# UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* THOMAS BRUCE WATSON ADAM,
IAN MALCOLM ATKINSON, and
MICHAEL JOSEPH DIXON

_____

Appeal 2018-005906
Application 14/136,446
Technology Center 3600

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Before JILL D. HILL, LEE L. STEPINA, and
ARTHUR M. PESLAK, *Administrative Patent Judges.*

STEPINA, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the
Examiner's decision to reject claims 57–63, 66–70, 72, 74–76, and 79–83.
*See* Final Act. 1.  We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R.
§ 1.42.  Appellant identifies the real party in interest as TomTom
International, B.V.  Br. 1.

CLAIMED SUBJECT MATTER

Appellant's invention relates to a method of planning a route to a destination. Claim 57, reproduced below, is illustrative of the claimed subject matter:

57.   A routing system, comprising a processor and memory storing a map database that defines roads in terms of route segments, the map database including:

a fixed, predefined time-independent cost associated with each different route segment in the map database; and

a historical time-dependent cost, for each of a plurality of time windows, associated with at least some of the route segments in the map database, the cost relating to an average vehicle speed or transit time along the route segment measured or inferred from historical vehicle traffic flow or movement obtained by a traffic monitoring system,

the routing system being programmed with software comprising a routing algorithm that plans a route from a source to a destination at a specific time using one or more route segments and that calculates an estimated cost of reaching the destination, and

the routing system being arranged to receive updated time-dependent costs for one or more route segments in a mutable area for at least one of a current and future time based on an identification of currently congested route segments by the traffic monitoring system, the mutable area indicating a geographical area of interest including the source and the destination of the route,

wherein the estimated cost of reaching the destination is automatically calculated using:

the time-dependent cost for a route segment if available, the time-dependent cost being:

an updated cost, when the updated cost for the route segment at the specific time has been received; and

the historical cost for a corresponding time window, when the updated cost for the route segment at the specific time has not been received; or

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the fixed, predefined time-independent cost for the route segment if a time-dependent cost for the route segment is not available in the map database.

## REFERENCE

The prior art relied upon by the Examiner is:

| Name | Reference | Date |
|------|-----------|------|
| Gelhar | US 2005/0107950 A1 | May 19, 2005 |

## REJECTION

Claims 57–63, 66–70, 72, 74–76, and 79–83 are rejected under 35 U.S.C. § 102(b) as being anticipated by Gelhar.

## OPINION

Each of independent claims 57, 66, and 72 recites, in part, "a fixed, predefined time-independent cost associated with each different route segment in the map database." In rejecting the claims as anticipated by Gelhar, the Examiner cites to, *inter alia*, paragraph 20 of Gelhar, which discloses "[d]igital map data may include map data representing a region that is divided into a plurality of zones. A cost value may be assigned to each zone based on predetermined cost criterion." Final Act. 3.

Appellant argues that Gelhar's zones are not equivalent to the claimed road segments. Br. 11. Specifically, according to Appellant, "Gelhar's 'costs' are simply those associated with traversing the zone in a given direction (and are not equivalent to costs associated with road segments)." *Id.* Appellant contends that, because Gelhar describes zones in a region and determines sequences of zones based on the cost to travel through the zones, Gelhar does not describe costs associated with road segments in a map

database or operations based on the costs, as in the independent claims.  *Id.*
at 13.

In response, the Examiner asserts that Appellant does not explain
sufficiently how the claimed route segments distinguish over Gelhar's zones.
Ans. 3.  In particular, the Examiner notes that Appellant does not identify a
definition of "route segment" in the Specification, and does not offer a
definition consistent with how one of ordinary skill in the art would define
this term.  *Id.*  The Examiner states that although the Specification discloses
examples in which segments are defined between towns, the Examiner
declines to import non-limiting embodiments into the claim language.  Ans.
5.  According to the Examiner, the rejection is proper because "the claim
language does not require or exclude any particular process for defining
roads 'in terms of route segments' and the claim language does not require
or exclude any particular level of detail for defining roads 'in terms of route
segments.'"  Ans. 6.  The Examiner notes, moreover, that because the claims
recite "route segments" rather than "road segments," "Appellant's assertion
regarding 'road segments' is not relevant to the rejection of any claim."
Ans. 11.

Appellant has the better position.  The Specification interchangeably
uses various terms to refer to a section or segment of the road, wherein "the
road network is segmented into short, discrete segments."  Spec. ¶ 69.
Specifically "a section of road" (Spec. ¶ 8), "the road section" (Spec. ¶¶ 8,
93), "a section of route" (Spec. ¶ 56), "route section" (Spec. ¶ 58), "route
segment" (Spec. ¶¶ 8, 11–20, 95), "road segments" (Spec. ¶¶ 46, 66, 70),
"segments of roads" (Spec. ¶ 50).  More specifically, compare, for example,
"the cost for normal road routing is the transit time for the *road section* at

the fixed limit speed attached to the *road section*" with "we use fixed, pre-defined *route segment* costs (e.g. the legal speed limit) for some *route segments*." Spec. ¶¶ 93, 95. Despite the Specification's use of the differing terms "road segment" and "route segment, the Specification does not use the term "route segments" to identify anything other than segments of a road. Thus, the broadest reasonable interpretation consistent with the Specification of the term "route segment" is "road segment," which is a segment or section of a road.

Gelhar discloses that "determining a route between two points" includes determining a sequence of zones connecting the two points, so that the "method may yield a 'route' of the zones between two points that may be used, for example with car navigation, to determining the actual road route between the points." Gelhar ¶ 41. For the reasons discussed below, we agree with Appellant that Gelhar's "zone" is not a segment of a road.

First, Gelhar distinguishes a road or route segment from a zone, pointing out that determining a route based on roads is good on "a relatively small scale or 'local' level," but requires "processing large amounts of data" and is "costly and time consuming" for longer routes. *See* Gelhar ¶ 9. Specifically Gelhar discloses:

> By dividing a region into a plurality of zones and determining a cost value for each zone, a first processing of a digital map may be obtained that simplifies further processing. For example, the determination of long distance routes on the local level (e.g., on the level of the roads) may be very time consuming. Dividing a region into zones and assigning the zones a cost value provides an intermediate level and corresponding preprocessing of the data.

Gelhar ¶ 32.

Second, Gelhar's zone may contain more than one road as seen in Figure 1, reproduced below.



FIG. 1
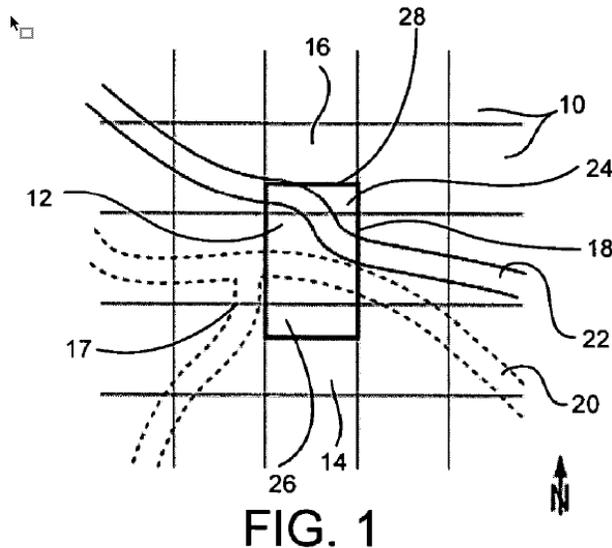
Gelhar's Figure 1 illustrates tiling a region. Gelhar ¶ 13.

In Gelhar, a "region may be tiled in which there are no gaps and the zones (or tiles) overlap only at their edges to provide a grid of zones." Gelhar ¶ 9. In Gelhar's Figure 1, center "zone 12 is adjacent to eight other zones with zone 14 directly to the south and zone 16 directly to the north of zone 12." *Id.* ¶ 28. Gelhar discloses that in Figure 1, "a small road 20 passes through zone 12 from left edge 17 to right edge 18. Highway 22 also crosses zone 12, but only from the top of zone also from left to right." *Id.* ¶ 29. Gelhar discloses that "for purposes of determining cost value, zone 12 is extended to include part 24 of adjacent zone 16, and part 26 of adjacent zone 14 (as shown by the darker bordered box 28). Thus, highway 22 may be included in the cost value determination of zone 12." *Id.* "The cost value of zone 12 may be determined based on the 'travel time,' the time it takes to travel through zone 12," based on both road 20 and road 22. *Id.* ¶ 30.

Although we appreciate that the ultimate route determined in Gelhar is between two points, Gelhar discloses that "after determining an optimal sequence (of zones), a corresponding route, for example on the level of roads, may be determined to provide a user with navigation information." *Id.* ¶ 52. Thus, Gelhar determines the cost of a zone and then uses that information to determine which roads should be traveled within that zone, but does not rely on costs "associated with each different route segment" in a map database, as required by the independent claims. We do not sustain the rejection of claims 57–63, 66–70, 72, 74–76, and 79–83 as anticipated by Gelhar.

## DECISION SUMMARY

| Claims Rejected | 35 U.S.C. § | Reference(s)/Basis | Affirmed | Reversed |
|---|---|---|---|---|
| 57–63, 66–70, 72, 74–76, 79–83 | 102(b) | Gelhar | | 57–63, 66–70, 72, 74–76, 79–83 |
| **Overall Outcome:** | | | | 57–63, 66–70, 72, 74–76, 79–83 |

<u>REVERSED</u>