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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* MARKUS MUECK, MARTIN HANS,  
MAIK BIENAS, and ANDREAS SCHMIDT

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Appeal 2018-005361<sup>1</sup>  
Application 14/851,710  
Technology Center 2600

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Before ALLEN R. MACDONALD, JEREMY J. CURCURI, and  
JAMES B. ARPIN, *Administrative Patent Judges*.

ARPIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants<sup>2</sup> appeal under 35 U.S.C. § 134(a) from a final rejection of claims 44–62 and 64, all of the claims pending in the application. Final

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<sup>1</sup> In this Decision, we refer to Appellants’ Appeal Brief, filed October 30, 2017 (“Br.”), and Reply Brief, filed April 27, 2018 (“Reply”); the Final Office Action, mailed May 30, 2017 (“Final Act.”); the Examiner’s Answer, mailed February 27, 2018 (“Ans.”); and the Specification, filed September 11, 2015 (“Spec.”). Rather than repeat the Examiner’s findings and determinations and Appellants’ contentions in their entirety, we refer to these documents.

<sup>2</sup> Appellants indicate the real party-in-interest is Apple Inc. Br. 2.

Act. 2. Claims 1–43 and 63 are canceled. *Id.* We have jurisdiction under 35 U.S.C. § 6(b).<sup>3</sup>

We reverse.

#### STATEMENT OF THE CASE

The Specification states that:

The present invention relates generally to the field of wireless communication networks. More particularly, in one exemplary aspect, the present invention is directed to methods and apparatus for operation of a Single Frequency Network (SFN) using signal “shaping” to enable resolving individual signal components, such as for services including location determination.

Spec., 1:16–20; *see id.* at 23:10–24:22, Fig. 3B. Claims 44, 53, and 58 are independent. Br. 24 (claim 44), 25 (claim 53), 26 (claim 58) (Claims App.). Claims 43–52 and 64 depend directly from claim 44, claims 54–57 depend directly from claim 53, and claims 59–62 depend directly from claim 58. *Id.* at 14–27. Claim 44, reproduced below, is illustrative.

44. A non-transitory computer readable apparatus comprising a storage medium storing at least one computer program, the program comprising instructions which, when executed by a processing device, enable location determination within a wireless network, the instructions comprising;  
first instructions adapted to separate a data stream into a unique component and a common component;  
*second instructions adapted to derive from the unique component a parameter related to a physical path; and*

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<sup>3</sup> We do not address the Examiner’s objection to claims 44 and 50 in this decision, as such objections are not proper subject matter for appeal. *See* Final Act. 7–8; Br. 3 n.1.

third instructions adapted to generate an indication of a physical location.

*Id.* at 24 (disputed limitation emphasized).

#### REFERENCES AND REJECTIONS

The Examiner relies upon the following references in rejecting the pending claims:

<b>Name</b>	<b>Publ. No.</b>	<b>Publ. Date</b>	<b>Filing Date</b>
Ogino <sup>4</sup>	US 2002/0004398 A1	Jan. 10, 2002	Feb. 13, 2001
Yang	US 2009/0005084 A1	Jan. 1, 2009	June 28, 2007

Claims 44–62 and 64 stand rejected as unpatentable under 35 U.S.C. § 101 as directed to patent ineligible subject matter.<sup>5</sup> Final Act. 8–9.

Claims 44–51, 53–56, 58–62, and 64 stand rejected as unpatentable under 35 U.S.C. § 102(b) as anticipated by Ogino. *Id.* at 10–14. Claims 52 and 57 stand rejected as unpatentable under 35 U.S.C. § 103(a) as rendered obvious over the combined teachings of Ogino and Yang. *Id.* at 14–15.

We review the appealed rejections for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

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<sup>4</sup> All reference citations are to the first named inventor only.

<sup>5</sup> The Examiner made two separate rejections under 35 U.S.C. § 101, but withdrew the patent eligibility rejection of claims 44–52 and 64, which claims the Examiner incorrectly found to include “a transitory signal” within their scope. Final Act. 8–11; Ans. 2. Appellants incorrectly contend that the Examiner withdrew *both* rejections under 35 U.S.C. § 101. Reply 2.

## ANALYSIS

### *A. Issues*

1. Does the Examiner err in finding that the pending claims are directed to a judicial exception of an abstract idea?
2. Does the Examiner err in finding Ogino discloses each and every element of the independent claims?

We have reviewed the Examiner's rejections in light of Appellants' Appeal and Reply Brief arguments that the Examiner has erred.

### *B. Patent Eligible Subject Matter*

An invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. However, the U.S. Supreme Court has long interpreted 35 U.S.C. § 101 to include implicit exceptions: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *E.g.*, *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–218 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is “directed to.” *Alice*, 573 U.S. at 219 (“On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk.”); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.”).

Concepts determined to be abstract ideas, and, thus, patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–220; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–595 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 69 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as “molding rubber products” (*Diamond v. Diehr*, 450 U.S. 175, 192 (1981)); “tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores” (*id.* at 184 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–268 (1854))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

If the claim is “directed to” an abstract idea, we *then* turn to the second step of the *Alice* and *Mayo* framework, where “we must examine the elements of the claim to determine whether it contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice*, 573 U.S. at 221 (quotation marks omitted); *see Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016) (“Because the claims are not directed to an abstract idea under step one of the *Alice* analysis, we do not need to proceed to step two of that analysis.”). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’” *Alice*, 573 U.S. at 221 (quoting *Mayo*, 566 U.S. at 77).

### 1. Subject Matter Eligibility Guidance

The Office recently published revised guidance on the application of § 101. 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed.

Reg. 50 (Jan. 7, 2019).<sup>6</sup> Under that guidance, we first look to whether the claim recites:

- (1) Step 2A – Prong One: any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human interactions, such as a fundamental economic practice, or mental processes); and
- (2) Step 2A – Prong Two: additional elements that integrate the judicial exception into a practical application (*see* MPEP<sup>7</sup> § 2106.05(a)–(c), (e)–(h)).

Only *if* a claim (1) recites a judicial exception *and* (2) does not integrate that exception into a practical application, do we *then* look to whether the claim:

- (3) adds a specific limitation beyond the judicial exception that are not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or
- (4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. at 56 (“Step 2B: If the Claim Is Directed to a Judicial Exception, Evaluate Whether the Claim Provides an Inventive Concept”).

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<sup>6</sup> This guidance supersedes previous guidance memoranda. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. at 51 (“All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance.”).

<sup>7</sup> All Manual of Patent Examining Procedure (MPEP) citations herein are to MPEP Rev. 08.2017, January 2018.

2. *Alice/Mayo Step 1*

Applying step 1 of the *Alice/Mayo* analysis, the Examiner concludes the claims are directed to a process comprising a series of steps of separating a data streams into a unique component and a common component; deriving from the unique component a parameter related to a physical path; generating an indication of a physical location. *The claimed invention is directed to an abstract idea because it is simply the organization and comparison of data which can be performed mentally, which is an idea of itself.* It is similar [to] concepts that have been identified as abstract by the courts, such as using categories to organize, store and transmit information, or comparing new and stored information and using rules to identify options.

Final Act. 9 (emphasis added). In particular, the Examiner explains

the claimed method is directed to an abstract idea because, for example, one can read a piece of document (i.e., a data stream) or a paragraph (i.e., a data stream) that filled with data such as words, characters, numbers comprising such as 0s and 1s, Xs and Os, etc. and *to instruct himself using the mind (i.e., merely thinking)* to separate by recognizing different elements in the paragraph and call different elements as a unique component and a common component with some information and/or data regarding a location or a place then arrive (derive) a physical path related to a physical location or place, *and generate in mind a location of such place.* It is further determined that the claimed method can be considered *an abstract idea as identified by the courts as “certain methods of organizing human activity” and “an idea of itself”* and that would be equivalent to the court cases such as Collecting information, analyzing it, and displaying certain results of the collection and analysis [*Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)], and Collection, storage, and recognition of data ([*Smart Systems Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364 (Fed. Cir. 2017)]), etc. Clearly, the entire process as recited in the claim 44 is directed to an abstract idea.

Ans. 3 (emphases added). Thus, the Examiner concludes that the method steps and instructions recited in the independent claims are directed to mental processes *or* to certain methods of organizing human interactions.

Appellants contend that:

A data stream is not some abstract notion but, rather, any quantity exhibiting variation in time or space, such as digital or analog signals. *In short, a data stream is a physical entity, and not a product of mere human thinking.* Further, the processing device of claim 44 does not implement a generic computer function such as an idea that could be done by human analog because a human cannot receive a data stream and separate the data stream into a unique component and a common component, nor can human analog produce the remaining limitations of claim 44.

Br. 9 (emphasis added). The Examiner has attempted to identify a substitute for each of the components in the claims, e.g., a document or paragraph for the “data stream” and words, characters, or numbers therein for the “common” and “unique” components, to explain how the recited method steps and instructions could be performed by the human mind. Although these substitutes may provide an example of the separating step, for the reasons given by Appellants, we are not persuaded that the Examiner has demonstrated that the remaining steps of deriving a parameter from the unique component or generating a physical location from the parameter are mental processes, i.e., concepts performed in the human mind, such as an observation, evaluation, judgment, or opinion. *See* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. at 52.

Additionally or alternatively, the Examiner concludes that the claims are directed to “certain methods of organizing human interactions.” Ans. 3. Nevertheless, we are not persuaded that the Examiner has demonstrated that determining the physical location of a user’s device, separate and apart from

the location of other persons or places, or both, is an example of “Certain methods of organizing human activity— . . . *managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions).*” 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. at 52 (emphasis added); *see* Br. 4–5; *see also* Spec., 20:22–24 (“Once the UE has determined the distinct CIR, the UE can estimate relative distances from each BS, and subsequently can triangulate to generate an estimate of its location.”). Thus, we are not persuaded that the Examiner has demonstrated that the claims are directed to an abstract idea. Consequently, the Examiner erred in finding the recited computer-readable media, methods, and devices are patent ineligible, and we do not sustain the Examiner’s rejection of independent claims 44, 53, and 58, or the claims dependent therefrom, under 35 U.S.C. § 101.

*C. Failure to Demonstrate Anticipation by Ogino*

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test. *See In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). Nevertheless,

unless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.

*Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008);  
*accord In re Arkley*, 455 F.2d 586 (CCPA 1972).

With respect to claim 44, the Examiner finds that Ogino discloses “second instructions adapted to derive from the unique component a parameter related to a physical path.” Final Act. 11; Ans. 17. In particular, the Examiner finds that

as noted in the Final action, Ogino discloses second instructions adapted to derive from the unique component a parameter ([fig 11] BS\_ID) related to a physical path ([0065] mobile station can easily identify the sector that is transmitting the PN sequences it received and obtain the sector ID). That is, mobile station can identify the sector and obtain its ID such as the BS\_ID related to a particular base station. As shown in Figure 11, each base station at a different location transmitting in different paths the PN sequences. *Hence the BS\_ID is the unique component and a parameter itself related to a physical path as claimed.*

Ans. 17 (emphasis added). Thus, the Examiner finds that the unique component *and* the parameter derived from the unique component are disclosed by the same element used in Ogino’s location system.

Appellants disagree and contend that:

In the Examiner’s Answer, for the first time in prosecution, the Examiner has provided a further explanation as to why the Examiner believes these portions of Ogino teach the above recited portion of claim 44. Specifically, the Examiner asserts that since the mobile station can identify the sector that is transmitting and obtain its ID such as the BS\_ID related to a particular base station and each base station is at a different location transmitting in different paths the PN sequences, *the BS\_ID is the unique component and a parameter itself related to a physical path.* (See [Ans. 17].)

Reply 4 (emphasis added). Specifically, Appellants contend that:

It appears that the Examiner's analysis ignores the recited relationship between [“the unique component” and “a parameter

related to a physical path.”] Further, “the unique component” and “a parameter related to a physical path” are two distinct claim elements and thus, the Examiner’s reliance on a single element (BS\_ID) to teach two distinct claim elements fails to demonstrate that Ogino teaches each and every element of claim 44 because the BS ID cannot be both, “the unique component” and “a parameter related to a physical path.”

*Id.* at 5. We agree.

The Examiner fails to demonstrate that “the unique component” *and* “a parameter related to a physical path” both may read on Ogino’s disclosure of the “BS\_ID.” Further, the language of each independent claim recites that the “parameter related to a physical path” is *derived from* “the unique component.” Br. 24 (Claims App.). The Examiner fails to point to any language in the claims stating or teaching from the Specification disclosing that the parameter *derived from* the unique component may be the same as the unique component. Because Appellants used different terms: “unique component” and “parameter related to a physical path,” in each of the independent claims and describe the parameter as *derived from* the unique component, and because the Examiner fails to demonstrate that the Specification discloses that these terms may be the same thing, we are not persuaded that the Examiner demonstrates that Ogino discloses this element of the independent claims.<sup>8</sup>

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<sup>8</sup> Ogino’s sector IDs or “reference time offsets associated with the sector IDs” may disclose a “parameter” *derived from* the “unique component,” i.e., the BS\_ID, as recited in the independent claims. *See* Ogino ¶ 65. Nevertheless, the Examiner does not make either of these arguments or demonstrate that either argument with respect to the “second instruction” of claim 44 supports a determination that Ogino discloses each and every element of the independent claims. *See* Ans. 18–19. We decline to perform the analysis necessary to test such a determination here.

Accordingly, we do not sustain the Examiner's anticipation rejections of independent claims 44, 53, and 58. *See* Br. 22. The dependent claims are not argued separately, and the rejections of those claims are not sustained for the same reasons given for independent claims. *See id.*

*D. Failure to Demonstrate Obviousness Over Ogino and Yang*

The Examiner relies on the anticipation rejections with respect to independent claims 44 and 53 based on Ogino to support its obviousness rejections of dependent claims 52 and 57, respectively, based on the combined teachings of Ogino and Yang. Final Act. 14–15. For the reasons set forth above, we are not persuaded that Ogino anticipates claim 44 or 53. Thus, we are not persuaded that the Examiner demonstrates that the combined teachings of Ogino and Yang render claims 52 and 57 obvious, and we do not sustain the Examiner's obviousness rejections of those claims.

CONCLUSIONS

- (1) The Examiner erred in rejecting claims 44–62 and 64 under 35 U.S.C. § 101, as directed to patent-ineligible subject matter.
- (2) The Examiner erred in rejecting claims 44–51, 53–56, 58–62, and 64 under 35 U.S.C. § 102(b), as anticipated by Ogino.
- (3) The Examiner erred in rejecting claims 52 and 57 under 35 U.S.C. § 103(a), as rendered obvious by the combined teachings of Ogino and Yang.
- (4) On this record, claims 44–62 and 64 are not unpatentable.

Appeal 2018-005361  
Application 14/851,710

DECISION

We reverse the Examiner's rejections of claims 44–62 and 64.

REVERSED