

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JAMES R. MORRISON and WILLIAM STEVEN CLAY

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Appeal 2009-001476  
Application 10/889,840<sup>1</sup>  
Technology Center 2100

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Decided: January 7, 2010

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*Before* LANCE LEONARD BARRY, JAY P. LUCAS, and DEBRA K.  
STEPHENS, *Administrative Patent Judges*.

LUCAS, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> Application filed July 13, 2004. Appellants claim the benefit under 35 U.S.C. § 119 (2002) of provisional application 60/547,619 filed February 25, 2004. The real party in interest is Rockwell Automation Technologies, Inc.

## STATEMENT OF THE CASE

Appellants appeal from a final rejection of claims 1 to 23 under authority of 35 U.S.C. § 134(a) (2002). The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b) (2008).

We affirm the rejections.

Appellants' invention relates to a system and method for inferring values related to the end of life (EOL) of components in a manufactured product. In the words of Appellants:

The present invention relates to system(s) and methodology(s) for determining end of life (EOL), and level of risk to EOL of components and the impact thereof. As discussed above, in 1998, electronic component manufacturers discontinued 34,000 parts - the equivalent of 153 parts per business day. Many products consist of multiple components, electronic and mechanical, provided by as many as 50 different suppliers. Such products can have a fairly extensive useful life (*e.g.*, at least 10 years), with many customers using the products for decades. The subject invention addresses the issue of such product(s) being affected by an obsolete or high "RISK" component, and provides a novel scheme for mitigating negative impact associated with component obsolescence.

One particular aspect of the invention provides for a database tool that is employed to determine, infer and/or predict which components (*e.g.*, processors, memory chips, resistors, opto-electronics, software, mechanical components...) will likely need replacement over the course of a product's expected life. Such aspect of the invention includes a material risk index (MRI) tool that ties a set of algorithms to a detailed and unique database. It analyzes a product's bill of material and scores components on a scale (*e.g.*, from zero to five), where the greatest score for example indicates highest risk to End-of-Life (EOL). The tool can also track components of a product, as well as its suppliers. Regular dialog with suppliers about when

a specific component will be discontinued, coupled with market data, technology life cycle and other information, allows the Material Risk Index tool to predict what products need attention and when. Product engineers and/or an automated aspect of the system can begin finding replacements, scheduling redesign work and notifying others that changes are on the way. Thus, the invention facilitates proactively maintaining product life cycles based in part on a fact based framework for deciding when to perform product upgrades.

(Spec. 2, 3.)

Claims 1 and 15 are exemplary:

1. A system that facilitates managing product life cycle, comprising:

a data-receiving component that receives data on availability of components to a product and suitable substitution components and determines relevance of the components to the product;

an analyzing component that evaluates the received data, and determines, infers or predicts obsolescence and/or risk to end-of-life (EOL) of a subset of the components to a product by scoring each component on a numerical EOL scale; and

a notification component that provides notification to at least one of individuals, computers and systems regarding obsolescence and/or risk to end-of-life of the subset of the components to a product, and provides recommendations in accordance therewith.

15. A computer implemented method to facilitate component management, comprising:

identifying the level of component risk to obsolete, EOL or unavailable;

determining risk associated with obsolescence, EOL or unavailability of a subset of the components;  
scoring each component in the subset of the components on a numerical scale of EOL risk;  
determining suitable replacement components for any of the subset of components having an undesirable level of risk;  
and  
notifying at least one of individuals, computers and systems of the suitable replacement components and providing recommendations in accordance therewith.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

McMenimen	2002/0077850 A1	Jun. 20, 2002
Santos	2002/0143665 A1	Oct. 3, 2002

IHS DMS ALERT SERVICE, A PROACTIVE TOOL FOR MANAGING DIMINISHING MANUFACTURING SOURCES AND MATERIAL SHORTAGE (DMS) (1999) (hereinafter "IHS").

### **REJECTIONS**

The Examiner rejects the claims as follows:

R1: Claims 1 to 14, and 23 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

R2: Claims 1, 2, 6, and 12 to 14 stand rejected under 35 U.S.C. § 102(b) for being anticipated by Santos.

R3: Claims 1 to 5, 10, 11, 15 to 17, and 21 to 23 stand rejected under 35 U.S.C. § 102(b) for being anticipated by IHS.

R4: Claims 7 to 9, 19, and 20 stand rejected under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) for being anticipated by and obvious over IHS.

R5: Claim 18 stands rejected under 35 U.S.C. § 103(a) for being obvious over IHS in view of McMenimen.

Groups of Claims:

The claims will be addressed in the order of the rejections, and grouped consistently therewith.

Appellants contend that the claimed subject matter is statutory, and is not anticipated by Santos or by IHS, or rendered obvious by IHS alone, or in combination with McMenimen, for failure of the references to teach claimed limitations. The Examiner contends that each of the claims is properly rejected.

Only those arguments actually made by Appellants have been considered in this opinion. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived.

**ISSUE**

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 101, 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a). The issue of whether the claims are statutory under 35 U.S.C. § 101 turns on the current state of the law, as represented by *In re Bilski*, 545 F.3d 943 (2008) (en banc), *cert. granted*, 129 S.Ct. 2735 (2009) and *Ex Parte Gutta*, 2009 WL 2563524 (BPAI 2009) (per curiam) (expanded panel) (precedential). The issue of anticipation and obviousness turns on whether IHS and Santos teach the analysis component and scoring on an EOL scale as claimed.

### FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellants invented “a database tool that is employed to determine, infer, and/or predict which components . . . [in a computer based system] will likely need replacement over the course of the product’s expected lifetime.” (Spec. ¶ [0008]). The bill of materials used to make the product is analyzed using various algorithms to determine a Material Risk Index, which is a numeric rating. (*Id.*). This may be communicated to engineers, parts suppliers and others as required to make appropriate planning or shopping decisions. (*Id.*). A substitution component can be employed to suggest other equivalent components to the ones at risk. (*Id.* ¶ [0032]).
2. The Patent Application Publication of Santos teaches a method and system for managing EOL issues of parts, assemblies and products. (¶ [0021], ¶ [0024]). Data is gathered by a data checker 220 to be analyzed by the EOL engine, 240 (¶ [0029] - ¶ [0031]) in accordance with defined algorithms and formulas (¶ [0061] - ¶ [0063]). The notification to the engineers is in the form of a raw material buy plan responsive to the calculated design solutions at a specified confidence level. (¶ [0072]).
3. IHS is a product brochure for a product of the IHS company that manages manufacturing materials over the life cycle of a product considering EOL factors, such as obsolescence of parts. (IHS 3, middle). Reports are generated based on calculations of obsolescence data

downloaded from government and commercial sources for systems, assemblies and components. (IHS 6, top). Analysis is based on advanced predictive methodologies. (*Id.*).

### **PRINCIPLES OF LAW**

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

In rejecting claims under 35 U.S.C. § 102, "[a] single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation." *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1375 (Fed. Cir. 2005) (citation omitted).

Anticipation of a patent claim requires a finding that the claim at issue "reads on" a prior art reference. In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.

Appeal 2009-001476  
Application 10/889,840

*Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999)  
(internal citation omitted)).

The Court of Appeals for the Federal Circuit (CAFC) recently clarified the law regarding patent eligible subject matter for process claims. *In re Bilski*, 545 F.3d 943. The en banc court in *Bilski* held that “the machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101.” *Id.* at 956. The court in *Bilski* further held that “the ‘useful, concrete and tangible result’ inquiry is inadequate” to determine whether a claim is patent-eligible under § 101. *Id.* at 959-960. The court explained the machine-or-transformation test as follows:

The machine-or-transformation test is a two-branched inquiry; an applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article. *See [Gottschalk v. ]Benson*, 409 U.S. [63], 70 [(CCPA 1972)]. Certain considerations are applicable to analysis under either branch. First, as illustrated by *Benson* and discussed below, the use of a specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility. *See Benson*, 409 U.S. at 71-72. Second, the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity. *See [Parker v.] Flook*, 437 U.S. [584,] 590 [(1978)].

*Id.* at 961-62.

“It is well established that ‘[t]he first door which must be opened on the difficult path to patentability is § 101.’ Only if the requirements of § 101 are satisfied is the inventor ‘allowed to pass through to’ the other requirements for patentability.” *In re Comiskey*, 554 F.3d 967, 973 (Fed.

Cir. 2009) (quoting *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F3d 1368, 1372 n. 2 (Fed. Cir. 1998)).

“[T]he words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (citations omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” (*Id.* at 1313).

### ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a prima facie case for the rejection of Appellants’ claims under 35 U.S.C. §§ 101, 102, and 103 presented on pages 4 to 15 of the Examiner’s Answer. In opposition, Appellants present a number of arguments.

*Arguments with respect to the rejection  
of claims 1 to 14, and 23  
under 35 U.S.C. § 101 [R1]*

The first argument addresses the issue of statutory subject matter under 35 U.S.C. § 101. The Examiner contends that the noted system claims are directed at software modules “devoid of any apparent hardware, and therefore are computer programs e.g. functional descriptive material. Since the computer programs are not embodied on an appropriate computer-readable storage medium, they cannot be afforded patent eligibility.” (Ans. 4).

Appellants argue that the claim necessarily requires computer implementation, because without the computer the functions recited in the claims, most notably notification to individuals, computers and systems cannot be performed. (App. Br. 6).

The Examiner has chosen to not maintain the rejection under 35 U.S.C. § 101 of the method claims. (Ans. 3). Thus, before us today are only the system claims, 1 to 14, and 23.

As the Examiner contends, it is the policy of this Office to not reject under statutory grounds novel and unobvious computer based algorithms when claimed as residing on a computer readable medium. *Ex Parte Li*, Appeal No. 2008-001213, (BPAI Nov. 6, 2008).<sup>2</sup> The claims in the instant appeal, however, are composed of modules reciting functional algorithms or steps that are disclosed as embodied as software, but omitting the computer readable medium. (Spec. ¶ [0061]).

The recent CAFC decision *In re Bilski*, discussed above, addressed the statutory limitations of method claims. While method steps are incorporated in the appealed claims, for which neither a particular machine nor a transformation of an article is present, the claims are at least nominally styled as system claims.

For guidance on system claims, we look instead to the precedential *Ex Parte Gutta*, 2009 WL 2563524 (BPAI 2009). For a machine or manufacture that embodies an algorithm expressed as a series of steps, we

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<sup>2</sup> But see *Ex Parte Gutta*, which adds the requirement of a “tangible practical application in which the mathematical algorithm is applied that results in a real-world use.” *Ex Parte Gutta*, 2009 WL 2563524, at \*9.

are guided, based on *Flook*, *Benson* and *Diehr*<sup>3</sup>, to see if the claim 1) recites a mathematical algorithm applied to a tangible practical application that resulted in a real-world use, and 2) did not encompass substantially all practical applications of the mathematical algorithm. (*Ex Parte Gutta* 2009 WL 2563524, at \*7).

We look to representative claim 1 and notice, as the Appellants point out, that one of the components will notify an individual, computer or other system regarding the obsolescence or risk to EOL of the components of a product. (App. Br. 5-6). We find this notification of the end of life risks of the product to be a real-world use of the system, including the algorithm as claimed. While we do not necessarily endorse the useful, concrete and tangible tests, as addressed by the Appellants, we do find sufficient support for satisfaction of the *Ex Parte Gutta* test. We thus agree that the Appellants have demonstrated error in the Examiner's rejection under 35 U.S.C. § 101.

*Arguments with respect to the rejection  
of claims 1, 2, 6, and 12 to 14  
under 35 U.S.C. § 102(b) [R2]*

The Examiner rejected the noted claims under 35 U.S.C. § 102 for being anticipated by Santos. Appellants argue first that Santos “relates to end of life of products rather than the end of life of the components or a subset of the components” (App. Br. 9). We have reviewed Santos, and find that Santos refers to raw materials that are combined to make assemblies, and that assemblies are combined to make products. (¶ [0024], [0025]). The

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<sup>3</sup> *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63 (1972); and *Diamond v. Diehr*, 450 U.S. 175 (1981).

formulas and algorithms of Santos consider the EOL issues of products (§ [0034]), assemblies (§ [0035]) and individual parts (§ [0040]). We thus find this argument of the Appellants' to be unconvincing.

Appellants further argue that Santos does not teach an analyzing component that evaluates the received data, and performs the claimed analyses on each component on a numerical EOL scale. (App. Br. 9). We have considered the operations of Santos' EOL engine 240, and the reading of the teachings of the various numerical factors of Santos on the claimed term "numerical EOL scale". All of the factors in the Santos equations are related to the EOL decision (e.g. salvage value, write-off, and procurement investment). We find that the Santos calculations read on a fair but broad reading of the claimed term, numerical EOL scale. (*See* Ans. 18).

We thus do not find that the Appellants have demonstrated error in this rejection.

*Arguments with respect to the rejection  
of claims 1 to 5, 10, 11, 15 to 17 and 21 to 23  
under 35 U.S.C. § 102(b) [R3]*

The Examiner rejected the noted claims for being anticipated by IHS. Appellants argue that IHS "relates to a proactive tool for managing diminishing manufacturing sources and material shortages." (App. Br. 10). "According to the subject claims, obsolescence can be detected before it occurs - in stark contrast to IHS INC where obsolescence is only detected after it has matured." (*Id.* at 11) (emphasis omitted).

The Examiner contends that claims 15 and 23 do not define whether the calculation of obsolescence occurs before or after the obsolescence itself.

(Ans. 20). On analysis of the claims, we find that the Examiner is correct for the noted claims; albeit not for claim 1. However, in IHS we find the predictive nature of the calculations that the Appellants contend is missing: “allows time for the replacement parts to be identified, inventories to be restocked for production and maintenance....” (IHS 3, top). We thus find Appellants’ arguments to be unconvincing of error for all claims in the noted rejection.

*Arguments with respect to the rejection  
of claims 7 to 9 and 19 to 20  
under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) [R4]*

The Examiner rejected the noted claims for being anticipated by and obvious over IHS. Appellants rely on the arguments presented above for rejection R3 in contesting this rejection. (App. Br. 11).

As we declined to find error in the rejection R3, we will not find error in this rejection.

*Arguments with respect to the rejection  
of claim 18  
under 35 U.S.C. § 103 [R5]*

The Examiner rejected the noted claim for being obvious over IHS in view of McMenimen. Appellants merely contend that McMenimen does not cure the deficiencies of the IHS reference. As we have not found such deficiencies, we decline to be convinced of error in this rejection R5.

**CONCLUSIONS OF LAW**

Based on the findings of facts and analysis above, we conclude that the Examiner did not err in rejecting claims 1 to 23 under rejections R2 to R5. However, the Examiner did err in rejecting claims 1 to 14 and 23 under 35 U.S.C. § 101.

**DECISION**

The Examiner's rejection R1 of claims 1 to 14 and 23 is reversed.

The Examiner's rejections R2 to R5 of claims 1 to 23 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) (2009).

**AFFIRMED**

nhl

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