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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* TIEN VU and SHINOBU DOI

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Appeal 2016-001021<sup>1</sup>  
Application 12/380,180<sup>2</sup>  
Technology Center 3600

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Before NINA L. MEDLOCK, CYNTHIA L. MURPHY and  
TARA L. HUTCHINGS, *Administrative Patent Judges*.

MEDLOCK, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> Our decision references Appellants’ Appeal Brief (“App. Br.,” filed June 9, 2014) and Reply Br. (“Reply Br.,” filed November 26, 2014), and the Examiner’s Answer (“Ans.,” mailed September 10, 2014) and Final Office Action (“Final Act.,” mailed November 27, 2013).

<sup>2</sup> Appellants identify Alpine Electronics, Inc. as the real party in interest. App. Br. 1.

## CLAIMED INVENTION

Appellants' claimed invention "relates generally to a method and apparatus for detecting and correcting a route for a navigation system, and more particularly, to a method and apparatus for detecting a freeway-ramp-freeway situation in a calculated route to a destination and correcting the calculated route by replacing the freeway-ramp-freeway situation with all-freeway segments" (Spec. 1, ll. 6–12).

Claims 1 and 11 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computer-implemented method of correcting a particular situation in a calculated route between a start point to a destination for a navigation system, comprising, by using a processor which executes a program stored in a memory, the following steps of:

establishing the calculated route between the start point and the destination where the calculated route includes a freeway;

examining the calculated route from one end to another end (forward direction) to detect whether there is a first point where the calculated route exits a freeway;

further examining the calculated route in the forward direction in order to detect whether there is a second point where the calculated route enters a freeway by shifting for a limited distance to find whether there is a ramp to-freeway transition;

evaluating map data associated with the calculated route to determine whether the freeway exited at the first point and the freeway entered at the second point are the same freeway;

determining that a freeway-ramp freeway situation exists in the calculated route when the freeway exited and the freeway entered are the same where the freeway-ramp-freeway situation is defined as a situation where the calculated route exits a freeway and immediately enters the same freeway;

retrieving one or more freeway segments between the first point and the second point by searching all-freeway segments; and

replacing road segments of the calculated route between the first point and the second point constituting the freeway-ramp-freeway situation with the retrieved freeway segments between the first point and the second point, thereby changing the freeway-ramp-freeway situation to an all-freeway situation and creating a new route.

### REJECTIONS

Claims 1–20 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

Claims 1–3, 6–13, and 16–20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Nesbitt (US 2004/0176907 A1, pub. Sept. 9, 2004), Beesley et al. (US 2005/0090976 A1, pub. Apr. 28, 2005) (hereinafter “Beesley”) and Yoshikawa et al. (US 2006/0004511 A1, pub. Jan. 5, 2006) (hereinafter “Yoshikawa”).

Claims 4, 5, 14, and 15 are rejected under 35 U.S.C. § 103(a) as unpatentable over Nesbitt, Beesley, Yoshikawa, and Nomura (US 2005/0203937 A1, pub. Sept. 15, 2005).

### ANALYSIS

#### *Non-Statutory Subject Matter*

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *See, e.g., Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289, 1300 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice Corp.*, 134 S. Ct. at 2355. The first step in that analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If the claims are not directed to a patent-ineligible concept, e.g., an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1297).

The Court acknowledged in *Mayo*, that “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 132 S. Ct. at 1293. We, therefore, look to whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016).

Here, in rejecting the claims under 35 U.S.C. § 101, the Examiner finds that claim 1 is directed to “evaluating map data in calculated routes to discover an undesired shortcut,” i.e., to a method of organizing human activity (evaluating a map and providing recalculated routes which replace freeway-ramp-freeway situations with all-freeway sections) and, therefore, to an abstract idea; and that the claim does not include elements or a

combination of elements that amounts to more than the abstract idea itself because “the claim does not affect [sic] an improvement to another technology or technical field; the claim does not amount to an improvement to the functioning of a computer itself; and the claim does not move beyond a general link of the use of an abstract idea to a particular technological environment” (Ans. 2–5). The Examiner rejects claims 2–20 on the same bases (*id.* at 5 (“Claims 2–20 fail to remedy these deficiencies, thus claims 2–20 are considered to be directed to non-statutory subject matter”)).

Addressing the first step of the *Mayo/Alice* framework, Appellants charge that the Examiner, in finding that the claims are directed to an abstract idea, disregards that the claimed invention is directed to a method and apparatus that performs route guidance between a start point and a destination through a calculated route, i.e., “a route on actual and physical routes connecting the start point and the destination” (Reply Br. 3). Appellants assert that “[a]lthough a calculated route is established by evaluating the map data, . . . such a calculated route and map data are directed to actual roads, buildings and constructions, topological structures, etc., i.e., real world products” (*id.*). Appellants maintain that the claims are directed to “the process of determining the route between the start point and the destination by incorporating the physical distances, locations, structural connections of the road including the freeway, the entrance and exit to the freeway and their unique combination” and, therefore, not directed to an abstract idea (*id.* at 3–4). Yet it is clear from the Specification, including the preamble of the claims, that claims are directed to correcting a particular situation (namely, a freeway-ramp-freeway situation) in a calculated route between a start point and destination, i.e., directed to “evaluating map data

in calculated routes to discover an undesired shortcut,” as the Examiner concludes (*see, e.g.*, Spec. 2–3 (describing that an object of the invention is to detect and, if necessary, correct a freeway-ramp-freeway situation in a calculated route)).

Although claim 1, for example, refers to freeways and freeway ramps, these elements have no material involvement in the claimed method beyond merely constituting the physical environment on which the calculated route and the map data are based. The claimed method does not alter or otherwise affect in any way the physical structure or location of the freeways and freeway ramps and/or the structural relationships between them.

Turning to the second step of the *Mayo/Alice* framework, Appellants argue that even if the claims are directed to an abstract idea, the claims are nonetheless patent-eligible because the claimed subject matter represents a “practical application having a real world use” (Reply Br. 4; *see also id.* at 5). Yet limiting the use of the abstract idea to a particular technological environment does not make the claims any less abstract. *See Alice Corp.*, 134 S. Ct. at 2358. Nor is the recitation of a practical application for an abstract idea sufficient to transform the abstract idea into a patent-eligible invention. *Cf. CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (“The Court [in *Parker v. Flook*, 437 U.S. 584 (1978)] rejected the notion that the recitation of a practical application for the calculation could alone make the invention patentable.”).

Focusing specifically on method claims 1–10, and ostensibly relying on the *Bilski* machine-or-transformation test, Appellants next argue that claims 1–10 are patent-eligible because the claimed process is “clearly tied to a particular machine or apparatus” (Reply Br. 4 (“independent Claim 1

clearly defines that the method steps are executed by a processor, i.e., a particular machine or apparatus”). In fact, the method claims are not tied to any particular machine or apparatus at all; the claims merely recite a processor, and we find no indication in the Specification that the claimed processor is other than a general purpose computer.<sup>3</sup>

Ostensibly alluding to *In re Alappat*, 33 F.3d 1526, 1543 (Fed. Cir. 1994), Appellants assert that “a general purpose computer may be sufficiently ‘particular’ when programmed to perform the process steps” because the general purpose computer becomes “a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software” (Reply Br. 5). However, the Federal Circuit, in *Eon Corp. v. AT&T Mobility LLC*, 785 F.3d 616, 623 (Fed. Cir. 2015), explicitly noted that “*Alappat* has been superseded by *Bilski*, 561 U.S. at 605–06, 130 S. Ct. 3218, and *Alice Corp. v. CLS Bank Int’l*, — U.S. —, 134 S. Ct. 2347, 189 L.Ed.2d 296 (2014).” And it is clear from the Supreme Court decision in *Alice* that merely implementing an abstract idea on a general purpose computer does not make an otherwise ineligible claim patent-eligible.

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<sup>3</sup> Although the Supreme Court noted in *Bilski v. Kappos*, 130 S. Ct. 3218 (2010) that the machine-or-transformation test is a “useful and important clue” for determining patent eligibility, *id.* at 3227, the Court, in *Mayo* emphasized that satisfying the machine-or-transformation test, by itself, is not sufficient to render a claim patent-eligible, as not all transformations or machine implementations infuse an otherwise ineligible claim with an “inventive concept.” See *Mayo*, 132 S. Ct. at 1301 (“[S]imply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle.”) (describing *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972)).



Finally, we are not persuaded of Examiner error by Appellants' argument that the claims are patent-eligible because "the claimed invention makes an improvement on a specific routing process" and, thus, "makes improvements to another technology or technical fields" (Reply Br. 6). Rather than constituting an improvement in technology, the allegedly improved routing process (i.e., evaluating map data in calculated routes to detect and correct an undesired freeway-ramp-freeway route) is, in fact, itself the abstract idea.

We are not persuaded for the reasons set forth above that the Examiner erred in rejecting claims 1–20 under 35 U.S.C. § 101. Therefore, we sustain the Examiner's rejection.

#### *Obviousness*

*Independent Claims 1 and 11 and Dependent Claims 2, 3, 6–10, 12, 13, and 16–20*

Appellants argue claims 1–3, 6–13, and 16–20 as a group (App. Br. 7–12). We select independent claim 1 as representative. The remaining claims stand or fall with claim 1. *See* 37 C.F.R. §41.37(c)(1)(iv).

We are not persuaded by Appellants' argument that the Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 103(a) because none of Nesbitt, Beesley, and Yoshikawa discloses or suggests "examining the calculated route in the forward direction in order to detect whether there is a second point where the calculated route enters a freeway by shifting for a limited distance to find whether there is a ramp-to-freeway transition [i.e., a situation where the calculated route exits a freeway and immediately enters the same freeway]," as recited in claim 1 (App. Br. 7–10).

In rejecting claim 1 under § 103(a), the Examiner acknowledges that Nesbitt fails to specifically teach the argued limitation (Final Act. 9). And the Examiner cites Beesley to cure the deficiency of Nesbitt (*id.* at 9–10 (citing Beesley ¶¶ 14 and 68–77 and Fig. 8)).

Beesley is directed to a method and apparatus for estimating an impedance (measured in time or distance) through a node at an intersection between roads in a roadway network (Beesley, Abstract), and discloses in paragraph 14, cited by the Examiner, that in one embodiment, a navigation system comprises (1) a storage unit that stores data, including road-type information that classifies roads into a hierarchy of route levels; (2) a route calculation module; and (3) a correction module. Beesley discloses that the route calculation module calculates a planned route between source and destination locations over the network based on the stored data, and that the correction module identifies undesirable shortcuts using the road-type information (Beesley ¶ 14).

Figure 8 of Beesley shows a method for applying additional impedance values through a node to discourage a route from being planned through certain portions of the roadway network (*id.* ¶ 44). Referring to Figure 8, Beesley discloses that when choosing the shortest distance route between two points, it is possible that the shortest distance route will include undesirable shortcuts (*id.* ¶ 68). Beesley, thus, describes that if a route were planned between point D and point E in Figure 5, it would not be advantageous to exit and immediately re-enter an interstate highway; the incremental impedance factor for taking the exit ramp (road 204 in Figure 5) would, thus, be increased to prevent the processor from directing the driver off the interstate highway (road 202) at node 216 and back onto the same

interstate via entry ramp (road 206), even if the combined distance of the entry ramp and the exit ramp is less than the distance traveled by remaining on the interstate (*id.* ¶ 73).

Addressing Appellants' arguments in the Answer, the Examiner references Beesely's disclosure that the shortest distance route between two points may include an undesirable shortcut, and the Examiner takes the position that under a broadest reasonable interpretation, examining a route between two points to identify undesired shortcuts, as disclosed in Beesley, teaches "shifting for a limited distance to find whether there is a ramp-to-freeway transition," as recited in claim 1 (Ans. 6). Responding in the Reply Brief, Appellants summarily assert that "[r]ather than examining routes between points, the present method starts from the first point and shifts for a limited distance, which allows to [sic] reduce searching distance and processing load" (Reply Br. 8). However, we fail to see why, and Appellants do not adequately explain why, the Examiner's position is unreasonable or unsupported.

Appellants note in their Appeal Brief that the Specification provides "an exemplary distance of 0.5 miles to 1.5 miles for the limited distance" (App. Br. 8). And Appellants ostensibly take the position that the "limited distance" must be a "predetermined distance" (*see, e.g., id.* at 4, 8; *see also* Ans. 5).<sup>4</sup> But we find nothing in the claim language that requires the "limited distance" to be "predetermined" and, therefore, nothing to support such an interpretation.

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<sup>4</sup> The Specification, at page 20, states, "The predetermined distance D1 for searching the next freeway segment F3 may be set arbitrary, for example, between 0.5 miles to 1.5 miles."

We also are not persuaded of Examiner error by Appellants' further argument that Yoshikawa, on which the Examiner relies, does not disclose or suggest "retrieving one or more freeway segments between the first point and the second point by searching all-freeway segments," as recited in claim 1 (App. Br. 11). Appellants argue that in Yoshikawa, a pathfinding algorithm involving cost calculation is used, and that the route search considers both freeway segments and non-freeway segments (*id.* at 11). According to Appellants, Yoshikawa, thus, "searches both the non-freeway segment[s] and the freeway segments using the cost calculation to find suitable routes" whereas "the navigation system of the present invention retrieves all of the freeway segments. . . without employing cost calculation" (*id.*; *see also* Reply Br. 9).

Appellants' argument is not persuasive at least because there is nothing in the claim language that precludes the use of cost calculation in retrieving the freeway segments. Instead, claim 1 merely recites "retrieving one or more freeway segments between the first point and the second point by searching all-freeway segments."

Moreover, Yoshikawa teaches searching for a recommended route (and one or more alternative routes) based on the received current position, the destination, and/or a search condition (*see* Yoshikawa ¶ 59), and expressly discloses that the search condition can be set so that the server preferably searches highways (*id.* ¶ 59). Yoshikawa discloses that, if the information distribution server distributes predicted traffic congestion information, a next step of the route selection may include consideration of traffic congestion, i.e., a cost calculation. However, as the Examiner observes, "given the right conditions of cost calculations where it would be

more costly to take a residential road than a freeway, Yoshikawa would select a freeway segment” (Ans. 8). Also, in some circumstances, a route may be selected for which the information distribution server did not distribute predicted congestion information and, in that event, no cost calculations are employed (*id.* (citing Yoshikawa ¶ 66)).

In view of the foregoing, we sustain the Examiner’s rejection of claim 1 under 35 U.S.C. § 103(a). We also sustain the rejection of claims 2, 3, 6–10, 12, 13, and 16–20, which fall with claim 1.

*Dependent Claims 4, 5, 14, and 15*

Appellants do not provide any argument in support of the patentability of claims 4, 5, 14, and 15 except to assert that Nomura fails to cure the alleged deficiencies of Nesbitt, Beesley, and Yoshikawa, and that these claims are allowable based on their dependence from independent claims 1 and 11 (App. Br. 12). We are not persuaded for the reasons outlined above that the Examiner erred in rejecting claims 1 and 11. Therefore, we sustain the Examiner’s rejection under 35 U.S.C. § 103(a) of dependent claims 4, 5, 14, and 15.

DECISION

The Examiner’s rejection of claims 1–20 under 35 U.S.C. § 101 is affirmed.

The Examiner’s rejections of claims 1–20 under 35 U.S.C. § 103(a) are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED