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D E C I S I O N
of 21 April 2005

Case Number: T 0338/03 - 3.5.2

Application Number: 95120628.3

Publication Number: 0720137

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Title of invention:
Traffic information system

Patentee:
OMRON CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - (yes, amended)"

Decisions cited:
-

Catchword:
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Case Number: T 0338/03 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 21 April 2005

Appellant: OMRON CORPORATION
10, Tsuchido-cho,
Hanazono,
Ukyo-ku,
Kyoto-shi,
Kyoto 616 (JP)

Representative: Käck, Jürgen, Dipl.-Ing.
Patentanwälte
Kahler Käck Mollekopf
Vorderer Anger 239
D-86899 Landsberg am Lech (DE)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 5 December 2002 refusing European application No. 95120628.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: R. G. O'Connell
E. Lachacinski

Summary of Facts and Submissions

I. This is an appeal against the refusal of European patent application No. 95 120 628.3 by decision of the examining division posted 5 December 2002 for lack of inventive step of the subject-matters of claims 1 of the main and auxiliary requests((Article 56 EPC).

II. The following prior art documents are referred to in this appeal decision:

D1: Vehicle Navigation and Information Systems Conference (VNIS), Toronto, Sept. 11-13, 1989, Conference record, pages 206-213, Fukui R. et al: 'Individual communication function of RACS: Road Automobile Communication System';

D2: US 5 164 904 A.

III. On appeal, the applicant filed an amended claim 1, which is worded as follows:

"A traffic information system comprising:

a plurality of individual information collecting apparatuses (3), each apparatus is to be used on a vehicle (2) for collecting individual information; and

a center apparatus (9), wherein

each individual information collecting apparatus (3) comprises:

position sensing means (20) for measuring at least a position to produce position data,

a first transmitter (11) for transmitting a signal representing individual information including the position data produced by said position sensing means,

a first receiver (12) for receiving a center apparatus signal transmitted from said center apparatus (9), and

a reporting device (25) for reporting information; and

said center apparatus (9) comprises:

a second receiver (52) for receiving the signals representing the individual information transmitted from said first transmitters (11) in said individual information collecting apparatuses (3),

information processing means (50), and

second transmitting means (51) for transmitting said center apparatus signal to vehicles (2);

characterized in that

each individual information collecting apparatus (3) comprises sensing means (14-16) for automatically sensing information representing environmental circumstances, wherein said individual information transmitted by said first transmitter (11) includes the information sensed by said sensing means (14-16),

said information processing means (50) of said center apparatus (9) creates synthesis information relating to a region (A, B, ..) within a predetermined range on the basis of said individual information transmitted from said individual information collecting apparatuses (3) and received by said second receiver (52),

said center apparatus signal transmitted by said second transmitting means (51) represents the synthesis information created by said information processing means (50), and

said reporting device (25) reports the synthesis information received by said first receiver (12)."

Claims 2 to 15 are dependent on claim 1.

Claim 16 is worded as follows:

"An information collecting apparatus, used in a traffic information system comprising a plurality of information collecting apparatuses (3), each apparatus is to be used on a vehicle (2), for collecting individual information including information representing environmental circumstances for transmission to a center apparatus (9) for creating synthesis information relating to a region within a predetermined range on the basis of the individual information transmitted from the plurality of information collecting apparatuses, the information collecting apparatus comprising:

position sensing means (20) for measuring at least a position to produce position data;

sensing means (14-16) for automatically sensing information representing environmental circumstances; and

a first transmitter (11) for transmitting a signal representing individual information including the position data produced by said position sensing means, an identification code relating to said information collecting apparatus, and the information sensed by said sensing means (14-16)."

Claims 17 to 26 are dependent on claim 16.

IV. The applicant appellant argued essentially as follows:

Amended claim 1 defined a traffic information system providing synthesized traffic information for a (target)

region (A, B, C,..). The traffic information relevant for the target region was synthesized on highly relevant and up-to-date data input. Namely the data was input as individual information which included environmental circumstances. The sources for the up-to-date (see description page 107, 1. 4-11) individual information were individual information collecting apparatuses on vehicles. In these the environmental circumstances were automatically acquired by sensing means.

The individual information provided by the sensing means were environmental circumstances which represented 'extrinsic' data in relation to the vehicle, see page 53, lines 17-21. 'Extrinsic' data were not related to a state or a circumstance of the vehicle itself, in contrast to 'intrinsic' data of the vehicle, e.g. position data, distance, heading, velocity etc.. Examples for 'extrinsic' data acquired by sensing means were road surface condition (p. 79, 1. 19 top. 80, 1. 15), weather information and traffic jam (p. 70, 1. 14 to p. 72, 1. 19).

The environmental circumstances or 'extrinsic' data were collected while the vehicle was driving or standing in the (target) region. By information from only one vehicle in the region carrying an individual information collecting apparatus it was possible to detect a traffic jam or a spatially resolved road condition while the vehicle was driving, see e.g. Fig. 71. In summary, a low number of vehicles having such information collecting apparatus in the region was sufficient to provide reliable information about environmental circumstances. At the same time

information synthesis for information to be reported to the drivers of vehicles was exclusively generated in the center apparatus. Thus the information sent to the vehicles was fully pre-processed and a reporting device reporting the relevant regional traffic information could be of simple construction without special equipment for further processing the synthesis information received from the center apparatus.

Claim 1 had been delimited with respect to prior art document D2. The latter described an In-Vehicle Traffic Congestion Information Scheme (ICI-System) providing traffic information in a standardised form of link messages for vehicles. A vehicle processor subsystem 103 in the vehicles synthesised cell messages from assembled link messages. A cell was comparable to a (target) region (A, B,...) in claim 1 of the present application. The cell was defined in the vehicle subsystem 103, depending on intrinsic data of the vehicle. The link messages provided by the central subsystem 101 (center apparatus) were generated using traffic data of different sources, wherein vehicles might be provided with electronic tracking devices to transmit location, distance heading and velocity data to the central subsystem 101. These position data were intrinsic data; no extrinsic or environmental data were transmitted from the vehicle to the central subsystem 101.

It had to be borne in mind that sensor and communications technology had developed enormously in the years since the priority date of the application. The concept of intelligent cars telecommunicating with

remote systems was a recent development significantly after the priority date.

In prior art document D1 the traffic flow (positional data) was assessed by vehicle registration numbers as they passed beacons along a road. It was mainly proposed that the information center station should obtain weather data from "other organisations" and provide these to the vehicles via the beacons. As a possible option it would be desirable to collect traffic jam or weather information "observed" by drivers.

At point 2.7 in decision under appeal it was argued that "AVM" (automatic vehicle monitoring) in D1 implied that (environmental) data were automatically collected and transmitted to the center system. This was not convincing. This way one could also conclude that only vehicles having an automatic gear box were participants in the system. In its linguistic meaning AVM said that the vehicles were automatically monitored. AVI used in D1 stands for "automatic vehicle identification". Both meanings and applications were the obvious teaching of D1: the vehicles passing a beacon are 'automatically' identified using the vehicle ID. Its passing time and presence was 'automatically' reported to the central station.

Admittedly, when reading the text passage from page 212, right column, last paragraph, to p. 213, left column, first paragraph, it was difficult to switch off the teaching of the present application. It was clear that some data could not be acquired 'automatically' by the equipment of the vehicle, i.e. destination, driver name,

travel purpose. Such "data and other necessary data were input" by the driver. The data available in the equipment was 'automatically' transmitted after departure. Then it was taught that the car inputs 'extrinsic' data to equipment mounted on the vehicle. Such 'extrinsic' data included the information "accident". Input was made to the equipment obviously not including sensors and any sensor for automatic inputting 'extrinsic' data was absent. The teaching of inputting 'extrinsic' data was made on page 211, right column, first paragraph, where this was done by the driver. It seemed to be an inadmissible retrospective view that from D1 the skilled person was taught to use sensors to automatically provide 'extrinsic' data.

On the other side, if 'extrinsic' data was provided by the driver, the reliability and frequency of such data would not be very high since it would depend on the willingness of the drivers.

Even if the 'would'-question was skipped and automatic sensors were assumed, a mosaic-like collection of isolated features resulted and the question of the interaction of the system (claim 1) or in the system (claim 16) remained. Document D1 did not consider individual environmental data provided by vehicles and did not synthesize data for transmission relating to a region (for illustration see e.g. application page 108, line 20 to page 109, line 3). This way of synthesizing information relating to a region in a center apparatus and distributing locally resolved synthesis information was not obvious from D1 and also not from the combined teaching of D2 and D1.

Summarizing, the subject matters of claims 1 and 16 were not obvious from either document D1, D2 or the combined teaching of D1 and D2 and hence the subject matters involved an inventive step.

V. The applicant appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of:

Claims: claim 1, filed with the appeal, as received on 31 January 2003;
claims 2 to 3 (part) and 7 (part) to 26 of the main request filed with the letter dated 9 October 2002;
claims 3 (part) to 7 (part) faxed 15 April 2005;

Description: pages, 1,1a, and 3 to 17 filed with the letter dated 9 October 2002,
page 2 faxed 15 April 2005,
pages 18 to 119, as originally filed;

Drawings: sheets 1 to 68, as originally filed.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty (Article 54(1)and(2) EPC)*

Claim 1 is properly delimited with respect to the closest prior art represented by document D2 and its subject-matter is accordingly new.

3. *Objective technical problem*

The board agrees with the appellant applicant that the formulation of the objective technical problem relative to D2 in the decision under appeal, viz "How can the amount of information collected at the centre apparatus be increased?" is inappropriate as it, on the one hand, unfairly anticipates elements of the solution and, on the other hand, misleadingly implies that the skilled person would routinely regard more information as better regardless of how it was acquired or presented.

Even the appellant applicant's own formulation: "…provide reliable up-to-date traffic information for a selected region wherein requirements for reporting the traffic information related to the region are low." could be regarded as coming close to anticipating the solution. In the judgement of the board, any attempt to formulate the problem more precisely than: "to provide more reliable and more up-to-date traffic information for a selected region" is potentially unfair, since a significant element of the solution lies in deciding which information to collect as well as how to collect it.

4. *Inventive step (Article 56 EPC)*

The appellant applicant's arguments on the issue of inventive step have been reproduced rather fully above. In the judgement of the board they persuasively refute the reasoning in the decision under appeal and to avoid repetition are accordingly approved and adopted by the board. In particular the board agrees with the

appellant applicant that the examining division has apparently allowed hindsight to influence its interpretation of prior art document D1. The notion that the use of the word "automatic" in the term "Automatic Vehicle Monitoring" (AVM) "leaves no doubt" that the car is fitted with means for automatically sensing rain strikes the board as far-fetched. The wording "when a car…encounters rain…the car inputs this information…" is in isolation not clear. The 'car' *per se* cannot input information and it is not clear that this is not done by the driver. The board accepts that the examining division interpreted the disputed wording in good faith, but considers that it placed too much reliance on the literal meaning of one word in isolation to the neglect of the most basic canon of interpretation - that a document is to be read as a whole. As the appellant applicant has pertinently observed, this field has developed so rapidly in the last decade that it is indeed difficult mentally to blank out the disclosure of the patent application when reading a document such as D1. The board concludes that the examining division did not quite succeed in this difficult task in this particular case.

The board observes additionally that the straightforward way of detecting and reporting environmental circumstances such as rain or fog at a particular location is by means of a fixed reporting station at the location concerned, eg alongside a motorway. D1 adds a variant within a driver reporting system to include a weather report from the driver when the vehicle passes a beacon station at a fixed location. This leaves a significant non-obvious step to a system as in the present application where the vehicle itself

acts as a mobile weather reporting station, or reports other environmental circumstances.

The reasoning above applies also *mutatis mutandis* to claim 16.

5. In the judgement of the board, the application meets the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent in the following version:

Claims: claim 1, filed with the appeal, as received on 31 January 2003;
claims 2 to 3 (part) and 7 (part) to 26 of the main request filed with the letter dated 9 October 2002;
claims 3 (part) to 7 (part) faxed 15 April 2005;

Description: pages, 1,1a, and 3 to 17 filed with the letter dated 9 October 2002,
page 2 faxed 15 April 2005,
pages 18 to 119, as originally filed;

Drawings: sheets 1 to 68, as originally filed.

The Registrar: The Chairman:

D. Sauter W. J. L. Wheeler

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Case Number: T 0338/03 - 3.5.2

DECISION
of 13 May 2005 correcting an error in the decision of the Technical Board of Appeal 3.5.2 of 21 April 2005

Appellant: OMRON CORPORATION
10, Tsuchido-cho,
Hanazono,
Ukyo-ku,
Kyoto-shi,
Kyoto 616 (JP)

Representative: Käck, Jürgen, Dipl.-Ing.
Patentanwälte
Kahler Käck Mollekopf
Vorderer Anger 239
D-86899 Landsberg am Lech (DE)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 5 December 2002 refusing European application No. 95120628.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: W. J. L. Wheeler
Members: R. G. O'Connell
E. Lachacinski

In application of Rule 89 EPC, the decision dated 21 April 2005 is corrected as follows:

Page 8, paragraph V

line 6, the text '7 (part)' is replaced by '8';
line 9, the text '(part)', second occurrence, is deleted.

Page 11, point 2 of the order

line 6, the text '7 (part)' is replaced by '8';
line 9, the text '(part)', second occurrence, is deleted.

The Registrar: The Chairman:

D. Sauter W. J. L. Wheeler