paragraphs [0012] and [0016]).

The navigation apparatus disclosed in document E6 comprises a locator 16 for detecting the present position of the vehicle (see paragraphs [0021] and [0024]). An off-route judging portion 32 compares the route data of the optimal route with data of the present position of the vehicle detected by the locator 16 to judge whether the vehicle is off the optimal [optimal] route (see paragraph [0030]).

From paragraph [0045] onwards, E6 describes a second embodiment, the operation of which is shown in the flowchart of figure 7. According to paragraph [0048], when a judgement is made in the step S6 of figure 7 that the vehicle is off an optimal route, in principle

a return route search is carried out and a return route obtained by this search is used to set an optimal route and provide route guidance (steps S9, S10, S3). A counter is incremented when the vehicle is off the route (step S7) and the counter value indicates how many times the vehicle is off an original optimal route. If the off-route frequency  $C$  is equal to or less than a predetermined set number of times  $C_0$ , the return route search is carried out again (steps S8, S9). However, if the frequency  $C$  exceeds the predetermined set number of times  $C_0$ , after the link cost of the original optimal route is increased, the whole route search is carried out, and then the counter is reset (steps S8, S11, S12, S13). In paragraph [0049] it is explained that when the return route search is carried out a predetermined number of times after the vehicle gets off the original optimal route, a new optimal route to the destination is searched for instead of setting the return route acquired by the return route search as a part of the new optimal route.

- 4.2 According to present claim 1, the out-of-the-route condition judgment means judges that a vehicle driver intentionally caused the out-of-the-route when (emphasis and references added):
- (a) the **vehicle went straight by passing through** a predefined number of **intersections to be turned;** and/or
  - (b) **the out-of-the-route occurred on a specific type of road.**

Document E6 does not disclose to judge upon either of these two conditions (a) or (b). Thus, claim 1 has to be considered novel over document E6, Article 54 EPC.

4.3 As set out above, the navigation apparatus of document E6 judges whether the vehicle is off-route by comparing the route data of the optimal route with data of the present position of the vehicle as detected by a locator 16. There is no suggestion in E6, when judging the driver's intentions, to take account of the way in which the vehicle came to be in the off-route position. In order to determine whether the vehicle has gone straight by passing through a predefined number of intersections to be turned, as presently claimed, the apparatus of E6 would have to be provided with means to establish not merely that the vehicle's location is off-route, but also how the vehicle came to be in that location. In the Board's view the skilled person would find no incentive, either in E6 or in any of the other cited documents, to make such a modification to the apparatus of document E6.

Furthermore, none of the cited documents discloses a vehicle navigation system that judges a vehicle driver's intention by judging whether an out-of-the-route occurred on a specific type of road (condition (b)). The opponent has not argued that this feature of present claim 1 would be obvious for the skilled person and the Board sees no reason to raise such objection.

4.4 For the reasons set out above the Board considers that the subject-matter of present claim 1 is not obvious to the person skilled in the art. Hence, the requirements for inventive step are met, Article 56 EPC.

5. In view of the above, the Board accedes to the proprietor's request.

## Order

### For the above reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in amended form in the following version:

#### **Description:**

- Pages 2, 2a, 2b, 3 and 8 filed with the letter of 10 December 2010
- Pages 4 to 7 of the patent specification

#### **Claim:**

- No. 1 of the main request filed at the oral proceedings of 12 January 2011

#### **Drawings:**

- Figs 1 to 12 of the patent specification.

The Registrar:

The Chairman:

U. Bultmann

M. Ruggiu