Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 19 June 2023

Case Number: T 0469/21 - 3.5.05

Application Number: 14152594.9

Publication Number: 2772895

IPC: G08G1/123

Language of the proceedings: EN

Title of invention:
Method and Apparatus for Transit Mapping

Applicant:
HERE Global B.V.

Headword:
Route polyline/HEREGLOBAL

Relevant legal provisions:
EPC Art. 123(2)
RPBA 2020 Art. 13(2)

Keyword:
Amendments - allowable (no)
Amendment after summons - cogent reasons (no)

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 0469/21 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 19 June 2023

Appellant: (Applicant)	HERE Global B.V. Kennedyplein 222 5611 ZT Eindhoven (NL)
Representative:	Potter Clarkson Chapel Quarter Mount Street Nottingham NG1 6HQ (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 17 December 2020 refusing European patent application No. 14152594.9 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	E. Konak
	K. Kerber-Zubrzycka

Summary of Facts and Submissions

I. The appeal is against the examining division's decision to refuse the application on the grounds that claim 1 of the main request and of auxiliary requests 1 to 3 did not meet the requirements of Article 54 EPC and claim 1 of auxiliary requests 4 to 9 did not meet the requirements of Article 56 EPC. Auxiliary requests 1 to 9 were also found not to meet the requirements of Article 123(2) EPC.

II. With the statement setting out the grounds of appeal, the appellant re-filed the requests on which the contested decision was based. It requested that the decision be set aside and that a patent be granted on the basis of one of these requests.

III. The board summoned the appellant to oral proceedings.

In its preliminary opinion pursuant to Article 15(1) RPBA, the board raised a new objection under Article 123(2) EPC against the main request but otherwise agreed with the assessments in the contested decision.

With its letter of reply dated 28 April 2023, the appellant filed auxiliary request 10.

Oral proceedings were held before the board.

IV. Claim 1 of the main request reads as follows:

"A computer-implemented method for derivation of a transit route of a transit service comprising:
causing reception of location data of a transit service, wherein the location data is organized into a

plurality of sets, each set comprised of a plurality of location points, each set being organized by route and/or direction of the transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set and one or more subsequent location points, each subsequent location point from a different set of the same route and/or direction, wherein each subsequent location point is located within a predetermined distance of the first location point; and

aggregating the clusters by connecting two or more clusters to form a route polyline."

Claim 1 of auxiliary request 1 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route and/or direction of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route and/or direction, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline."

Claim 1 of auxiliary request 2 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline."

Claim 1 of auxiliary request 3 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route and direction of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route and direction, wherein each subsequent location

point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline."

Claim 1 of auxiliary request 4 reads as follows:

"A computer-implemented method for derivation of a bus transit route of a transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route and/or direction of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route and/or direction, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline."

Claim 1 of auxiliary request 5 reads as follows:

A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route and/or direction of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route and/or direction, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline and the route polyline represents the transit route for presentation to a user."

Claim 1 of auxiliary request 6 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline and the route polyline represents the transit route for presentation to a user."

Claim 1 of auxiliary request 7 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route and direction of the bus transit service;

generating a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route and direction, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained

from a first bus and each different set is obtained from a different bus; and

aggregating the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline and the route polyline represents the transit route for presentation to a user."

Claim 1 of auxiliary request 8 reads as follows:

"A computer-implemented method for derivation of a transit route of a bus transit service comprising:

causing reception, using a processor, of location data of the bus transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route of the bus transit service;

generating, using the processor, a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating, using the processor, the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the

route polyline and the route polyline represents the transit route for presentation to a user."

Claim 1 of auxiliary request 9 reads as follows:

"A computer-implemented method for derivation of a transit route of a transit service comprising:

causing reception, using a processor, of location data of a transit service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, each set being organized by route of the transit service;

generating, using the processor, a plurality of clusters, each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set, of the plurality of sets, of the same route, wherein each subsequent location point is located within a predetermined distance of the first location point, wherein the first set is obtained from a first bus and each different set is obtained from a different bus; and

aggregating, using the processor, the clusters by connecting two or more clusters to form a route polyline by calculating a center point of a cluster as a moving average of each of the points included in the cluster, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline and the route polyline represents the transit route for presentation to a user, the transit route corresponding to a new route after buses are re-routed from their original route."

Claim 1 of auxiliary request 10 reads as follows:

"A computer-implemented method for derivation of a bus route of a bus service, the method comprising:

causing reception of location data of a bus service, wherein the location data is organized into a plurality of sets, each set comprised of a plurality of location points, wherein the location data is a plurality of GPS traces obtained from a GPS device on a bus, wherein the plurality of GPS traces are received as seed data;

generating a plurality of clusters from the seed data, wherein each cluster is comprised of a first location point from a first set of the plurality of sets and one or more subsequent location points, each subsequent location point from a different set of the plurality of sets, wherein each subsequent location point is located within a predetermined distance of the first location point;

calculating a center point of a cluster as a moving average of each of the points included in the cluster; and

aggregating the clusters by connecting two or more clusters to form a route polyline that represents the bus route for presentation to a user, wherein the aggregating step connects the center points of a plurality of clusters to form the route polyline, and the bus route corresponds to a new route after the bus has been re-routed from its original route following an incident."

Reasons for the Decision

1. Main request

1.1 Claim 1 of the main request was amended during examination proceedings to include, *inter alia*, the features "each set being organized by route and/or direction of the transit service" and "[a different set] of the same route and/or direction". When this amendment was made, the appellant gave as a basis page 13, last two paragraphs of the description as filed. However, claim 1 as originally filed, which refers to the reception of location data in general, cannot be directly and unambiguously combined with features from the embodiment on page 13, which instead receives GPS traces as seed data.

This objection was raised in the board's preliminary opinion. As the appellant did not comment on it either in writing or at the oral proceedings before the board, the board sees no reason to change its preliminary opinion.

1.2 Therefore, claim 1 of the main request was amended in such a way that it contains subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC).

2. Auxiliary requests 1 to 9

2.1 The board agrees with the examining division's objection under Article 123(2) EPC to auxiliary requests 1 to 9. Namely, there is no basis in the application as filed for the amendment which reads "wherein the first set is obtained from a first bus and each different set is obtained from a different bus".

The appellant argued that page 9, lines 15 to 17 and page 13, lines 20 to 23 and 30 to 33 of the description as filed provided basis for this amendment.

Page 9, lines 15 to 17 reads: "*The automated transit route derivation system 302 interacts via the network 14 via a communications interface 308 with (1) mobile terminals 330, (2) localization device equipped bus(es) 332 and/or (3) local transit system servers 334.*" This passage refers to some unspecified "interaction" of the automated transit route derivation system with, *inter alia,* buses. It does not specify what data is obtained from which bus.

Page 13, lines 20 to 23 reads: "*Furthermore, two data collection strategies may be used (1) Participatory sensing (PS) – Humans submit GPS or other sensor reports via check-in and/or (2) a kind of opportunistic sensing (OS) whereby the GPS device is on a bus and submits GPS reports periodically. Here, a GPS trace* t_1 *is formed.*" First, this passage is about obtaining a kind of location data, namely GPS traces from GPS devices. It cannot be combined with the general teaching of receiving unspecified location data in claim 1. Second, it says neither that the humans submitting GPS reports are each on different buses, nor that there is more than one bus in so-called opportunistic sensing (see "*the GPS device is on a bus [emphasis by the board]*").

The appellant also referred to page 13, lines 30 to 33, which reads: "*Thus, for all GPS points* p_1, p_2, p_3 ... p_z *on* t_1, *the present invention may form a cluster with the GPS points on the traces in* t_{set} *(set of traces for that route and pattern) that have GPS points within a*

predetermined distance (e.g., 40m)." It argued that it was not plausible to suggest that an individual bus would be 40 m in length. Therefore, each trace must be from a different bus. As stated above for the other passage cited from page 13, these passages are on an embodiment obtaining GPS traces and cannot be a basis for amendments to claim 1. Furthermore, it cannot be directly and unambiguously derived from an example threshold distance given for clustering that the received data has certain properties, let alone those in the disputed feature.

2.2 Therefore, claim 1 of auxiliary requests 1 to 9 was amended in such a way that it contains subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC).

3. Auxiliary request 10

3.1 This request was filed in reply to the board's preliminary opinion. As it was filed after notification of the summons to oral proceedings, in accordance with Article 13(2) RPBA, it must not be taken into account unless there are exceptional circumstances justified with cogent reasons by the appellant.

3.2 The appellant argued that the new objection under Article 123(2) EPC raised in the board's preliminary opinion was an exceptional circumstance justifying the filing of auxiliary request 10. In claim 1 of auxiliary request 10, the amendments that the board had objected to were deleted.

However, the amendments made to claim 1 of auxiliary request 10 go beyond this deletion. The appellant added new features from the description such as "*wherein the*

location data is a plurality of GPS traces obtained from a GPS device on a bus, wherein the plurality of GPS traces are received as seed data" and "*following an incident*". The appellant argued that these were consequential amendments which had to be made as a result of the board's new objection. In view of the principles of procedural economy and *prima facie* allowability, it further addressed outstanding novelty and inventive-step objections.

However, a new objection raised for the first time by the board cannot be used as a pretext to reopen examination by piggybacking more amendments than necessary to address the objection. In the case at hand, the deletion of the objected to feature from claim 1 of the main request would have been sufficient to address the board's new objection. Furthermore, auxiliary request 10 was drafted based on auxiliary request 9, against which the board had not raised any new objections. While it could be argued that the board's new objection to the main request would have also been valid for auxiliary request 9, there are no cogent reasons for adding new features from the description to claim 1.

3.3 Therefore, the board did not admit auxiliary request 10 into the appeal proceedings (Article 13(2) RPBA).

4. As there is no allowable request, the appeal has to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated