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D E C I S I O N
of 18 December 1995

Case Number: T 0813/92 - 3.4.1

Application Number: 85905470.2

Publication Number: 0199780

IPC: G09G 1/00

Language of the proceedings: EN

Title of invention:
Apparatus and method for displaying a map

Applicant:
Etak, Inc.

Opponent:
-

Headword:
Display map of streets/ETAK

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - yes (after amendments)"

Decisions cited:
-

Catchword:

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0813/92 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 18 December 1995

Appellant: Etak, Inc.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office dated 10 April 1992 refusing European patent application No. 85 905 470.2 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: G. D. Paterson
Members: R. K. Shukla
U. G. O. Himmler

Summary of Facts and Submissions

I. European patent application No. 85 905 470.2, concerning a map display apparatus for a moving vehicle, was refused by a decision of the Examining Division on the ground that the subject-matter of independent claim 1 did not fulfil the requirement of inventive step (Articles 52(1) and 56 EPC) in view of the prior art as represented by documents:

D1: EP-A-0 118 886 and
D2: EP-A-0 059 435.

The Examining Division held essentially as follows in the above decision:

The apparatus according to claim 1 differs from the display apparatus disclosed in document D1 essentially in that it comprises a database with data in the form of labels of streets and means for selecting certain street labels to be displayed, the selection being based on an ordering scheme which is such that only some of the displayed streets may have their associated street labels displayed. Since document D1 discloses that "spot names" and document D2 discloses that names of places may be displayed, and since it is known to show street names adjacent to the streets in any conventional town plan or road map, it would be obvious to the skilled person to display the street names also on the display apparatus of document D1. Furthermore, it is also well known, for example, from conventional hard copy advertising maps with indications of how to get to a certain commercial place (such as a shop), to display only the essential street names so as to enable a vehicle driver to get to the place in question. It would be therefore a matter of routine for a skilled person to

include an ordering scheme in the apparatus of document D1 such that only selected street names are displayed. The claimed subject-matter therefore lacks an inventive step.

II. The Applicant lodged an appeal against the decision and requested as a main request that a patent be granted on the basis of the claims forming the basis of the impugned decision. The Appellant also filed three auxiliary requests.

In the grounds of appeal, the Appellant argued essentially as follows:

Documents D1 and D2 disclose that key spots or destinations may be displayed, but none of these documents discusses the display of street labels (i.e. street names). More significantly, none of the cited prior art documents shows any independent ordering scheme for selecting street labels for display. Regarding ordinary paper maps, the Examining Division's assertions are not supported by any documentary evidence. Furthermore, from the wide variety of paper maps, the skilled person would not derive a clear teaching leading to the present invention. It is therefore only with the benefit of hindsight that one would arrive at the present invention.

III. In a communication pursuant to Article 11(2) of the Rules of Procedure of the Boards of Appeal, the Appellant was informed inter alia that the subject-matter of claim 1 according to the Appellant's main request did not appear to fulfil the requirement of inventive step for the reasons given in the decision of the Examining Division.

IV. In response to the above communication, in its letter dated 11 September 1995, the Appellant withdrew its former requests and instead requested that a patent be granted on the basis of an independent claim 1 of a new main or auxiliary request.

V. In a communication dated 22 September 1995, the Board informed the Appellant that claim 1 of the Appellant's main request was allowable, and as a result the oral proceedings were cancelled. The Appellant was asked to submit amended sub-claims and description corresponding to the main request.

VI. With a letter dated 30 October 1995, the Appellant filed a clear copy of claim 1, amended pages of the description and amended dependent claims. The Appellant thus requests the grant of a patent based on the following documents:

Description: pages 1 to 3 and 7 to 189 as originally filed;
pages 4, 5 and 6 filed with the letter of 30 October 1995;

Claims: 1 to 22 filed with the letter of 30 October 1995;

Drawings: Sheets 1/30 to 30/30 as originally filed.

Independent claim 1 reads as follows:

"Apparatus for displaying at selected scale levels a map of streets corresponding to an area over which a vehicle may move, to assist a driver to navigate, comprising:

a) a stored map database having data identifying the location of streets of the area and data in the

form of a code identifying each street as of a predetermined priority category;

b) means for selecting the scale levels;

c) means responsive to the data, for selecting certain streets of the map to display in dependence on a selected scale level and said code;

d) means for providing input data identifying the current location and heading direction of the vehicle;

characterised by the database further having data in the form of labels for streets, and by the apparatus further comprising:

e) means responsive to the database data, for selecting street labels for display in accordance with a dynamic ordering scheme which selects and prioritises street labels to display in dependence on the input data identifying the current location and heading direction of the vehicle, said means assigning priority values to labels of said certain streets by at least:

using the input data and the database data to identify a next cross street ahead of the vehicle and assigning a priority value to the label of any said street identified; and

using the input data and the database data to identify the street on which the vehicle is travelling and assigning a priority value to the label of any said street identified;

f) means for selecting certain street labels for display by using said assigned priority values; and

g) means for producing a map display showing the certain streets and the certain street labels."

Reasons for the Decision

1. *Amendments*

Features a), b) and c) of claim 1 and the opening statement in the claim preceding these features are disclosed in claim 1 as originally filed. Feature d) is supported, for example, by feature b) of the originally filed claim 25. The statement in the characterising part of the claim, "data base having data identifying the location of streets of the area ..... of a predetermined priority category" and features f) and g) of the claim are supported by the subject-matter of claim 8 as filed. Feature e) relating to a dynamic ordering scheme is derivable from the original description on page 22, first, second and fourth paragraphs; page 47, second paragraph to page to page 50, first paragraph and figure 17. The Board is therefore satisfied that the claim fulfils the requirement of Article 123(2) EPC.

The Board also finds that the dependent claims are supported by the originally filed documents.

The description has been amended to acknowledge the prior art document D1 and for consistency with the amended claim 1.

In view of the above, the amendments comply with the requirement of Article 123(2) EPC.

2. *Inventive step*

The only remaining issue in the present appeal is therefore the question of inventive step.

2.1 It is not in dispute that document D1 constitutes the closest prior art and discloses an apparatus for displaying at selected scale levels a map of streets corresponding to an area over which a vehicle may move to assist a driver to navigate (see page 1, lines 1 to 9; page 2, line 21 to page 3, line 5) comprising:

a stored map database having data identifying the location of streets and data in the form of a code identifying each street as of a predetermined priority category (called "route classification" in document D1; see figure 2, box 181 and page 11, lines 9 to 11);

means for selecting scale levels (page 8, line 27 to page 9, line 3);

means responsive to the data, for selecting certain streets of the map to display in dependence on a selected scale level (see page 12, lines 5 to 15), and

means for providing input data identifying the current location and heading direction of the vehicle (see claims 3 and 4).

Document D1 thus discloses all the features of the preamble of claim 1.

2.2 In the display apparatus of document D1, however, street labels are not displayed, and the apparatus is therefore not provided with any means for selecting certain street labels for display.

The claimed subject-matter is therefore distinguished over the closest prior art in that:

the database further has data in the form of labels for streets, and in that the apparatus further comprises:

e) means responsive to the database data, for selecting street labels for display in accordance with a dynamic ordering scheme which selects and prioritises street labels to display in dependence on the input data identifying the current location and heading direction of the vehicle, said means assigning priority values to labels of said certain streets by at least:

using the input data and the database data to identify a next cross street ahead of the vehicle and assigning a priority value to the label of any said street identified; and

using the input data and the database data to identify the street on which the vehicle is travelling and assigning a priority value to the label of any said street identified;

f) means for selecting certain street labels for display by using said assigned priority values; and

g) means for producing a map display showing the certain streets and street labels.

2.3 In view of the above distinguishing features taken together, the objective problem addressed by the invention in relation to the closest prior art can be seen as providing a dynamic display system which in response to the current position and the heading direction of a vehicle displays a street map that does not present unnecessary information for the current navigational requirements and is therefore easy to read (see for example page 3, last but second paragraph and page 5, second paragraph of the application in suit).

2.4 The Board agrees with the Appellant that neither of documents D1 and D2 discloses that the street labels (i.e. street names) are displayed. Nevertheless, since both documents disclose that labels of key spots or destinations may be displayed (see, for example document D1, page 10, lines 14 to 24 ; document D2, page 5, lines 7, 17, 18 and Figure 2(A)), and since it is generally well known from conventional paper city maps that the presence of the street names on the displayed streets is an important, if not indispensable, navigational aid, in the Board's view, it would be obvious to a skilled person to store the street names and to include means for displaying such names adjacent to the displayed street in the display apparatus as disclosed in document D1.

The present invention goes further than just displaying street labels, however. As can be seen from features (e) and (f) of claim 1 under consideration, the claimed display apparatus includes means which assigns priority values to street labels and selects the street labels for display using the assigned priority values, the priority values being assigned by using, inter alia, the current position and heading direction of the vehicle, the next cross street ahead of the vehicle and the street on which the vehicle is travelling.

Document D1 discloses sensing means for detecting the current location and heading of the vehicle (see, for example, page 24, lines 6 to 9 and page 28, lines 9 to 23). However, the sensed data is used to determine the scale level at which the map is to be displayed. As each scale level has an associated level of information (0, 1, 2 etc.) about the routes and spots, only those routes and spots corresponding to a particular information level are displayed in response to the sensed data (see page 36, line 24 to page 39, line 5; Table 3 and Figures 13 to 15). In the display apparatus according to the present invention, on the other hand, the scale level and the associated level of information about the streets to be displayed are selected in dependence on the data stored in the database (see features a) to c) of the claim), and the input data identifying the current location and heading direction of the vehicle are used for displaying street labels of a next cross street ahead of the vehicle and the street on which the vehicle is travelling by assigning priority values to these streets. The function of the means for identifying the location and heading of the vehicle according to document D1 is therefore different from the function of such means according to the present invention. In the Board's view, document D1 does not suggest to a skilled person that these means could be used to assign priority values to street labels by identifying cross streets and streets on which the vehicle is travelling.

Document D2 is concerned with the problem of presenting alphanumeric data (such as names of places) upright, so that they are easy to read even when the displayed map is rotated for indicating vehicle travel direction (see page 3, lines 4 to 14; page 6, lines 4 to 6 and 19 to 21). Document D2 is thus not concerned with a dynamic selection of certain street labels for display and

therefore does not give any hint pointing in the direction of the claimed invention.

The invention as claimed is concerned with a display apparatus comprising a dynamic ordering scheme providing a display of street labels in response to current location and heading direction of the vehicle. The conventional maps (including the hard copy advertising maps displaying only relevant street labels leading to, e.g. a shop) on the other hand provide only static display of street labels, so that the skilled person concerned with the objective problem mentioned in section 2.3 above would not derive any help from such static displays which would lead to the claimed subject-matter.

The remaining documents of the European and PCT search reports are less relevant to the present invention.

2.5 For the above reasons, in the Board's judgment, the claimed subject-matter was not obvious to the skilled person having regard to the cited prior art. The subject-matter of claim 1 therefore involves an inventive step within the meaning of Article 56 EPC.

The remaining claims 2 to 22 are dependent claims. These claims therefore meet the requirement of inventive step.

Order

For these 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 grant a patent on the documents as specified in section VI above.

The Registrar: The Chairman:

M. Beer G. D. Paterson