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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ROBERT N. TOMASTIK, JIHUA WANG, HOWARD A. WINSTON, JULIE A. IRELAND, BETH K. MATONAK, AND DAVID J. SIRAG JR.

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Appeal 2012-007228  
Application 11/618,802  
Technology Center 3600

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Before JOSEPH A. FISCHETTI, BIBHU R. MOHANTY, and BRADLEY B. BAYAT, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION<sup>1</sup> ON APPEAL

STATEMENT OF THE CASE

Appellants<sup>2</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–14. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> Our decision references Appellants' Appeal Brief ("App. Br.," filed Nov. 15, 2011), Reply Brief ("Reply Br.," filed Apr. 2, 2012), and the Specification ("Spec.," filed Dec. 30, 2006), and the Examiner's Answer ("Ans.," mailed Feb. 1, 2012).

<sup>2</sup> Appellants identify the real party in interest as United Technologies Corporation (App. Br. 1).

## STATEMENT OF THE DECISION

We AFFIRM-IN-PART.

### INVENTION

The claimed invention relates to a method for optimizing maintenance work schedules for fleet management programs (Spec. ¶ 1). Claims 1, 7, 8, and 14 are independent. Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A process for optimizing maintenance work schedules in a fleet management program for at least one engine, comprising:

creating at least one possible LLP workscope decision for a first shop visit;

creating at least one unscheduled engine repair scenario for each said at least one possible LLP workscope decision;

selecting one of said at least one unscheduled engine repair scenario for one of said at least one possible LLP workscope decision;

calculating at least one expected cost for said one of said unscheduled engine repair scenario;

determining a lowest expected cost of said at least one expected cost for said one of said unscheduled engine repair scenario;

selecting a workscope decision having said lowest expected cost for said first shop visit; and

performing a repair upon an engine which follows said workscope decision having said lowest expected cost.

## REJECTIONS

The following rejections are before us for review.

1. Claims 2, 7, 9 and 14 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement.
2. Claims 2, 7, 9, and 14 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite.
3. Claims 1–7 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.
4. Claims 1, 3–6, 8, and 10–13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Winston (US 2006/0111871 A1, pub. May 25, 2006) and Official Notice.

## FINDINGS OF FACT

We have determined that the findings of fact in the Analysis section below are supported at least by a preponderance of the evidence.<sup>3</sup>

## ANALYSIS

### Enablement Rejection

#### *Claims 2, 7, 9 and 14*

When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification; this includes, of course, providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement. If

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<sup>3</sup> See *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Patent Office).

the PTO meets this burden, the burden then shifts to the Appellants to provide suitable proofs indicating that the specification is indeed enabling. *In re Wright*, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993) (citing *In re Marzocchi*, 439 F.2d 220, 223-24 (CCPA 1971)).

It is well-established law that the test for compliance with the enablement requirement in the first paragraph of 35 U.S.C. § 112 is whether the disclosure, as filed, is sufficiently complete to enable one of ordinary skill in the art to make and use the claimed invention without undue experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

“Enablement is not precluded by the necessity for some experimentation. However, experimentation needed to practice the invention must not be undue experimentation. The key word is ‘undue,’ not ‘experimentation.’” *Id.* at 736–737. To evaluate whether a disclosure would require undue experimentation, the Federal Circuit has adopted the following factors to be considered:

- (1) The quantity of experimentation needed to make or use the invention based on the content of the disclosure;
- (2) The amount of direction or guidance presented;
- (3) The existence of working examples;
- (4) The nature of the invention;
- (5) The state of the prior art;
- (6) The relative skill of those in the art;
- (7) The level of predictability in the art; and
- (8) The breadth of the claims.

*Id.* at 737. Thus, the examiner's analysis must consider all the evidence related to each of these factors, and any conclusion of non-enablement must be based on the evidence as a whole. *Id.*

Here the Examiner has failed to present a complete analysis with the cited Wands factors and the burden of establishing lack of enablement has not been met. The Examiner merely states “[i]t is not clear how the equation provided helps the application find the optimum work schedule for the LLP repairs taking into expected and unexpected situations” (Ans. 5). For this reason, the rejection of claims 2, 7, 9, and 14 made under 35 U.S.C. § 112, first paragraph is not sustained.

#### Indefiniteness Rejection

##### *Claims 2, 7, 9 and 14*

Claims 2, 7, 9, and 14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the equation recited fails to provide “the names of variables (i.e., E), [which according to the Examiner], must be in the claim limitation” (Ans. 16).

Appellants contend that they are unaware of such a requirement and specify the name of each variable of the recited equation as provided in the Specification at paragraph 60 (App. Br. 12–13, Reply Br. 3–4).

“The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope.” *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994) (citing *Amgen Inc. v. Chugai Pharma. Co.*, 927 F.2d 1200, 1217 (Fed. Cir.1991)). “[T]he definiteness of the language employed must be analyzed — not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.” *In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971).

We agree with Appellants that one of ordinary skill in the art would determine the name of each variable from a reading of the Specification.

Therefore, we conclude that the Examiner erred in rejecting claims 2, 7, 9, and 14 as indefinite.

### Non-statutory Rejection

#### *Claims 1–7*

The Examiner concludes that claims 1–7 are directed to non-statutory subject matter for failing the machine-or-transformation test, and hence, ineligible subject matter for patenting under 35 U.S.C. § 101 (Ans. 6–7).

Appellants argue that because “an engine is being repaired using the workscope decision...[w]hen one repairs an engine or performs work on it, one transforms the engine” (Reply Br. 4–5). Thus, Appellants conclude “the method is tied to the repair of a particular apparatus – namely the engine” (*id.* at 5).

Subsequent to the filing of briefs in this appeal, the Supreme Court in *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014), reiterated the framework set out previously in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (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*, 134 S. Ct. at 2355. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If they are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims “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.* at 2350 (quoting *Mayo*, 132 S. Ct. at 1297). In other words, the second step is to “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.* at 2355 (quoting *Mayo*, 132 S. Ct. at 1294).

In this case, claim 1 is drawn to a process for optimizing maintenance work schedules in a fleet management program for at least one engine including the steps of creating a workscope decision and an unscheduled engine repair scenario for the workscope decision, selecting the unscheduled repair engine scenario, calculating an expected cost for the selected scenario, determining a lowest expected cost of said expected cost, selecting a workscope decision having said lowest expected cost, and performing a repair upon an engine based on the selected workscope decision having the lowest expected cost. The claim is directed to the abstract idea of cost optimization.

Having determined that the Appellants’ method claim is directed to a patent-ineligible concept, we must now consider whether the claim contains additional substantive limitations that narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not fully cover the abstract idea itself. *See Alice*, 134 S. Ct. at 2357 (“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. 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].’”) (citations omitted). Here, claim 1 fails to even suggest the use of a computer in carrying out the process. Thus, the recited claim limitations both individually and as an ordered combination fail to transform the nature of the claim into a patent-eligible application.



Additionally, claim 1's method step can largely be performed by a human using a pen and paper. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (relying on the Supreme Court's decision in *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972), for the proposition that “methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas”). For example, the steps can be performed either in the human mind, or by a human writing down calculating the cost based on each scenario and selecting the lowest cost scenario. Thus, in light of the analysis explained in *Alice Corp.* and *CyberSource*, claim 1 is not directed to patent-eligible subject matter at least because it is a mental process and hence an abstract idea.

Further, the Supreme Court recognized that, although not the sole test, the “machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101.” *Bilski*, 130 S. Ct. at 3227. Here, claim 1 is not tied to a particular machine or apparatus and does not transform a particular article into a different state or thing. *Id.* at 3226 (citation omitted); *see also Digitech Image Techs. v. Elecs. for Imaging, Inc.*, slip op. at 11 (Fed. Cir. July 11, 2014) (finding the method claims directed to an abstract idea in-part because they are “not tied to a specific structure or machine”). The performance of the repair on the engine is nothing more than insignificant extra-solution activity, followed after the selection of the workscope decision resulting from the optimization process. In other words, “the claims simply instruct the practitioner to implement the abstract idea with routine, conventional activity.” *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). Under *Alice*, this is not sufficient “to

transform an abstract idea into a patent-eligible invention.” *See Alice*, 134 S. Ct. at 2360. Thus, the machine-or-transformation test provides further support for our conclusion that independent claim 1 is directed to non-statutory subject matter. Therefore, claim 1 does not recite any limitation that, in practical terms, limits the scope of the claim so it does not fully cover the abstract idea itself.

In view of the foregoing, we sustain the Examiner’s rejection of claims 1–7 under 35 U.S.C. § 101.

#### Obviousness Rejection

##### *Claims 1, 3–6, 8, and 10–13*

The Examiner rejects independent claims 1, 7, 8, and 14 as unpatentable over Winston in view of Official Notice (Ans. 8–9).

Appellants’ dispute the Examiner’s taking of Official Notice as improper (App. Br. 17–20, Reply Br. 6–7).

In the Non-Final Rejection mailed on August, 31, 2010, the Examiner stated:

Winston does not explicitly disclose performing this list of tasks, but the examiner takes official notice that the reference teaches finding the optimum cost of LLP work for expected and unexpected work and then creates the task list of issues to perform that it would be inherent to then perform this list of tasks. Additionally, there is also an analysis that takes into account history of past activities (see; pg. 6, par. [0039] of Winston) this indicates that the work has been done in the past and recoded indicating that the work is performed on the engines. It would be obvious to one of ordinary skill in the art at the time of the invention to expand the process of optimizing maintenance work schedules of Winston to include actually performing the repair, because this will make the database for

historical information making the optimization of the expected and unexpected repairs more accurate and therefore effective (Non-Final Rejection 7).

Appellants filed a response on November 30, 2010 disputing the Examiner's taking of Official Notice based on inherency in Winston because "there are many ways to arrive at costs," refuted the teachings in paragraph 39 as proffered by the Examiner, and challenged the Examiner's conclusion of obviousness by requesting documentary evidence (*see* Amendment after Non-Final 15–16).

In the Final Rejection mailed February 14, 2011, the Examiner fails to address Appellants' challenge to the Official Notice or provide any documentary evidence (Final Act. 2–10).

We agree with Appellants that proper documentary evidence to support the conclusion of obviousness by taking Official Notice here has not been provided. It is not appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697 ("[T]he Board cannot simply reach conclusions based on its own understanding or experience—or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings."). As such, we find the Examiner improperly relied on Official Notice for core factual findings.

It is further unclear that the facts for which Official Notice is taken are capable of instant and unquestionable demonstration as being well-known. Thus, a *prima facie* case of obviousness has not been established, and

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therefore, the rejection of claims 1, 3–6, 8, and 10–13 under 35 U.S.C. § 103 is not sustained.

#### DECISION

The rejections of claims 2, 7, 9, and 14 under 35 U.S.C. § 112 are reversed.

The rejection of claims 1–7 under 35 U.S.C. § 101 is affirmed.

The rejection of claims 1, 3–6, 8, and 10–13 under 35 U.S.C. § 103 is reversed.

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

#### AFFIRMED-IN-PART

Ssc