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D E C I S I O N
of 15 December 1999

Case Number: T 0815/98 - 3.5.1

Application Number: 92306330.9

Publication Number: 0522862

IPC: G01S 5/02

Language of the proceedings: EN

Title of invention:

GPS Navigation system with selective position offset correction

Patentee:

PIONEER ELECTRONIC CORPORATION

Opponent:

Interessengemeinschaft für Rundfunkschutzrechte GmbH
Schutzrechtsverwertung Co.KG

Headword:

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Relevant legal provisions:

EPC Art. 56

Keyword:

"Inventive step (no)"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0815/98 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 15 December 1999

Appellant: PIONEER ELECTRONIC CORPORATION
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 5 June 1998
revoking European patent No. 0 522 862 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: P. K. J. van den Berg
Members: R. S. Wibergh

S. C. Perryman

Summary of Facts and Submissions

I. This is an appeal by the proprietor of European Patent No. 0 522 862 against the decision of the Opposition Division to revoke the patent.

II. Claim 1 as granted reads as follows (omitting the reference signs):

A navigation system for use on a mobile object,
comprising:

- GPS positioning means for receiving radio waves from GPS satellites, determining the present position of the mobile object based on the received radio waves, and outputting first positional data indicative of the determined position;
- self-operating positioning means having a sensor on the mobile object for determining the present position of the mobile object and outputting second positional data indicative of the determined position;
- determining means for comparing said first positional data and said second positional data to determine whether or not the difference between the present position of the mobile object as indicated by said first positional data and the present position of the mobile object as indicated by said second positional data is equal to or greater than a predetermined value, characterised by

- correcting means for adding an offset value to said first positional data if said difference is equal to or greater than said predetermined value.

Claim 2 reads:

A navigation system according to claim 1 further comprising:

- position calculating means for outputting display data to display the present position of the mobile object based on said first positional data as corrected by said correcting means; and
- display means for displaying the present position of the mobile object based on said display data.

III. The respondent had opposed the patent on the ground that the invention did not involve an inventive step having regard to - among others - the document

D4: JP-A-63 247613 (abstract)

mentioned in the description of the patent.

IV. The Opposition Division refused both the patentee's main request for maintenance of the patent as granted and his auxiliary request, submitted at the oral proceedings before the Opposition Division on 11 May 1998, for maintenance of the patent on the basis of claim 2 as granted.

V. Oral proceedings before the Board were held on 15 December 1999.

The appellant argued that the invention was non-obvious with respect to the prior art, and in particular D4.

The respondent argued that the invention performed basically the same function as the system in D4 and that the only real difference was a trivial variation leading, if anything, to an inferior result.

- VI. The appellant requested that the decision under appeal be set aside and that the patent be maintained as main request as granted or as auxiliary request on the basis of the auxiliary request submitted at the oral proceedings before the Opposition Division on 11 May 1998.

- VII. The respondent requested that the appeal be dismissed.

Reasons for the Decision

The appellant's main request

1. *The invention*

The invention according to claim 1 is a navigation system intended primarily for cars. To determine the current position of the car two kinds of data are used: on the one hand GPS coordinates (determined on the basis of satellite signals) and on the other hand information based on distance and azimuth data gained from sensors in the car (referred to as "dead reckoning data" in the decision under appeal, which usage is taken over here). Each set of data yields a preliminary

position indication. These are compared. If their difference is larger than a predetermined value the system corrects the GPS position by adding an offset to it. The value of the offset is not specified in claim 1 but according to the only example in the description it corresponds to the difference between the GPS position and the dead reckoning position (column 8, lines 23 to 31). Claim 2 makes it clear that it is the corrected GPS position which is displayed to the driver.

2. *The prior art*

The closest prior art is described in D4. According to this document the difference between the GPS data and the dead reckoning data is compared with a threshold which increases in proportion to the distance the car has travelled using dead reckoning data only, ie since the last GPS update. If the difference is within the allowable range, the GPS data are regarded as reliable and used for determining the car's current position. If the difference is outside the range, the GPS measurement is regarded as erroneous and the dead reckoning data are used instead.

3. Since it has never been alleged that the invention lacks novelty only the inventive activity need be considered.

4. Compared with D4 the invention has two new features. First, the threshold is not an increasing value but a *predetermined* one, ie a constant. Second, when the threshold is exceeded, GPS data are not replaced but *corrected* with an offset.

5. During the oral proceedings before the Board the appellant explained the problem the invention was supposed to overcome. Previously the position indication on the display had tended to jump in a jerky and confusing manner. The recognition of this drawback of the prior art was an important contribution to the inventive step. The solution consisted in choosing a predetermined threshold, whose value the skilled person would select such that jumps could be avoided. A consistent display was more important than a strictly correct position indication. The choice of a predetermined threshold furthermore led to considerable simplifications and represented an inventive deviation from the general trend.

6. The Board, however, is not convinced that the patent as a whole supports the view that the subject-matter of claim 1 solves the problem of a jerky position indication by means of a suitable threshold value. According to the only embodiment, the offset value is equal to the difference between the position calculated from the GPS reading and the position calculated from the dead reckoning data. The corrected GPS position then becomes identical with the dead reckoning position. This is effectively in correspondence with the prior art according to which the GPS reading is replaced by the dead reckoning value. The display will be the same in the two cases.

The appellant has argued that claim 1 is not limited to the described example and that the skilled person would choose an offset value which eliminates jumps. It must however be considered that claim 1 covers the described embodiment and that its subject-matter has to be non-

obvious in its entirety in order to fulfil the patentability requirements.

7. Even if the invention may result in an identical position indication as the prior art, the difference remains that according to the invention a correction is added to the GPS data whereas the prior art proposes to replace the GPS data altogether. In principle this different calculation, or its implementation, might have some advantage. However, no such advantage has been suggested and none is evident from the description of the invention. Since the feature has not been shown to contribute to the solution of a technical problem it can only be regarded as a mathematical equivalent. This equivalent appears banal since it involves just an extra addition. It does not result in a simplification (but rather the opposite). Under these circumstances the Board does not see how the claimed correction by means of an offset could possibly involve an inventive step.

8. As to the feature that the threshold is predetermined, the Opposition Division held that this was the simplest possibility of all and therefore not inventive.

If "simplest" is understood as "the most commonplace", the Board can only agree. It could be added that, if according to D4 the threshold is increasing with the distance travelled, this will have the effect of reducing the risk that the GPS position is not used at all as the dead reckoning position (due to unavoidable errors) drifts away from it. This use of a increasing threshold is not trivial and implies that the alternative - ie that the threshold is a constant - has

been considered and found disadvantageous. Normally, however, a previously discarded feature is not regarded as inventive unless it can be shown to have (favourable) properties which had not been recognised before. This is however not the case here.

9. It follows that the appellant's main request is refused.

The appellant's auxiliary request

10. The auxiliary request is based on claim 2 as granted. This dependent claim introduces the features that there is a display and that the corrected GPS data form the basis for the displayed position. However, none of these features adds anything inventive to the main request. The display is conventional, and the fact that the corrected GPS data form the basis for the displayed position has already been taken for granted above.

Thus this request must also be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Kiehl

P. K. J. van den Berg