BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Publication in the Official Journal ~~Yes~~ / No

File Number: T 325/91 - 3.4.1

Application No.: 84 102 504.2

Publication No.: 0 118 886

Title of invention: Map display system

Classification: G09B 29/10

D E C I S I O N
of 3 April 1992

Proprietor of the patent: NIPPONDENSO CO., LTD.

Opponent: Messerschmitt - Bölkow - Blohm GmbH, Ottobrunn

Headword:

EPC Article 56

Keyword: Inventive step (yes)

Headnote

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number : T 325/91 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 3 April 1992

Appellant : (Opponent)
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Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 20 March 1991 rejecting the opposition filed against European patent No. 0 118 886 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : G.D. Paterson
Members : H.J. Reich
R. Shukla

Summary of Facts and Submissions

I. The Respondent is owner of European patent No. 0 118 886.

The independent claims of this patent read as follows:

"1. A map display system including display means (1; 1100; 4011) for displaying a map, map data storage means (2; 20; 1300) for storing at least spot coordinate data to provide a coordinate spot relative to a predetermined coordinate origin spot, extraction means (10; 140; 1700; 4053) for extracting from said map data storage means the spot coordinate data indicative of the spot located to be displayed by said display means, and display control means (12; 190; 1727) responsive to the spot coordinate data of each spot extracted by said extraction means for forming display data which are provided to said display means to display a map with a variable scale, characterized in that

said map data storage means (2; 20; 1300) is provided to store spot level data indicative of each spot relative to all of said spots constituting the map and indicative of the level corresponding to the importance of the spot,

designation means (7-10; 110, 120, 130, 140; 1500, 1700, 2900, 3100) is provided to designate at least one of said various scales of the map, and

said extraction means (10; 140; 1700; 4053) is responsive to the scale designated by said designation means to extract from said map data storage means the spot coordinate data of the spot having the spot level data of importance relative to said scale.

9. A map display system including display means (1) for displaying a map, map data storage means (2) for storing at least spot coordinate data to provide a coordinate spot relative to a predetermined coordinate

origin spot, extraction means (10) for extracting from said map data storage means the spot coordinate data indicative of the spot located to be displayed by said display means, and display control means (12) responsive to the spot coordinate data of each spot extracted by said extraction means for forming display data which are provided to said display means to display a map with a variable scale, characterized in that

said map data storage means (2) is provided to store spot level data indicative of each spot relative to all of said spots constituting the map and indicative of the level corresponding to the importance of the spot,

designation means (7, 10) is provided to designate a density of features to be displayed on the map,

said extraction means (10) is responsive to the density designated by said designation means to extract from said map data storage means the spot coordinate data of the spot having the spot level data of importance relative to said density."

Claims 2 to 8 are dependent on Claim 1 and Claim 10 is dependent on Claim 9.

II. The patent was opposed by the Appellant on the ground of lack of novelty of the subject-matter of Claim 1 in view of the prior art which can be derived from document:

D1: US-A-4 179 693,

and on the ground of lack of inventive step of the subject-matter of dependent Claims 2 to 5 in view of the prior art which can be derived from documents:

D2: US-A-3 742 495,
D3: DE-C-3 011 556, and
D4: DE-A-2 519 214 (corrected into DE-A-2 519 241).

No ground of opposition or evidence was cited against independent Claim 9.

III. The Opposition Division rejected the opposition. It took, inter alia, the view that document D1 does not constitute a map display system which includes means for displaying the map and display control means responsive to coordinate data extracted from the storage means for varying the scale of the display. Moreover, the additional data stored with each stored spot coordinates of the map in the autonomous navigational system according to document D1 characterise different types of terrain features in order to automatically compare the stored map with a sensed radar image, but not spot level data, which characterise the importance of the spot for a particular display scale.

IV. An appeal against this decision was lodged by the Opponent, requesting to set aside the appealed decision and to revoke the patent.

V. In support of his request, the Appellant argued essentially as follows:

(a) Document D1 is the most relevant document. It discloses an autonomous navigational system for periodically determining and correcting the actual position of a vehicle wherein the sensed image of a local terrain is compared with a stored reference map image. Document D1 does not explicitly mention a display of the map. However this fact is without legal consequences, because a map display system is mentioned in the pre-characterising part of Claim 1 and thus presumed to be known.

(b) Document D1, column 2, line 63 to column 3, line 13, discloses map data. The purpose of storing map data is their display. Though in document D1 the essential aim is not to display but to process map data, the missing display should not be overvalued.

(c) Document D1, column 50, lines 21 to 43, mentions explicitly that the invention is not limited to the disclosed embodiments but that changes and modifications can be made without departing from the scope of the invention.

VIII. In reply to the Grounds of Appeal the Respondent requested to dismiss the appeal and auxiliarily to appoint a date for oral proceedings. He submitted the following main arguments in order to contest the Appellant's view:

(a) Document D1 refers to a guidance system for maintaining the intended flight path of a pilotless aircraft, requiring no display whatsoever, and thus does not disclose any features concerning a specific map display system with a variable scale.

(b) The symbols of feature class (C) stored in the device of document D1 are classifications of particular terrain features, which are not at all changed and displayed according to their importance.

(c) The object of the present invention is not the guidance of an aircraft but to provide a map display system enabling enlargement of the area of each map and a reduction in the required map data capacity, while being able to automatically display on a display means a map with variable scale. Document D1 does not disclose at all the storage of spot level data indicating the degree of importance in display

in association with a designated map scale for each of the spots constituting a map, and that in accordance with these spot level data a determination is made whether a spot is used in a map display depending on the designated display scale.

Reasons for the Decision

1. In the Board's view and as the Appellant concedes implicitly, Claim 1 is novel, in particular over document D1 disclosing a navigational system without any display means for displaying a map; see also paragraph V(a). Thus, the only substantive issue raised in this appeal is that of inventive step underlying the subject-matter of Claim 1.

2. The Board agrees to the implicit view of the Opposition Division that the closest prior art is known in particular from document:

D5: GB-A-2 100 001,

indicated as background art in the description of the patent under appeal and disclosing a map display system with all the features claimed in the pre-characterising part of Claim 1, and with the feature that "designation means is provided to designate at least one of said various scales of the map"; see in particular Figure 22 of document D5: display means 61; map data storage means 62; extraction means 64; display control means 60, 64; scale selectors 65, 65a and coordinates transforming unit 64 with regard to the function of the control means to display a map with a variable scale; and scale designation means: 65, 65a.

3. Starting from the closest prior art as disclosed in document D5, the objective problem underlying the present invention as claimed in Claim 1 is to provide a map display system with variable display scale and thus to provide a plurality of map patterns (see Figures 3a, 3b, 3c) not limited to a restricted area without increasing the required data storage capacity; see the patent under appeal, page 1, lines 36 to 46.

4. This problem is solved according to Claim 1 in that "said map data storage means is provided to store spot **level** data indicative of each spot relative to all said spots constituting the map and indicative of the level corresponding to the **importance** of the spot, and that said extraction means in response to the scale designated by said designation means to extract from said map data storage means the spot coordinate data of the spot having the spot level data of importance relative to said scale.

5. The data attributed to the spot coordinate data in the storage means (57 in Figure 2) of document D1 specify the shape of the black and white contrast of the microwave reflection of typical terrain features; see Figure 3A. Known extraction means (i.e. the "start image B" output of means 55 in Figure 2) triggers the input of all stored data of a particular map (controlled by means 69) into feature pattern matcher 59. The shape data allow to build up a distance relation to sensed identical shapes and thus to determine the displacement, ΔX_D, ΔY_D and ΔQ_D at the output of unit 65.

Hence, document D1 does not hint a skilled person to provide in an extraction means of stored data a gate function which allows to suppress the extraction of some stored coordinate data. Document D1 is completely silent about the fact, to select only some of the coordinate data

of the stored reference map image for the input into feature pattern matcher 59.

Moreover, in the Board's view, a skilled person cannot be expected to convert in the known data triple (X,Y,C) the C-value from a shape symbol into a symbol for a level of importance, which is recognisable by a gate means in an extraction unit and to thus suppress map information, which is superfluous to a user at a particular map scale.

Not the missing display (see paragraph V(b)) but the missing gate function, in the Board's view, renders the subject-matter of Claim 1 non-obvious with regard to the prior art disclosed in document D1. The Board does not accept the Appellant's submission in paragraph V(c), that a particular technical teaching can be derived from an unspecified generalisation.

5. All the other cited documents do not come closer to the subject-matter of Claim 1 than documents D5 and D1.

6. For the reasons stated above, in the Board's judgment, the subject-matter of Claim 1 involves an inventive step within the meaning of Article 56 EPC.

7. Hence, it follows that granted Claim 1 is maintained unamended.

8. The Appellant has not cited any particular evidence supporting a ground of opposition against independent Claim 9 nor submitted any arguments against this claim. Due to the fact that also the subject-matter of Claim 9 comprises the storage of spot level data indicative of importance and thereby the above-mentioned gate function of the extraction means, for the reasons set out in

paragraphs 5 and 6 above, the Board finds that the subject-matter of Claim 9 involves an inventive step within the meaning of Article 56 EPC. Hence, it follows that granted Claim 9 is maintained unamended.

9. Dependent Claims 2 to 8 and 10 concern particular embodiments of the system according to Claim 1 or to Claim 9 respectively and are likewise maintained.

10. Under these circumstances, the Respondent's auxiliary request for oral proceedings does not come into effect.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

M. Beer G.D. Paterson