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**Datasheet for the decision
of 16 April 2021**

Case Number: T 2756/17 - 3.4.02

Application Number: 00310804.0

Publication Number: 1111336

IPC: G01C21/26, G01C21/36

Language of the proceedings: EN

Title of invention:

Method and system for providing an electronic horizon in an advanced driver assistance system architecture

Patent Proprietor:

HERE Global B.V.

Opponent:

Elektrobit Automotive Gmbh

Headword:

Relevant legal provisions:

EPC 1973 Art. 100(c)

EPC Art. 123(2)

RPBA Art. 13(1)

Keyword:

Main and first auxiliary request - Amendments - allowable (no)
Late-filed second auxiliary request - admitted (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Chambres de recours

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Case Number: T 2756/17 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 16 April 2021

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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted on
19 October 2017 concerning maintenance of the
European Patent No. 1111336 in amended form.

Composition of the Board:

Chairman R. Bekkering
Members: C. Kallinger
G. Decker

Summary of Facts and Submissions

- I. In its interlocutory decision the opposition division came to the conclusion that the subject-matter of claim 1 of the European Patent 1 111 336 as granted was originally disclosed but was not new. The patent as amended according to the auxiliary request (labelled auxiliary request 3 in the opposition division's decision) met the requirements of the EPC.
- II. The opponent lodged an appeal against the opposition division's decision and requested that the decision under appeal be set aside and that the European patent be revoked.
- III. The patent proprietor lodged an appeal against the opposition division's decision and requested that the decision under appeal be set aside and that the opposition be rejected. As an auxiliary request, it requested that the appeal of the opponent be dismissed, i.e. that the patent be maintained in amended form according to the opposition division's interlocutory decision.
- IV. A summons to oral proceedings was issued with a letter dated 24 October 2019.
- V. In a communication according to Article 15(1) RPBA 2020 dated 10 March 2020 the board provided its provisional opinion on the merits of the appeal.
- VI. With a letter dated 24 April 2020, the patent proprietor filed a set of amended claims according to a second auxiliary request.

VII. Oral proceedings were held on 16 April 2021.

VIII. The parties' final requests were as follows:

The appellant (patent proprietor) requested that the decision under appeal be set aside and that the opposition be rejected. As a first auxiliary request, it requested that the appeal of the opponent be dismissed. As a second auxiliary request, it requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the claims according to the second auxiliary request filed with the letter dated 24 April 2020.

The appellant (opponent) requested that the decision under appeal be set aside and that the European patent be revoked.

IX. Claim 1 of the main request, i.e. the patent as granted, reads as follows:

"A method of providing data about roads around a motor vehicle (108) comprising the step of:

accessing data that represent segments of roads of a road network located in a geographic region; characterised in that the method comprises the steps of:

determining potential paths along roads onto which the motor vehicle could travel from a current position of the motor vehicle within a first threshold determined based on the data needs of at least one driver assistance application (200);

providing data representing the determined potential paths to the at least one driver assistance application (200);"

- X. Claim 1 of the first auxiliary request, i.e. the patent as maintained in amended form, comprises the following additional feature:

"... wherein the at least one driver assistance application includes one of an adaptive headlight aiming, adaptive cruise control, obstruction detection, obstruction avoidance, collision avoidance and adaptive shift control application."

- XI. Claim 1 of the second auxiliary request reads as follows (amendments in comparison to the first auxiliary request have been marked by the board):

"A method of providing data about roads around a motor vehicle (108) comprising the step of:

accessing data that represent segments of roads of a road network located in a geographic region; characterised in that the method comprises the steps of:

determining potential paths along roads onto which the motor vehicle could travel from a current position of the motor vehicle within a first threshold determined based on the data needs of at least one driver assistance application (200) and a current speed and a direction of the motor vehicle (108);

providing data representing the determined potential paths to the at least one driver assistance application (200), wherein the at

least one driver assistance application includes one of an adaptive headlight aiming, adaptive cruise control, obstruction detection, obstruction avoidance, collision avoidance and adaptive shift control application."

Reasons for the Decision

1. Main request - Amendments - Article 100(c) EPC 1973

1.1 In comparison to claim 1 as originally filed, claim 1 of the patent as granted has been amended as indicated in the following (highlight and feature numbering added by the board):

- 1) A method of providing data about roads around a vehicle comprising the step of:
- 2) accessing data that represents segments of roads of a road network located in a geographic region;

characterised in that the method comprises the steps of:

- 3a) determining potential paths along roads onto which the motor vehicle could travel
- 3b) from a current position of the motor vehicle
- 3c) within a first threshold
- 3d) based on the data needs of at least one driver assistance application; and
- 4) providing data representing the determined potential paths to the at least one driver assistance application.

1.2 Originally filed documents

All references given in the following discussion are to document EP 1 111 336 A1, i.e. the application as published, the content of which is identical to the application documents as originally filed.

1.3 The patent proprietor argued that claim 1 did not comprise added subject-matter. In particular, the combination of features 3c and 3d was directly and unambiguously disclosed in the application as filed.

Paragraph [0066] of the description defined that the electronic horizon *"represents the road ahead of (or possibly behind) the vehicle"* and was a *"representation of potential driving paths [...] from the current vehicle position to the aforementioned extents"*. Thus, the electronic horizon comprised a plurality of paths and the extents of the electronic horizon comprised the size/length of those paths, i.e. how far those potential paths extended from the vehicle position. This was consistent with the disclosure of paragraph [0068], which stated that the extents of the electronic horizon may be considered as boundaries.

The same paragraph also clearly disclosed that the *"extents of the electronic horizon"* were determined such that the potential paths were *"sufficiently large so that the driver assistance applications [...] are provided with all the data they may need"*.

In addition, also paragraphs [0159] and [0163] linked the data needs of the driver assistance applications to the extents of the electronic horizon.

The application as originally filed therefore provided the general teaching that the data needs of the driver assistance application were related to the extents of the electronic horizon.

With respect to the claimed wording, i.e. the *"first threshold"*, the patent proprietor argued that the *"first threshold"* mentioned in the claims was not directly interchangeable with the feature *"building threshold cost"* as mentioned in the description (see paragraphs [0088] to [0101]). The *"building threshold cost"* had rather to be considered an embodiment of the *"first threshold"* as mentioned in the claims.

In this respect the patent proprietor also referred to originally filed dependent claims 2 to 7 which defined further features of the *"first threshold"* of originally filed claim 1. In accordance with these claims, paragraphs [0089] to [0091] disclosed that the more general concept of the *"costing functions"*, rather than the specific *"building threshold cost"*, allowed *"a driver assistance application [...] to specify whether certain factors should affect building of the electronic horizon"*. The list of the factors that were taken into account by the costing functions were similar/identical to the factors in claims 2 to 7 as filed which further characterised the *"first threshold"* as disclosed in originally filed claim 1.

In contrast to this, the *"building threshold cost"* referred to in the description (see paragraphs [0092] to [0101]) was not described as a function of any of the factors in claims 2 to 7, but was instead discussed as *"a threshold to determine when the process extending the path from the current vehicle position should be stopped"*.

This confirmed that the "*building threshold cost*" was an example embodiment of the more general concept characterised by the feature "*first threshold*" in claim 1 which had to be understood as a broader concept that determined the potential paths, i.e. the "*extents of the electronic horizon*".

Finally, also paragraph [0159] disclosed that the driver assistance application could provide outputs indicating the "*extents needed for the electronic horizon*".

In conclusion, the feature "*first threshold*" of claim 1 was a concept but not a specific value such as the disclosed building threshold cost. The "*first threshold*" as used in claim 1 was conceptually equivalent to the defining of the extent of the electronic horizon. As paragraph [0068] provided the clear link between the extent of the electronic horizon and the data needed by the driver assistance applications, the combination of features 3c and 3d was originally disclosed.

- 1.4 The opponent argued that the application as filed did not disclose the combination of features 3c and 3d.

The feature "*extents of the electronic horizon*" as used throughout the original description was not equivalent to the feature "*first threshold*" as used in claim 1. It was therefore not possible to attribute the technical aspects of the "*extents of the electronic horizon*" as disclosed in paragraph [0068] to the "*first threshold*".

The opponent argued in particular that it was clear from the description (see paragraphs [0066], [0068] and

[0091]) that the *"extents of the electronic horizon"* constituted a set of road segments within a larger road network. In contrast to this, the description (see paragraph [0095]) explicitly defined that the *"'building threshold cost' (or 'first threshold')"* was *"a threshold to determine when the process extending the path from the current vehicle position should be stopped"*. From these definitions it was evident that the *"first threshold"* was a (numerical) value whereas the *"extents of the electronic horizon"* were a set of road segments.

The fact that the *"first threshold"* was not equivalent to the *"extents of the electronic horizon"* was confirmed by the fact that the latter was determined by a costing function to which the *"first threshold"* was only one of many inputs (see paragraphs [0089] and [0091]). The process of building the electronic horizon used *"two threshold cost values"* (see paragraphs [0092] and [0100]), i.e. a second threshold was applied in addition to the *"first threshold"* (see paragraph [0098]).

Finally, the description (see paragraphs [0069], [0096] and [0097]) disclosed that the cost associated with each path in the electronic horizon was at least as large as the *"building threshold cost"*, i.e. that the *"extents of the electronic horizon"* were larger than the *"first threshold"*.

In conclusion, the features *"first threshold"* as used in claim 1 and the *"extents of the electronic horizon"* were two logically different entities that were in no way equivalent. Therefore, any teaching in regard to the *"extents of the electronic horizon"* could not be attributed to the claimed *"first threshold"*. This was

in particular the case for the instances in which the feature "*extends of the electronic horizon*" was linked to the data need of the drivers assistance applications (see paragraphs [0068], [0091] and [0159]).

- 1.5 The board is of the opinion that the application as filed does not disclose the claimed combination of features 3c and 3d.

Firstly, the combination of these features is not explicitly disclosed in any of the paragraphs [0006], [0068], [0089] or [0159] because these paragraphs do not explicitly mention a "*first threshold*".

Secondly, the board is of the opinion that the "*first threshold*" as claimed is neither equivalent to nor a broader concept of the "*extends of the electronic horizon*" as referred to in the description (see e.g. paragraphs [0006], [0068], [0091] or [0091]).

The application as originally filed defines that the expressions "*first threshold*" and "*building threshold cost*" refer to a (specific) value which is used by the cost functions in the determination of the extent of the electronic horizon, i.e. a certain set of potential driving paths (see paragraphs [0092] to [0095]). In contrast to this, the electronic horizon is defined as a representation of potential driving paths, i.e. a collection of data that represents road segments and intersections (see paragraph [0066]). The extent of the electronic horizon comprises all road segments within a given geographic boundary (see paragraph [0068] and [0091]). As there is a conceptual difference between the "*extends of the electronic horizon*" and the "*first threshold*", it is impermissible to attribute the teachings pertaining to the "*extends of the electronic*

horizon" from paragraph [0068] to the *"first threshold"*. This is also confirmed by the disclosure (see paragraphs [0069], [0096] and [0097]) that the cost associated with each path in the electronic horizon is at least as large as the *"building threshold cost"*, i.e. the *"first threshold"*.

In conclusion, although there is a link between the features *"first threshold"* and *"extends of the electronic horizon"* (the former is used, amongst other criteria, in the calculation of the latter), the application does not directly and unambiguously disclose the claimed combination of features 3c and 3d, i.e. that the *"first threshold"* is determined on the basis of the data needs of at least one driver assistance application.

Therefore, the subject-matter of claim 1 of the main request extends beyond the content of the application as filed, so that the ground for opposition under Article 100(c) EPC 1973 prejudices the maintenance of the patent as granted.

2. First auxiliary request - Amendments -
Article 123(2) EPC

Claim 1 of the first auxiliary request comprises *inter alia* the same amendment (the combination of features 3c and 3d) as claim 1 of the main request. Therefore, the same objection as discussed above applies, i.e. the subject-matter of claim 1 extends beyond the content of the application as originally filed.

In conclusion, the board is of the opinion that the subject-matter of claim 1 of the first auxiliary

request does not meet the requirements of Article 123(2) EPC.

3. Second auxiliary request - Admissibility - Article 13(1) RPBA 2007

The claims according to the second auxiliary request were filed after the summons to oral proceedings which were sent on 24 October 2019 and thus before the date of the entry into force of the revised version of the RPBA ("RPBA 2020"). Therefore, according to Article 25(3) RPBA 2020, Article 13 RPBA 2007 is to be applied.

3.1 The patent proprietor requested that the second auxiliary request be admitted into the proceedings because the amendments were originally disclosed in paragraph [0068], simple and directed to the issues discussed with regard to the main request. Furthermore, the board's preliminary opinion suggested for the first time that the opponent's submissions were credible. Finally, a request of this scope had already been submitted in the first-instance opposition proceedings (labelled as first auxiliary request).

3.2 The opponent requested that the second auxiliary request not be admitted into the proceedings because it was late-filed, formally defective and gave rise to new objections. In addition, the amendments required a substantively expanded patentability argumentation and therefore imposed an undue burden on the opponent. Finally, claim 1 of the second auxiliary request did not overcome the objections with respect to added subject-matter as discussed with respect to the main request.

- 3.3 The board is of the opinion that the objection with respect to features 3c and 3d as discussed for the main request applies likewise to claim 1 of the second auxiliary request, i.e. the subject-matter of claim 1 extends beyond the content of the application as originally filed and therefore does not meet the requirements of Article 123(2) EPC.

Thus, in exercising its discretion under Article 13(1) RPBA 2007, the board does not admit the second auxiliary request into the proceedings.

4. In conclusion, the ground for opposition under Article 100(c) EPC prejudices the maintenance of the European patent as granted (Article 101(2) EPC) and, taking into consideration the amendments made by the proprietor of the European patent according to the first auxiliary request, the patent and the invention to which it relates does not meet the requirements of the EPC (Article 101(3)(b) EPC).

Order

For these reasons it is decided that:

5. The decision under appeal is set aside.
6. The patent is revoked.

The Registrar:

The Chairman:



L. Gabor

R. Bekkering

Decision electronically authenticated