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**Datasheet for the decision  
of 14 June 2019**

**Case Number:** T 2370/16 - 3.4.02

**Application Number:** 07808384.7

**Publication Number:** 2089676

**IPC:** G01C21/36

**Language of the proceedings:** EN

**Title of invention:**

METHOD FOR CHANGING DYNAMIC DISPLAY MODE AND APPARATUS THEREOF  
IN CAR NAVIGATION SYSTEM

**Applicant:**

Hyundai Motor Company

**Headword:**

**Relevant legal provisions:**

EPC 1973 Art. 84  
RPBA Art. 13(1)  
EPC 1973 R. 67, 76(1), 76(3)

**Keyword:**

Claims - clarity (no)  
Request for inclusion of a statement in the minutes - refused

**Decisions cited:**

R 0001/13, T 0966/99, T 1721/07

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 2370/16 - 3.4.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.02**  
**of 14 June 2019**

**Appellant:**  
(Applicant)

Hyundai Motor Company  
150, Hyundaiyeonguso-ro,  
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**Representative:**

Isarpatent  
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**Decision under appeal:**

**Decision of the Examining Division of the  
European Patent Office posted on 27 May 2016  
refusing European patent application No.  
07808384.7 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** R. Bekkering  
**Members:** A. Hornung  
G. Decker

## **Summary of Facts and Submissions**

I. The applicant lodged an appeal against the decision of the examining division refusing European patent application No. 07808384.7 on the basis of Articles 83 and 123(2) EPC (main request then on file), Article 56 EPC (first and second auxiliary request then on file) and Article 84 EPC (second auxiliary request then on file).

II. Oral proceedings before the board were held on 14 June 2019.

III. As its final requests, the applicant requested that the decision under appeal be set aside and that a patent be granted on the basis of

- the claims of the main request filed with the statement of grounds of appeal or, alternatively,
- the claims of auxiliary request 1.1 filed with the letter dated 14 May 2019,
- the claims of auxiliary request 1.2 - 11.45 am filed at the oral proceedings on 14 June 2019,
- the claims of auxiliary request 1.3 filed as auxiliary request 1 with the statement of grounds of appeal,
- the claims of auxiliary request 2 or 3, both requests filed with the statement of grounds of appeal, or
- the claims of auxiliary requests 4 or 5, both requests filed with the letter dated 14 May 2019.

The applicant further requested that the appeal fee be reimbursed and that a statement presented in written form at the oral proceedings on 14 June 2019 be included in the minutes.

IV. Claims of the requests

*Main request*

Independent claim 1 according to the main request reads as follows:

"A method of changing a display mode in a car navigation system, the method comprising:

acquiring distance information (810) from a current vehicle location to a guide point (GP);

determining (820) whether the vehicle is located within a predetermined distance of the guide point (GP) based on the distance information;

determining (830) whether the current display mode is any one of a two-dimensional display mode and a three-dimensional display mode;

when the current display mode is the three-dimensional display mode and the vehicle enters the predetermined distance of the guide point (GP),

calculating (840) a vertical angle and a map magnification for changing the current display mode into the two-dimensional display mode; and

gradually changing the display mode into the two-dimensional display mode based on the calculated vertical angle and the map magnification by applying (860) the calculated vertical angle and the map magnification to a display engine;

characterized in that

calculating (840) a vertical angle and a map magnification for changing the current display mode into the two-

dimensional display mode is based on a distance from the current vehicle position to the guide point (GP) and a time required for driving from the current vehicle position to the guide point (GP)."

*Auxiliary request 1.1*

Independent claim 1 according to auxiliary request 1.1 differs from claim 1 of the main request in that it comprises the following additional features at the end of the claim:

"and wherein the guide point is in a left-turn section, a right-turn section and a U-turn section other than a straight section and when the guide point is hidden behind a building and is invisible, a view vertical angle is increased, in order to prevent the guide point (GP) from being hidden behind a building by the 3D display mode."

*Auxiliary request 1.2 - 11.45 am*

Independent claim 1 according to auxiliary request 1.2 - 11.45 am reads as follows:

"A method of changing a display mode in a car navigation system, the method comprising:

acquiring distance information (810) from a current vehicle location to a guide point (GP);

determining (820) whether the vehicle is located within a predetermined distance of the guide point (GP) based on the distance information;

determining (830) whether the current display mode is any one of a two-dimensional display mode and a three-dimensional display mode;

when the current display mode is the three-dimensional display mode and the vehicle enters the predetermined distance of the guide point (GP),

gradually changing the display mode into the two-dimensional display mode;

wherein the guide point is in a left-turn section, a right-turn section and a U-turn section other than a straight section and when the guide point is hidden behind a building and is invisible, a view angle of the three dimensional display is increased, in order to prevent the guide point (GP) from being hidden behind a building by the 3D display mode."

*Auxiliary request 1.3*

Independent claim 1 according to auxiliary request 1.3 differs from claim 1 of the main request only in that it comprises the following additional features at the end of the claim:

"the two-dimensional display mode changes a view angle of the guide point (GP) in a change section from a point in time of starting a conversion from the three-dimensional display mode into the two-dimensional display mode to a point in time of completing the conversion from the three-dimensional display mode into the two-dimensional display mode; and

the two-dimensional display mode changes the view angle of the guide point according to any one of a map magnification and a display area based on the distance information."

*Auxiliary request 2*

Independent claim 1 according to auxiliary request 2 differs from claim 1 of the main request only in that it comprises the following additional feature at the end of the claim:

"when the current display mode is the two-dimensional display mode and the vehicle has passed the guide point (GP) and is located within or outside the predetermined distance of the guide point (GP),

calculating (850) a vertical angle and a map magnification for changing the current display mode into the three-dimensional display mode;

gradually changing the display mode into the three-dimensional display mode based on the calculated vertical angle and the map magnification by applying (860) the calculated vertical angle and the map magnification to the display engine;

calculating (850) a vertical angle and a map magnification for changing the current display mode into the three-dimensional display mode is based on a distance from the current vehicle position to the guide point (GP) and a time required for driving from the current vehicle position to the guide point (GP)."

*Auxiliary request 3*

Independent claim 1 according to auxiliary request 3 differs from claim 1 of auxiliary request 1.3 in that it comprises



in addition the features which distinguish claim 1 of auxiliary request 2 from claim 1 of the main request.

*Auxiliary request 4*

Independent claim 1 according to auxiliary request 4 reads as follows:

"A method of changing a display mode in a car navigation system, the method comprising:

- a) searching routes to a destination;
- b) identifying a guide point (GP) corresponding to at least one of a left-turn section, a right-turn section and a U-turn section in a route desired by a user among the searched routes;
- c) displaying the route desired by the user and the guide point (GP) in a three-dimensional display mode;
- d) determining whether or not a vehicle driving section is a straight section;
- e) displaying the route and the guide point (GP) in the three-dimensional display mode, when the vehicle driving section is the straight section;
- f) acquiring (810) a distance between a current vehicle location and the guide point (GP), when the vehicle driving section is not the straight section;
- g) displaying the route and the guide point (GP) in a two-dimensional display mode by changing the three-dimensional display mode into the two-dimensional display mode, when the

acquired distance is within a predetermined distance (820);  
and

h) displaying the route and the guide point (GP) in the three-dimensional display mode, when the acquired distance deviates from the predetermined distance."

*Auxiliary request 5*

Independent claim 1 according to the auxiliary request 5 reads as follows:

"A method of changing a display mode in a car navigation system, the method comprising:

- a) searching routes to a destination;
  
- b) identifying a guide point (GP) corresponding to at least one of a left-turn section, a right-turn section and a U-turn section in a route desired by a user among the searched routes;
  
- c) determining whether or not a vehicle driving section is a straight section;
  
- d) if the vehicle driving section is the straight section, displaying the route and the guide point (GP) in the three-dimensional display mode;
  
- e) if the vehicle driving section is not the straight section:
  - e1) acquiring (810) a distance between a current vehicle location and the guide point (GP);

e2) determining (820) whether the acquired distance is within a predetermined distance (820);

e3) determining (830) whether the current display mode is any one of a two-dimensional display mode and a three-dimensional display mode;

e4) displaying the route and the guide point (GP) in the two-dimensional display mode, when the current display mode is the two-dimensional display mode and the acquired distance is within or outside of the predetermined distance;

e4) [*sic*] displaying the route and the guide point (GP) by gradually changing the three-dimensional display mode into the two-dimensional display mode, when the current display mode is the three-dimensional display mode and the acquired distance is within the predetermined distance;

e5) displaying the route and the guide point (GP) in the three-dimensional display mode, when the current display mode is the three-dimensional display mode and the acquired distance is outside of the predetermined distance; and

e6) wherein the displaying the route and the guide point (GP) by gradually changing the three-dimensional display mode into the two-dimensional display mode, comprises displaying the route and the guide point (GP) by gradually changing the two-dimensional display mode into the three-dimensional display mode, when a vehicle passes the guide point (GP)."

## Reasons for the Decision

1. Main request
- 1.1 Claim 1 lacks clarity (Article 84 EPC 1973) at least for the following reasons:
  - 1.1.1 Claim 1 refers to a "vertical angle". It is unclear from the wording of the claim what the exact meaning of a "vertical angle" is. An angle is generally defined between two directions. Claim 1, however, does not specify such directions. Therefore, the "vertical angle" of claim 1 is undefined.
  - 1.1.2 Claim 1 comprises a method step of calculating a vertical angle which "is based on a distance from the current vehicle position to the guide point (GP) and a time required for driving from the current vehicle position to the guide point (GP)". It is unclear which kind of calculation is to be carried out because there is no relationship in general between the value of an angle, a distance between two positions and a time needed to move from one position to the other. Therefore, notwithstanding the clarity objection raised against the expression "vertical angle" as such, the method step of calculating the "vertical angle" also lacks clarity.
  - 1.1.3 Claim 1 uses the expression "guide point" without defining its meaning. However, without knowing the exact definition of a "guide point", e.g. its nature, its location or its technical function, the signification of the method steps of claim 1 referring to a "guide point" remains obscure. For instance, the method step "acquiring distance information from a current vehicle location to a guide point" is unclear without knowing the precise technical features of the guide

point enabling the identification of the guide point and the determination of its location with respect to the current vehicle location.

1.2 The applicant presented the following counter-arguments:

- *Concerning the expressions "vertical angle" and "calculating a vertical angle"*

1.2.1 During oral proceedings, the applicant argued that the expression "vertical angle" was sufficiently clear to the skilled person in view of the description and the drawings of the patent application.

This argument is not found convincing since claims must in principle be clear in themselves when read by the person skilled in the art. In general, a clarity deficiency in a claim wording cannot be rectified by the fact that the description could possibly help the reader to understand the technical subject-matter which the claim was intended to define. Beyond that, in the present case, the description does not contain a clear definition of the debated expression.

1.2.2 According to the applicant, the expression "vertical angle" had a similar meaning as the expression "view angle" used throughout the description. Referring to page 5, lines 9 and 14, and to page 12, line 17, the applicant submitted that the "view angle" corresponded to the view angle of the guide point, in particular, when the guide point was not visible and the view angle of the guide point changed from a 3D-view to a 2D-view to make the guide point visible. The applicant further compared the "vertical angle" to a "90°-view" or a "bird's view". The applicant concluded that the "vertical angle" of claim 1 corresponded to a "view angle when changing from 3D to 2D".

These explanations are not found persuasive by the board since there is no plausible reason why a "vertical angle" should correspond or have a similar meaning or be identical to a "view angle", "90°-view" or a "bird's view". Besides the fact that no clear basis for such a correspondence can be found in the application as originally filed, the expressions "view angle", "90°-view" or "bird's view" are also vague. Moreover, they are not synonyms and do not have a common clear meaning which could clarify the meaning of the "vertical angle".

- 1.2.3 In chapter II.1.3 of its letter dated 14 May 2019, the applicant referred to the skilled person knowing "that the pseudo three-dimensional view has a view angle with respect to the vertical direction. It is the perspective view which is also used in the priority application". In conclusion, "the calculation of vertical angles or perspective angles together with the magnification ratio is standard for a skilled person trying to display a pseudo-three-dimensional view on a two-dimensional display surface" (emphasis in original).

These explanations are also not found persuasive by the board since they do not go beyond the mere allegation that the skilled person would know what "vertical angle" means. However, they do neither provide a clear technical definition of the expression "vertical angle", nor reveal how the vertical angle is effectively calculated.

- *Concerning the expression "guide point"*

- 1.2.4 The applicant argued that the expression "guide point" was sufficiently clear to the skilled person in view of the description and the drawings of the patent application. In particular, a "guide point" was a guiding indicator

indicating to the driver that an action needed to be taken, such as turning on the road. According to page 4, lines 24 to 26, the guide point "is a point of guiding a left-turn section, a right-turn section, or a U-turn section being a section excluding a straight feature, for example, an underpass and a tunnel".

This argument is not found convincing since claims must in principle be clear in themselves when read by the person skilled in the art. In general, a clarity deficiency in a claim wording cannot be rectified by the fact that the description could possibly help the reader to understand the technical subject-matter which the claim was intended to define. From the expression "guide point" as such, the skilled person can neither deduce which action needs to be taken in view of the "guide point", nor that the "guide point" corresponds to a turning section.

1.3 It follows that claim 1 of the main request lacks clarity.

2. Auxiliary request 1.1

The board decides not to admit the auxiliary request 1.1 into the proceedings under Article 13(1) RPBA for the following reasons:

2.1 The claims of auxiliary request 1.1 were filed with the letter dated 14 May 2019 in response to the communication annexed to the summons to oral proceedings.

According to well-established case law, one of the criteria for assessing the admittance of new requests with amended claims during appeal proceedings is whether the amended claims are likely to overcome the objections in response to which the request has been filed (see, for instance, decision of the Enlarged Board of Appeal in case R 1/13,

point 16.2 of the reasons). The present amendments of claim 1 do not fulfil this criterion since they relate merely to the attempt of clarification of the expression "guide point" without any attempt of clarification of the expressions "vertical angle" and "calculating a vertical angle". Since none of the amendments are suitable to clarify the expressions "vertical angle" and "calculating a vertical angle", which have been objected to as being unclear in claim 1 of the main request (see points 6.1.1 and 6.1.2 of the communication annexed to the summons to oral proceedings and points 1.1.1 and 1.1.2 above), auxiliary request 1.1 is not admitted into the proceedings.

- 2.2 The applicant submitted that it had hoped convincing the board that the expressions "vertical angle" and "calculating a vertical angle" were clear and that, therefore, no amendment concerning these expressions had been required before receiving the communication of the board annexed to the summons to the oral proceedings.

As explained in point 1.2 above, the applicant's arguments in favour of clarity of the expressions "vertical angle" and "calculating a vertical angle" are not found convincing by the board.

3. Auxiliary request 1.2 - 11.45 am

The board decides not to admit auxiliary request "1.2 - 11.45 am" into the proceedings under Article 13(1) RPBA for the following reasons:

- 3.1 Auxiliary request "1.2 - 11.45 am" was filed during the oral proceedings. Claim 1 was amended *inter alia* by adding the feature "the guide point is hidden behind a building and is invisible" and by deleting any reference to a "vertical angle". For the basis of the amendment, the applicant



referred to page 5, lines 13 to 17 and page 8, lines 8 to 11 of the patent application as originally filed. Moreover, it was clear from figure 4 that "the guide point is specifically related to a left-turn, right-turn or U turn" (see applicant's letter dated 14 May 2019, point II.1).

In the present case, it is doubtful whether the expression "guide point is hidden behind a building and is invisible" of claim 1 is sufficiently clear. In particular, the applicant's explanations in its letter dated 14 May 2019, points II.1 and II.1.3, referring to figure 4, are not found convincing by the board since it is not clear from figure 4 what the "hidden guide point" is and where it is located. The passages cited by the applicant seem to relate to figure 3 where a point called "GP" is visible and not hidden behind a building since it is located in a straight section.

Furthermore, the amended feature of claim 1 was completely taken from the description. Such type of amendment is potentially complex since it opens the debate about the compliance of the amendment with respect to the basic requirements of Articles 123(2) and 84 EPC and it defines subject-matter which was not previously claimed and, therefore, may require an additional search and substantive examination to be restarted.

Since the aspect of the invention relating to an invisible guide point was never discussed before, the board is confronted with a fresh case. In particular, no decision from the first instance is available concerning the questions whether the feature of a hidden guide point has a sufficient basis in the original application documents and whether it is clear. Furthermore, novelty and inventive step with respect to the available prior art documents would have

to be assessed for the first time during the oral proceedings.

Due to the fact that the board is confronted with a fresh case at such a late stage of the proceedings, it decides to exercise its discretion under Article 13(1) RPBA in not admitting the auxiliary request "1.2 - 11.45 am" into the proceedings.

4. Auxiliary requests 1.3, 2 and 3

Claim 1 of the auxiliary requests 1.3, 2 and 3 comprise the same features relating to the expressions "vertical angle" and "calculating a vertical angle". Therefore, claim 1 of the auxiliary requests 1.3, 2 and 3 lack clarity at least for the reasons given in point 1.1.1 and 1.1.2 above with respect to claim 1 of the main request (Article 84 EPC 1973).

5. Auxiliary requests 4 and 5

5.1 The board decides not to admit the auxiliary requests 4 and 5 into the proceedings under Article 13(1) RPBA for the following reasons:

Auxiliary requests 4 and 5 were filed with the letter dated 14 May 2019 in response to the communication annexed to the summons to oral proceedings. Claim 1 of these requests is completely reworded by deleting most of the language of claim 1 of the higher-ranking requests and introducing new features {see e.g. the new method steps a) to h) of claim 1 of auxiliary request 4 and the new method steps a) to e) of claim 1 of auxiliary request 5}, so that the board is confronted with a fresh case.

According to the applicant, the basis of the amendments of claim 1 of auxiliary request 4 in the original application documents is to be found in nine different passages in the description and figures (see letter dated 14 May 2019, marked-up version of the auxiliary request 4). Therefore, checking the allowability of the amendments with respect to the requirement of Article 123(2) EPC represents a complex task. The amendments of claim 1 of auxiliary request 5 represent a similar complexity.

Furthermore, the board still has doubts whether the clarity objection raised against the expression "guide point" in claim 1 of the higher-ranking requests is overcome in claim 1 of auxiliary requests 4 and 5.

Since the board is confronted with a fresh case comprising complex amendments not clearly allowable at such a late stage of the proceedings, it decides to exercise its discretion under Article 13(1) RPBA in not admitting the auxiliary requests 4 and 5 into the proceedings.

- 5.2 The applicant, during oral proceedings, merely referred to its written arguments, according to which both requests "address issues which have been raised by the rapporteur" and submitted that they "could not be filed earlier because when filing the grounds of appeal applicant was still of the opinion that the then filed arguments would resolve the alleged problems of Art. 83 EPC raised in the first instance decision" (see applicant's letter of 14 May 2019, point III. 1).

The board is not persuaded by these arguments because, as acknowledged by the applicant, the technical meaning of the claim wording had already been an issue during the first instance proceedings, see points 17.2 and 19.2 of the appealed decision. Moreover, a mere clarification does in

general not require a nearly complete deletion of the original claim wording, subsequent redrafting and introduction of new features.

6. Request for reimbursement of the appeal fee

6.1 According to the notice of appeal, the applicant requested the reimbursement of the appeal fee. No reasons justifying the reimbursement have been provided in writing. During oral proceedings before the board, the applicant explained that the reason for its request related to its surprise during the oral proceedings before the examining division that the translation of document D4 was handed over to the applicant only during the oral proceedings.

6.2 The request for reimbursement of the appeal fee is to be refused for the following reasons:

6.2.1 Since the main request underlying the appeal filed by the applicant comprised a new set of claims different from the sets of claims underlying the appealed decision, there is no causal link between an alleged procedural violation and the necessity to appeal. Thus a reimbursement of the appeal fee is not equitable as required by Rule 67 EPC 1973.

6.2.2 For the reasons provided above, the appeal is not considered allowable by the board. Therefore, there is no basis for a reimbursement of the appeal fee under Rule 67 EPC 1973.

6.2.3 In view of the reasons given in the appealed decision, points 21.1 to 21.7, especially in view of the fact that document D4 was from the outset part of the examination proceedings (D4 was cited in the search report and referred to in a communication of the examining division) and that the applicant's representative was given sufficient time (one hour) during the oral proceedings to study the

translation of D4, the board is of the view that no substantial procedural violation has been committed by the examining division in relation to the translation of the document D4.

7. Request for inclusion of a statement in the minutes
- 7.1 During the oral proceedings before the board, the applicant requested that a statement presented in written form at the oral proceedings on 14 June 2019 be included in the minutes. The applicant's statement reads: "The primary examiner entrusted with the examination of the present application and the pending divisional application attended the Appeal Board hearing" (see the annex to the minutes of the oral proceedings).
- 7.2 According to Rule 76(1) EPC 1973, minutes of oral proceedings must contain "*the essentials of the oral proceedings*" and "*the relevant statements made by the parties*". It is within the discretion of the board what is considered "essential" or "relevant"; what constitutes "*the essentials of the oral proceedings*" or "*the relevant statements made by the parties*" has to be determined by reference to what the board has to decide (see T 966/99, Reasons 7.2.2).
- 7.3 Rule 76(3) EPC 1973 further stipulates that the minutes are to be authenticated by the employee responsible for drawing them up and by the employee who conducted the oral proceedings. The EPC contains no provisions providing for a party's right to have a certain statement included in the minutes.
- 7.4 It follows that preparing the minutes of oral proceedings before the boards is a task entrusted only to the boards which cannot be transferred or delegated, in whole or in

part, to the parties; no single party can be permitted to decide on or influence the content of the minutes (see T 1721/07, Reasons 15).

7.5 Of course, a party is free to suggest the inclusion of a certain statement in the minutes if it is of the opinion that otherwise the minutes would not comply with Rule 76(1) EPC 1973. However, there is no obligation on the part of the boards to do so.

7.6 In the present case, the statement presented in written form by the applicant alleged that a certain person was part of the public attending the oral proceedings. However, this alleged fact has no bearing on the board's decision and does not, therefore, constitute an essential of the oral proceedings. Consequently, the board had no reason to include in the minutes the fact that a certain person was part of the public attending the oral proceedings and, as would be necessary to this end, to ask the person concerned for their personal data.

7.7 As a result, the applicant's request was to be refused.

## **Order**

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

1. The appeal is dismissed.
2. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:



M. Kiehl

R. Bekkering

Decision electronically authenticated