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**Datasheet for the decision
of 18 August 2011**

Case Number: T 2110/08 - 3.5.03

Application Number: 02799447.4

Publication Number: 1433035

IPC: G05D 1/00

Language of the proceedings: EN

Title of invention:
Geofencing moveable vehicles

Applicant:
LoJack Corporation

Opponent:
-

Headword:
Geofence/LOJACK

Relevant legal provisions:
EPC Art. 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Inventive step (main and auxiliary requests) - no"

Decisions cited:
T 0130/89

Catchword:
-



Case Number: T 2110/08 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 18 August 2011

Appellant: LoJack Corporation
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 June 2008
refusing European application No. 02799447.4
pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: T. Snell
M.-B. Tardo-Dino

Summary of Facts and Submissions

This appeal is against the decision of the examining division refusing European patent application No. 02799447.4, with publication number WO-A-03/027786, on the ground that the subject-matter of independent claim 1 did not involve an inventive step in the light of the disclosure of the document:

D1: US-B-6204772.

- I. In the notice of appeal the appellant appealed against the decision "in its entirety". In a subsequently filed statement of grounds, the appellant requested that "the Technical Board of Appeal reverse the decision of the Examining Division to refuse the application and allow the application to proceed to grant".
- II. In a communication accompanying a summons to oral proceedings the board gave a preliminary opinion that the independent claims did not meet the requirement of inventive step having regard, *inter alia*, to the disclosure of document D1.
- III. In a response to the board's communication, the appellant filed amended claims together with arguments supporting its view that the subject-matter of the independent claims involved an inventive step with respect to the disclosure of document D1.
- IV. Oral proceedings were held on 18 August 2011. In the course of the oral proceedings the appellant filed claims of an auxiliary request. The appellant requested that the decision under appeal be set aside and that a

patent be granted on the basis of claims 1-16 of the main request as submitted with the letter of 14 July 2011, or alternatively of claims 1-16 of the auxiliary request filed during the oral proceedings. After deliberation, the board's decision was announced at the end of the oral proceedings.

V. Claim 1 of the appellant's **main request** reads as follows (NB: underlinings included in the copy submitted by the appellant have been omitted):

"A method that comprises, controlling by transmitted radio commands from a remote control center (3) the dynamic GeoFencing of a vehicle (1) or other movable apparatus internally provided with a GPS receiver (1A), software-implemented processor (1B), and communication links (1C) by transmitting a first command (S_c) from said control center (3) to the vehicle (1) to receive and transmit to the control center (3), the current GPS location point of the vehicle (1); pre-determining at the control center (3) the desired shape and size of a GeoFence around the vehicle (1) and transmitting further commands to the vehicle (1) to establish such a control-center pre-determined GeoFence; and responding at the processor (1B) to said further commands by operating said software to calculate in the processor (1B) the location of points (P) defining the perimeter of said control-center pre-determined desired shape and size of GeoFence, thereby establishing the desired GeoFence about the current vehicle location point (O) from data calculated at said vehicle processor (1B)."

VI. Claim 1 of the **auxiliary request** reads as follows (NB: underlinings included in the copy submitted by the appellant have been omitted):

"A method that comprises, controlling by transmitted radio commands from a remote control center (3) the dynamic GeoFencing of a vehicle (1) or other movable apparatus internally provided with a GPS receiver (1A), software-implemented processor (1B), and communication links (1C) by transmitting a first command (S_c) from said control center (3) to the vehicle (1) to receive and transmit to the control center (3), the current GPS location point of the vehicle (1); pre-determining at the control center (3) in response to knowledge of that location point the desired shape and size of a GeoFence around the vehicle (1), transmitting further commands from the control center 3 [*sic*] to the vehicle (1) to establish such a control-center pre-determined GeoFence; operating said software in response to said further commands to calculate in the processor (1B) the location of points (P) defining the perimeter of said desired shape and size of GeoFence predetermined in the control centre 3 [*sic*] to establish the desired GeoFence about the current vehicle location point (O) from data calculated at said vehicle processor (1B)."

Reasons for the decision

1. *Background*

The present application relates to the field of "GeoFencing", which involves determining whether a movable entity such as a vehicle equipped with a GPS

receiver has strayed outside some predetermined area, bounded by a so-called "GeoFence".

2. *Inventive step*

2.1 *Claim 1 - main request*

2.1.1 Document D1 is considered to represent the closest prior art. D1 describes a monitoring system for a mobile machine (col. 2, lines 23-32), hereinafter referred to as a "vehicle", using the terminology of claim 1 of the main request. The vehicle of D1 may include a GPS receiver for determining the location of the vehicle (col. 2, lines 41-46). The vehicle comprises a mobile communicator for communicating via a radio link (col. 2, lines 50-57) with a "remote monitoring station", which is a "control centre" within the meaning of claim 1. The remote monitoring station transmits "geographic data packets" for configuring the vehicle (col. 3, lines 21-27). The geographic data packets comprise in one embodiment a centre point, eg a latitude and longitude, and a radius which define the region to be monitored (col. 4, lines 1-4), ie the monitored region is a circle. If the vehicle is currently within the monitored region, the boundary of the monitored region is considered to be a "GeoFence" about the current position of the vehicle. The mobile communicator compares the current position of the vehicle obtained from the GPS receiver with the monitoring region, and sets an alarm if the vehicle moves outside the monitoring region (col. 4, lines 27-55). In other words, the GeoFence is established from data calculated at the mobile communicator. Further, as the vehicle system can be

remotely (re-)configured, in the board's view, D1 is concerned with a system of "dynamic GeoFencing" within the meaning of claim 1.

2.1.2 In view of the above it follows that D1, using the wording of claim 1 of the main request, discloses a method that comprises controlling by transmitted radio commands from a remote control centre the dynamic GeoFencing of a vehicle or other movable apparatus internally provided with a GPS receiver, software-implemented processor, and communication links; pre-determining at the control centre the desired size of a GeoFence around the vehicle and transmitting commands to the vehicle to establish such a control centre pre-determined GeoFence; and responding at the processor to said further commands by operating said software, thereby establishing the desired GeoFence about the current vehicle location point from data calculated at said vehicle processor.

2.1.3 The subject-matter of claim 1 differs from the disclosure of D1 in the following respects:

(a) The control centre predetermines the shape of the GeoFence as well as the size.

(b) A first command is transmitted from said control centre to the vehicle to receive and transmit to the control centre, the current GPS location point of the vehicle.

(c) The processor of the vehicle calculates the location of points defining the perimeter of said

control centre pre-determined desired shape and size of GeoFence.

- 2.1.4 In the board's view these three features concern separate and unrelated problems whose solutions can be assessed separately for inventive step (cf eg T 130/89, OJ 1991, 514).
- 2.1.5 Re (a): Self-evidently in the real world a circle, as disclosed in D1, is not always the most desirable shape of the GeoFence. The skilled person accordingly would be led to contemplate using other shapes. Being aware that the use of a circle defined by a radius and a centre point has the advantage of requiring a low bandwidth channel between the control centre and the vehicle since such data fits easily into the geographic packets used in D1, the skilled person would readily contemplate other simple geometric shapes which can be defined easily by a small amount of data in a geographic packet, eg squares or rectangles. In the board's view this step would not require inventive skill.
- 2.1.6 Re (b): This distinguishing feature, when seen in the context of the term "dynamic GeoFencing" used in claim 1, was interpreted by the appellant in the sense that not only is the GPS location of the vehicle transmitted to the control centre, but also the shape and size of the Geofence is based on this location. For the sake of argument, the board adopts the same interpretation.

This feature provides the technical effect that the parameters of the GeoFence can be changed when the vehicle is moved to a new location.

The problem of needing to take account of the location of the vehicle when defining the fence parameters was well-known at the filing date, see for example page 2, lines 8-13 of the present application with respect to the prior art, which states: "The fence parameters may change because the position of the vehicle itself may be moved from town to town, requiring changed origin points; or the size of the GeoFence may be varied, altering the radius, say, [from] one mile to two miles". The board considers this to be part of common general knowledge, which the appellant did not deny.

Further, it follows from the description of the present application on pages 1 and 2 that it was well-known to solve this problem by carrying out prior registration of the location of the vehicle at the control centre in order that the control centre can change the parameters of the GeoFence based on this location and communicate the new parameters to the vehicle (cf. the paragraph bridging pages 1 and 2). The board regards this solution also as being part of common general knowledge, which the appellant did not deny either.

Since D1 already provides a means for changing the parameters of the GeoFence around the vehicle by the remote monitoring station, it would be obvious to the skilled person to incorporate this known solution described in the present application, ie changing the parameters in accordance with the registered location, into the system of D1. This step therefore does not

involve an inventive step. Furthermore, the board considers it to be obvious that for the system to work effectively, the registered location information of the vehicle should be accurate and up-to-date. Given that a source of accurate location information is the GPS data currently held by the vehicle, it would readily occur to the skilled person that the remote monitoring station of D1 can be used to obtain the GPS data from the vehicle before reconfiguring the GeoFence. The board concludes that this aspect does not contribute to an inventive step either.

2.1.7 Re (c): The skilled person is aware that a circle can either be defined in terms of a centre point and a radius or as a plurality of Cartesian points plotted around the circumference. Similar considerations apply to other simple geometric shapes. Starting out from D1, the skilled person wishing to define the parameters of a GeoFence in the vehicle, would appreciate that the radius and centre point information received by the vehicle could be converted to Cartesian data points. The appellant argued in the statement of grounds that the use of Cartesian points allowed any shape or size to be computed instead of only a circle as in D1. However, the application only gives examples of simple geometric shapes such as a circle, square, or polygon, and there is no suggestion that complicated or irregular shapes are contemplated or how these could be computed in the vehicle from data provided by the control centre. The appellant also argued that there is no need in D1 to calculate points of the perimeter since it is only necessary to compare the distance of the vehicle from the centre point with the radius to determine whether the vehicle is outside the monitoring

region. Indeed, the appellant alleged that in D1 nothing is actually computed in the vehicle. However, the board disagrees that nothing is computed in the vehicle, since computations are necessary to determine whether the vehicle is inside or outside the monitored area. Moreover, although it may not be necessary in D1 to represent the GeoFence in terms of a series of points on the perimeter, in the case of the simple geometric shapes used in the present application no technical advantage can be seen in using a series of Cartesian points for comparison with the vehicle location which might justify an inventive step, and the appellant was not able to give one either.

2.1.8 At the oral proceedings, the appellant also argued, as explained in the description on page 2, line 14 to page 3, line 4, that the invention eliminates the need for transmitting large amounts of data to the vehicle which requires considerable bandwidth. However, this aspect of a reduced bandwidth requirement has already been solved by D1 in that only a centre point and a radius are transmitted in the geographic data packet. As noted at point 2.1.5 above, the skilled person would find it obvious to apply an analogous reduced-bandwidth scheme to other geometric shapes. The board therefore found this argument unconvincing.

2.1.9 The board concludes that the subject-matter of claim 1 of the main request does not involve an inventive step with respect to the disclosure of document D1 combined with common general knowledge (Articles 52(1) and 56 EPC).

2.2 *Claim 1 - auxiliary request*

2.2.1 The amendments to claim 1 of the auxiliary request with respect to the main request merely clarify that the size and shape of the GeoFence are based on the location information obtained from the vehicle. However, claim 1 of the main request has been interpreted by the board in the same sense. Hence the considerations set out above with respect to claim 1 of the main request apply, *mutatis mutandis*, to claim 1 of the auxiliary request.

3. *Conclusion*

Since neither claim 1 of the main nor of the auxiliary request is allowable, the requests as a whole are not allowable. As there is no allowable request, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

A. S. Clelland