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D E C I S I O N
of 9 May 1995

Case Number: T 0206/95 - 3.4.2

Application Number: 88312450.5

Publication Number: 0330787

IPC: G01C 21/20, G01C 21/22

Language of the proceedings: EN

Title of invention:
Navigation system

Applicant:
AISIN AW CO., et al

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Headnote/Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0206/95 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 9 May 1995

Appellant: AISIN AW CO., LTD.
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Decision under appeal: Decision of the Examining Division of the European Patent Office dated 10 November 1994 refusing European patent application No. 88 312 450.5 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: M. Chomentowski
B. J. Schachenenmann

Summary of Facts and Submissions

I. European patent application No. 88 312 450.5 (publication No. 0 330 787), consisting of **Description:** pages 1 to 4 and 7 to 36 (renumbered 8 to 37 according to request in letter of 1 February 1994) as originally filed and pages 5 to 7 filed with letter of 1 February 1994, **Claims:** 1 and 2 filed with letter of 1 February 1994 and numbers 3 to 16 filed with letter of 26 October 1992, and **Drawings:** Sheets 1/37 to 37/37 as originally filed, was refused on the grounds that the subject-matter of the only independent claim, i.e. Claim 1, with the following text, did not involve an inventive step having regard to D1 = Patent Abstracts of Japan, volume 11, number 334, (P-631) (2781), 31/10/87 & JP-A-62116210 and D5 = NTZ Nachrichtentechnische Zeitschrift, volume 36, number 4, April 1983, pages 220-223; A. Fuchs et al.: "EVA-Netzabbildung und Routensuche für ein fahrzeugautonomes Ortungs- und Navigationssystem":

"1. A navigation system for a vehicle comprising:
a first external storage means (16) for storing first guidance data including road and intersection data;
a second storage means (17) for storing second guidance data; said guidance data being linked to said first guidance data;
output means (5, 6) for outputting guidance information;
and CPU means (4) for receiving said first and second guidance data from said first and second storage means, supplementing said first guidance data by said second guidance data, and outputting said guidance information based on said supplemented guidance data via said output means, characterised in that said second guidance data contains supplementary road and intersection data relating to a geographic area forming part of a

geographic area for which road and intersection data is stored in said first storage means and that said CPU means is programmed to select second guidance data when first guidance data overlap with second guidance data, to operate selectively upon said first and second guidance data stored in said first and second external storage means, and to present to said output means a displayed guidance route containing coordinated road and intersection data derived from both of said first and second storage means."

The Examining Division took the view that, starting from the navigation system with two separate memories known from D1, the problem to be solved was to provide an automatic composition of standard and detailed map information contained respectively in these memories, in place of the known composition of data on request of the user, and that D5 gave an obvious indication for composing such standard and fine map information taken out of different memories. Moreover, the combination of standard map information with detailed map information was presented as being trivial, since any traveller going by car from a point A to a town B would first choose a standard route map comprising both places and the main routes and then, in order to find his final destination, a detailed street map of town B, and the feature to store these two types of route information in two different external memories is merely one of several obvious possibilities.

II. The Appellant (Applicant) lodged an appeal against this decision. As a main request, he requested that the decision under appeal be set aside and that a patent be granted on the same basis. He provided the following arguments in support of his request:

The present navigation system is intended for solving the problem of automatically combining two sets of map data from different original sources, whereby the second source of data may merely comprise supplementary data relating to a geographic area covered by the first source of data. D1 is concerned with the composition, on request of the user, of data taken from different memory means and does not provide any incitation for modifications which would lead toward the present navigation system. D5 is concerned with a totally different problem, i.e. combining data from two network data, but stored in the same memory. Moreover, the first network data, i.e. the coarse network data of D5 is not network data in the sense of the present application, i.e. road and intersection data, but is data relating to the arrangement of sections into which the fine network is divided; thus, the coarse network data of D5 is not map data that is to be displayed to the user, but is merely used by the processor of the navigation system for the purpose of processing the other data, i.e. the fine network data. The further argumentation of the Examining Division, that the combination of standard map information with detailed map information can be regarded as trivial, because any traveller going by car from point A to town B would firstly choose a standard route map comprising both places and the main routes and then, in order to find his final destination, a detailed street map of city B, can result only from ex post facto considerations in relation with D1 because, in particular, such standard and detailed maps are generally on different pages of an atlas which are consulted separately. Therefore, the subject-matter of Claim 1 is not obvious having regard to the state of the art.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 *Inventive step*

2.1.1 The decision under appeal does not contain any objection concerning formal requirements of the application or the novelty of the subject-matter of present Claim 1.

According to the present application (see page 5, last paragraph to page 6, first paragraph), a navigation system for a vehicle comprising all the features of the preamble of present Claim 1 is known from D1 (see the abstract and the English translation provided by the Appellant, in particular, page 3, third and fourth paragraphs; page 4, second paragraph; page 7, fourth paragraph to page 12, second paragraph; page 13, last paragraph to page 14, first paragraph; Figure 1 and 4 to 6). In particular, said known navigation system comprises:

a first external storage means (1; 46), for instance a compact disc, for storing first guidance data including road and intersection data, e.g. thousand sheets of map information stored in advance;

a second storage means (4; 45) for storing second guidance data; said guidance data being linked to said first guidance data and being for instance a map and/or a course toward a destination and information there

around which are/is not included in the map information storage portion (1; 46) and which are/is stored suitably so as to be used as a support for the regular route guide to the destination;

output means (2; CRT 40) for outputting guidance information; and CPU means (8) for receiving said first and second guidance data from said first and second storage means, supplementing said first guidance data by said second guidance data, and outputting said guidance information based on said supplemented guidance data via said output means.

The following is to be noted in relation with the features of the second part of present Claim 1:

In the known navigation system (see also page 11, second paragraph), the information from the first external storage means and the information from the second storage means can be "composed" at step (S26) of Figure 6, whereby only composing with supplementary information is derivable as being useful; moreover, since said second guidance data contains for example a map, stored suitably so as to be used as a support for the regular route guide to the destination, it is derivable that the supplementary information on road and intersection data can inter alia concern a geographic area forming part of a geographic area for which road and intersection data is stored in said first storage means.

Moreover, most importantly, contrary to the presently claimed navigation system, in the known system, depending on the position at step (S24) of a switch (52) which controls the action of the CPU means (8), there can be at step (S25) no composition of the picture images and only the information from the second storage

means is displayed (see page 11, second paragraph; Figure 4 and Figure 6); thus, the second guidance data is only displayed on the user's request. In this respect, guidance data derived from either the first or the second known storage means alone (see page 10, penultimate paragraph to page 11, first paragraph) can also be displayed; in particular, a picture image read key (51) is depressed, evidently by the user, at a point of time when map information is read out of the first storage means, i.e. of the optical disc (46) and it is desired to read other information from the second storage means (45). Therefore, contrary to the presently claimed system, in said known navigation system the CPU means is not programmed to select second guidance data when first guidance data overlap with second guidance data, to operate selectively upon said first and second guidance data stored in said first and second external storage means, and to present to said output means a displayed guidance route containing coordinated road and intersection data derived from both of said first and second storage means.

2.1.2 The Appellant has argued that the present navigation system is intended for solving the problem of automatically combining two sets of map data from different original sources, whereby the second source of data may merely comprise supplementary data relating to a geographic area covered by the first source of data, for instance because the second source of data may have been updated to include changes in the road structure by addition or deletion of roads. Incidentally, it is to be noted that, although no automatic combining of two sets of maps is mentioned in the original application, this aspect of the problem to be solved is derivable at least from the information originally disclosed in relation with a comparison of Figure 4 and 8; it is also to be noted that the Examining Division has derived a similar

problem of automatic combining of standard map data with detailed map data without mentioning any objection concerning additional subject-matter in the sense of Article 123(2) EPC. It is further to be noted that the problem of automatic combining of two sets of maps is credibly solved by the feature of present Claim 1 that said CPU means is programmed to select second guidance data when first guidance data overlap with second guidance data, to operate selectively upon said first and second guidance data stored in said first and second external storage means, and to present to said output means a displayed guidance route containing coordinated road and intersection data derived from both of said first and second storage means.

2.1.3 No incitation is derivable from D1 which could lead to modifications resulting in the present navigation system. It is to be noted that the present system does not result from a mere automatization, but implies that some of the capabilities of the system known from D1, wherein the user can select whether the different data are composed and which kind of data is displayed, is lost.

The Examining Division has pointed out D5 (see page 221, left-hand column, lines 30 to 36), where the combination of two types of map information data is proposed. However, as convincingly argued by the Appellant, although D5 (see also page 221, right-hand column, last line to page 222, left-hand column, second paragraph) describes the provision of a coarse network data ("Grobnetz") and fine network data ("Feinnetz"), which together form a network data definition ("Netzabbild"), these two sets of data do not originate from different sources but are both contained in the same background store ("Hintergrundspeicher") whereby D5 (see page 222, left-hand column, fifth line to the end of the first

paragraph) specifies that the network data ("das Netz") is introduced in segmented form in the background store ("Hintergrundspeicher"); the route search is done in two steps, i.e. an initial coarse route search on the basis of the coarse network data ("Grobnetz") and a subsequent fine route search based on the fine network data ("Feinroute") belonging to selected segments ("Teilnetze oder Segmente"), whereby the analogue structure of the coarse network data and of the fine network data gives the possibility of using the same algorithms for both steps. Moreover, as further convincingly argued by the Appellant, the coarse network data of D5 (see page 221, left-hand column, lines 10 to 21) is not network data in the sense of the present application, i.e. road and intersection data, but is data relating to the arrangement of the segments into which the fine network is divided; thus, the coarse network data of D5 is not map data that is to be displayed to the user, and such data is not combined with the fine network data for such display, but is merely used by the processor of the navigation system for the purpose of processing the fine network data; it may therefore be said that D5 (see in particular page 220, right-hand column, antepenultimate paragraph to page 221, left-hand column, third paragraph) is concerned with an entirely different problem from that of the present invention, namely the problem of processing a large amount of network data all of which is contained in a single storage device but which is divided into segments relating to different map areas. Therefore, even if the person skilled in the field of D1 were looking for an automatization of the composition of data originating from two different storage means, he would not be incited to take into account D5 and its composition of segmented sections of data taken from the same memory means for solving this problem.

2.1.4 It is to be noted that, according to the further argumentation of the Examining Division, the combination of standard map information with detailed map information could be regarded as trivial; any traveller going by car from point A to town B would first choose a standard route map comprising both places and the main routes and then, in order to find his final destination, a detailed street map of city B; the feature to store these two types of route information in two different external memories was merely one of several possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill. However, as credibly argued by the Appellant, this is not convincing because, starting from the navigation system of D1 with two separate memories (1, 46; 4, 45), it is only by ex post facto analysis, i.e by knowing the present application, that the skilled person would take into account such considerations about the behaviour of a traveller and, moreover, standard and detailed reference data, i.e. a standard route map and a detailed street map of a town would be more evidently on different pages of an atlas which the traveller would consult separately, i.e. without a guidance route containing coordinated road and intersection data derived from both maps being shown, as required in present Claim 1.

It is further to be noted that, since the Examining Division has introduced in the examination procedure a new document, D5, and left aside the prior art documents of the European search report other than D1, this is an indication that these documents were considered as less relevant and the Board can see no reason for a different conclusion.

Therefore, the subject-matter of present Claim 1 is not obvious for the skilled person having regard to the state of the art and, thus, it involves an inventive step in the sense of Article 56 EPC.

2.1.5 Therefore, the Appellant's auxiliary requests need not be considered and a patent may be granted on the basis of the main request (Article 52(1) and 97(2) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division with the order to grant a patent on the basis of the following documents: **Description:** pages 1 to 4 and 7 to 36 (renumbered 8 to 37 according to request in letter of 1 February 1994) as originally filed and pages 5 to 7 filed with letter of 1 February 1994, **Claims:** 1 and 2 filed with letter of 1 February 1994 and numbers 3 to 16 filed with letter of 26 October 1992, and **Drawings:** Sheets 1/37 to 37/37 as originally filed.

The Registrar: The Chairman:

P. Martorana E. Turrini