



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
14/333.609 07/17/2014 Damian F. Brennan GB920110138US2 6110

30449 7590 08/01/2018
SCHMEISER, OLSEN & WATTS
22 CENTURY HILL DRIVE
SUITE 302
LATHAM, NY 12110

Table with 1 column: EXAMINER

ANTONUCCI, ANNE MARIE

Table with 2 columns: ART UNIT, PAPER NUMBER

3667

Table with 2 columns: NOTIFICATION DATE, DELIVERY MODE

08/01/2018

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

30449@IPLAWUSA.COM

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* DAMIAN F. BRENNAN, NICHOLA JANE INGLIS HICKMAN,  
DAVID POLLINGTON, and KEVIN T. SCARR

---

Appeal 2017-006086  
Application 14/333,609<sup>1</sup>  
Technology Center 3600

---

Before EDWARD A. BROWN, JAMES P. CALVE, and  
ANTHONY KNIGHT, *Administrative Patent Judges*.

BROWN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Damian F. Brennan et al. (“Appellants”) seek review under 35 U.S.C. § 134(a) of the Examiner’s decision, as set forth in the Final Office Action dated April 29, 2016 (“Final Act.”), rejecting claims 1–4, 6–15, and 17–20.<sup>2</sup>

We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

<sup>1</sup> International Business Machines Corporation and Vodafone IP Licensing Limited (“Appellants”) are the applicants, as provided by 37 C.F.R. § 1.46, and are identified as the real parties in interest. Appeal Br. 1.

<sup>2</sup> Claims 5 and 16 have been cancelled. *Id.*

### CLAIMED SUBJECT MATTER

Appellants' disclosure relates to "the field of mobile networks. In particular, the invention relates to a method, apparatus and a computer program for determining a common origin, a common destination and a common route from a network data record generated from network activity of a mobile device." Spec. 1.<sup>3</sup>

Claims 1, 12, and 17 are independent. Claim 1, reproduced below, illustrates the claimed subject matter:

1. A method for determining a traveled route of a mobile device in a mobile network, said method comprising:
  - determining, by a processor of a computer system, a series of consecutive movements of the mobile device along a path of locations from an origin location of the path at an earliest activity of a plurality of activities of the mobile device to a destination location of the path at a latest activity of the plurality of activities;
  - said processor accessing from storage a historical set of routes of the mobile device;
  - said processor ascertaining at least one common route from the historical set of routes, wherein the locations in each common route include all of the locations on the path;
  - said processor designating a common route of the at least one common route as the traveled route of the mobile device with respect to the series of consecutive movements of the mobile device along the path;
  - said processor communicating, to a traffic planning system, the designated common route and other common routes relating to all network activity records generated by a user of the mobile device accessing the mobile network, which provides the traffic planning system with a real-time view of traffic density along journey paths in a transport infrastructure thus enabling the traffic planning system to make informed decisions about traffic

---

<sup>3</sup> We refer herein to the Substitute Specification filed on April 10, 2015, as the "Specification" or "Spec."

planning comprising traffic alerts, redirecting traffic, closing roads, and opening new roads along new routes;

said processor computing a ratio of (i) a sum of a coverage area of a start cell in which one activity of the mobile device was initiated and a coverage area of an end cell in which the one activity of the mobile device was terminated to (ii) a distance between a centroid of the start cell and a centroid of the end cell such that the distance has a positive value; and

said processor determining a confidence value as a function of the computed ratio.

Appeal Br. 18–19 (Claims App.).

### REJECTION

Claims 1–4, 6–15, and 17–20 are rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter.

### ANALYSIS

*Rejection of claims 1–4, 6–15, and 17–20 under 35 U.S.C. § 101*

*Claim 1*<sup>4</sup>

In rejecting claim 1, the Examiner applies the two-step framework “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts,” as set forth in *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). This framework considers, in the first step, whether the claims at issue are “directed to” one of those ineligible concepts. *Id.* If the claims are not, they satisfy § 101. *Id.* If the claims are, the second step is to “consider the elements of each claim both individually and ‘as an ordered

---

<sup>4</sup> Appellants argue claims 1–4, 6–15, and 17–20 as a group. Appeal Br. 8–16. We select claim 1 as representative of the group. Claims 2–4, 6–15, and 17–20 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, [566 U.S. 66, 79] (2012)). The Supreme Court characterizes the second step as “a search for an ‘inventive concept’ — *i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (quoting *Mayo*, 566 U.S. at 72–73).

As to step 1 of *Alice*, the Examiner determines that the claims are directed to an abstract idea. Final Act. 8. Particularly, the Examiner determines that claim 1 is representative and is directed to comparing new and stored information and using rules to identify options. *Id.* The Examiner determines that this information is used to make decisions about one activity (e.g., the current path) by retrieving stored data (a historical set of routes), analyzing options (i.e., ascertaining a common route including each location of the current path from the historical set of routes), and making a decision (e.g., designating the common route). *Id.* at 8–9.

As to *Alice* step 2, the Examiner determines that the additional claim elements other than the abstract idea amount to no more than “mere instructions to implement the idea of decision support using a computer, and merely use a generic computer to perform generic computer functions.” *Id.* at 9. The Examiner determines that the additional claim elements do not provide meaningful limitations to transform the abstract idea into a patent eligible application thereof such that the claim amounts to significantly more than the abstract idea itself. *Id.* Additionally, the Examiner determines that the claims do not recite an improvement to another technology or technical

field or to the functioning of the computer itself, or provide meaningful limitations beyond generally linking an abstract idea to a particular technological environment. *Id.*

*Alice Step 1*

Appellants contend that claim 1, as a whole, is directed to “determining a traveled route of a mobile device in a mobile network.” Appeal Br. 11. This corresponds to the claim preamble. *See id.* at 18 (Claims App.). Appellants contend that the Examiner’s position is incompatible with *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), because the Examiner’s position “focus[es] on what the claim[] allegedly involve[s] ([i.e.,] allegedly comparing new and stored information and using rules to identify options) instead of what the claim as a whole is directed to (i.e., determining a traveled route of a mobile device in a mobile network).” *Id.* at 11–12. Appellants submit that even if claim 1 involves comparing new and stored information and using rules to identify options, claim 1 is not directed to this. Reply Br. 3–4. Appellants further assert that the Examiner has not cited any case law to support the position that “comparing new and stored information and using rules to identify options is, in general, [an] abstract idea.” Appeal Br. 12. Appellants further contend that “determining a traveled route of a mobile device in a mobile network” is not one of the categories of abstract ideas identified in *Alice*. *Id.* at 13.

The Examiner submits that, in contrast to *Enfish*, the claims are directed to subject matter within the normal, expected manner in which a computer or a computer network would operate. Ans. 6. The Examiner determines that the claim is not “directed to anything more than data stored and manipulated/calculated for communication/transmission, by a processor,

in a database on a generic computer,” and the basic steps of claim 1 are “receiving/retrieving information (about a series of consecutive movements of a device along a path),” “retrieving stored data (historical set of routes),” “analyzing options (i.e., ascertaining common route(s) based on the locations along the path),” and “making a decision (e.g., designating a common route as the traveled route and determining a confidence value).” *Id.* at 8.

To the extent it is Appellants’ position that *Alice* must specifically identify “determining a traveled route of a mobile device in a mobile network” as a category of abstract ideas, Appellants cite no authority supporting this position. *See* Appeal Br. 13. Moreover, we disagree that the subject matter of claim 1 does not fall into one of the categories of abstract ideas identified in *Alice*. That is, as recognized by Appellants, one of the categories identified in *Alice* is “methods of organizing human activities.” *Id.* at 13.

Claim 1 relates to traffic planning. The recited steps of the method relate to routine data manipulation concepts, which have been identified in prior cases as abstract ideas. For example, abstract ideas include the concepts of collecting data, recognizing certain data within the collected data set, and storing the data in memory. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (“The concept of data collection, recognition, and storage is undisputedly well-known.”). In *Content Extraction*, the court determined that this concept has been performed by humans, and was unpersuaded by the argument that the “claims are not drawn to an abstract idea because human minds are unable to process and recognize the stream of bits output by a scanner.” *Id.* *See also*,

*Versata Dev. Group v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015) (“Courts have examined claims that required the use of a computer and still found that the underlying, patent-ineligible invention could be performed via pen and paper or in a person’s mind.”); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (“[A]nalyzing information by steps people [can] go through in their minds, or by mathematical algorithms, without more [are] essentially mental processes within the abstract-idea category.”). Additionally, collecting information, analyzing information (e.g., recognizing certain data within a dataset), and presenting the results of collecting and analyzing information are also abstract ideas. *Elec. Power*, 830 F.3d at 1353–54. Similarly, “collecting, displaying, and manipulating data” is an abstract idea. *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017).

Organizing information using mathematical correlations has also been identified as an abstract idea. *Digitech Image Techs., LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1349 (Fed. Cir. 2014).

Claim 1 recites the step of

[a] determining, by a processor of a computer system, a series of consecutive movements of the mobile device along a path of locations from an origin location of the path at an earliest activity of a plurality of activities of the mobile device to a destination location of the path at a latest activity of the plurality of activities.

Appeal Br. 18 (Claims App.). As such, step “a” relates, for example, to the concept of gathering/collecting information and analyzing information. *See Content Extraction*, 776 F.3d at 1347; *Elec. Power*, 830 F.3d at 1353.

Claim 1 next recites the step of “[b] said processor assessing from storage a historical set of routes of the mobile device.” Appeal Br. 18 (Claims App.). Step “b” relates, for example, to the concepts of data storage and analyzing data within a stored data base. *See Content Extraction*, 776 F.3d at 1347; *Elec. Power*, 830 F.3d at 1353.

Claim 1 next recites the step of “[c] said processor ascertaining at least one common route from the historical set of routes, wherein the locations in each common route include all of the locations on the path.” Appeal Br. 18 (Claims App.). This step relates, for example, to the concept of recognizing certain data within a stored data base. *See Content Extraction*, 776 F.3d at 1347; *Elec. Power*, 830 F.3d at 1353.

Claim 1 next recites the step of “[d] said processor designating a common route of the at least one common route as the traveled route of the mobile device with respect to the series of consecutive movements of the mobile device along the path.” Appeal Br. 19 (Claims App.). This step relates, for example, to the concepts of analyzing information, including manipulating data (*see Intellectual Ventures ILLC*, 850 F.3d at 1340) and organizing information using mathematical correlations (*see Digitech Image Techs.*, 758 F.3d at 1349).

Claim 1 next recites the step of

[e] said processor communicating, to a traffic planning system, the designated common route and other common routes relating to all network activity records generated by a user of the mobile device accessing the mobile network, which provides the traffic planning system with a real-time view of traffic density along journey paths in a transport infrastructure thus enabling the traffic planning system to make informed decisions about traffic

planning comprising traffic alerts, redirecting traffic, closing roads, and opening new roads along new routes.

Appeal Br. 19 (Claims App). Step “e” relates to the concept of presenting the results of the collecting and analyzing of information. *See Elec. Power*, 830 F.3d at 1353.

Finally, claim 1 recites the steps of

[f] said processor computing a ratio of (i) a sum of a coverage area of a start cell in which one activity of the mobile device was initiated and a coverage area of an end cell in which the one activity of the mobile device was terminated to (ii) a distance between a centroid of the start cell and a centroid of the end cell such that the distance has a positive value; and

[g] said processor determining a confidence value as a function of the computed ratio.

Appeal Br. 19 (Claims App.). Steps “f” and “g” relate to the concepts of analyzing information, including by manipulating data (*see Intellectual Ventures I LLC*, 850 F.3d at 1340) and organizing information using mathematical correlations (*see Digitech Image Techs.*, 758 F.3d at 1349).

Thus, claim 1 relates to various routine data manipulation concepts that have been identified as being directed to abstract ideas. The recited steps relate to “organizing human activity” in the technology of travel along traffic routes. Accordingly, the subject matter of claim 1 falls into one of the categories of abstract ideas identified in *Alice*.

We note that, “[i]n cases involving software innovations, [the *Alice* step 1] inquiry often turns on whether the claims focus on ‘the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an “abstract idea” for which computers are invoked merely as a tool.’” *Finjan, Inc. v. Blue Coat Systems, Inc.*, 879 F.3d 1299, 1303

(Fed. Cir. 2018) (citing *Enfish*, 822 F.3d at 1335–36). Appellants do not show that the claimed steps provide any improvement in the capabilities of the recited processor of a computer system rather than “[the processor being] invoked merely as a tool” to execute the recited steps. *Id.* Accordingly, Appellants do not apprise us of any error in the Examiner’s position as to how *Enfish* is applicable to claim 1. Ans. 6.

Accordingly, we are not persuaded by Appellants’ contentions that the Examiner erred in finding that claim 1 is directed to an abstract idea.

*Alice Step 2*

Regarding *Alice* step 2, it is Appellants’ position that, even assuming the claims are directed to a judicial exception, the claims recite significantly more than the abstract idea, and thus, are patent eligible. Appeal Br. 13. Appellants provide two alternative arguments. *Id.* at 14–16.

Appellants’ first argument is that claim 1 improves the technology of determining a traveled route of a mobile device in a mobile network via the recitation of steps “f” and “g” reproduced above, which, purportedly, are not well-understood, routine, and conventional with respect to determining a traveled route of a mobile device. *Id.* at 14.

The Examiner responds that these steps merely use a processor to compute and determine new information from old different information, and are directed to no more than data stored and manipulated/calculated, by a processor, in a database on a generic computer. Ans. 11.

Appellants’ first argument fails to explain persuasively how steps “f” and “g,” *in particular*, provide an improvement in computer technologies generally, or, in the technology of determining a traveled route of a mobile device in a mobile network, or why the recited features are more than well-

understood, routine, or conventional. Appeal Br. 14. In support, Appellants quote description from the Specification. *Id.* (citing Spec. 7, ll. 1–7). We note, however, that this description does not appear to pertain specifically to the features recited in either step “f” or “g.” And, Appellants do not otherwise explain how this description supports their argument with respect to these claimed steps. Appellants’ argument effectively amounts to stating that the claimed subject matter is an improved abstract idea, which even if true, is insufficient to transform an abstract idea into patent-eligible subject matter. *See Synopsys*, 839 F.3d at 1151 (“But a claim for a *new* abstract idea is still an abstract idea.”).

Appellants’ second argument is that step “e” of claim 1, as reproduced above, improves the technology of traffic planning. Appeal Br. 15. In support, Appellants quote description in the Specification, which is similar to the language of step “e.” *Id.* (citing Spec. 7, ll. 8–16). The Examiner responds that the limitations of step “e” merely use a processor to communicate information to a different system, where the processor is on a generic computer. Ans. 13.

Appellants’ second argument fails to explain persuasively how step “e” improves the technology of traffic planning, or why the recited features are more than well-understood, routine, or conventional. In this regard, step “e” does not recite any limitation regarding the structure of the traffic planning system. In addition, the recitation, “*enabling . . . opening new roads along new routes,*” does not require the traffic planning system to actually take any action following the “communicating” of information from the processor. Claim 1 does not require the traffic planning system to actually make any “informed decisions” after receiving this information.

Appellants also do not explain persuasively how merely communicating the “designated common route,” as well as information relating to “other common routes *relating to all network activity records* generated by a user accessing the mobile network” (Appeal Br. 19 (Claims App. (emphasis added))), actually improves the traffic planning system. Nor do Appellants explain how the “informed decisions” are more than well-understood, routine, or conventional decisions encountered in traffic planning systems.

We note that claim 1 does not limit the number of “the locations on the path” or “the historical set of routes.” In other words, claim 1 does not limit the amount of information to be gathered or analyzed relating to these features. And even if using the recited processor of a computer system rather than using a human mind and “a pen and paper” would allow the recited data manipulation steps of the method to be executed more efficiently, or using more data, for example, we are not persuaded that the use of such generic processing tools transforms claim 1 into patent-eligible subject matter. Even assuming the claimed subject matter provides an improved abstract idea as a result of using a generic processor, this is insufficient to transform the abstract idea into patent-eligible subject matter.

Accordingly, we sustain the rejection of claim 1. Claims 2–4, 6–15, and 17–20 fall with claim 1.

#### DECISION

We affirm the rejection of claims 1–4, 6–15, and 17–20.

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