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Deputy Commissioner for Patent Examination Policy
United States Patent & Trademark Office

Re: Comments on 2014 Interim Guidance on Subject Matter Eligibility.[1]

On December 16, 2014 the USPTO issued its 2014 Interim Guidance on Subject Matter Eligibility. In the introduction, the Guidance states that it "is responsive to the public comments received pertaining to the March 2014 Procedure and the June 2014 Preliminary Instructions." The Office received comments from forty seven submitters in response to the Preliminary Instructions.[2]

To its credit, the Office responded to a number of the concerns raised by the submitters. Most importantly, as noted at the January 21, 2015 Patent Eligibility Forum, the Interim Guidance altered the explanation of the *Mayo* test from the Preliminary instructions to state that "the application of the overall analysis is based on claims directed to judicial exceptions (defined as claims reciting the exception, i.e., set forth or described), rather than claims merely "involving" an exception." The Office also provided succinct explanations of some of the Supreme Court and Federal Circuit eligibility cases, and most importantly, included a treatment of *DDR Holdings, LLC v. Hotels.com, L.P.*, the first post-*Alice* Federal Circuit case to find patent eligible subject matter in computer-implemented inventions.

In Section I, I will focus on the analyses and recommendations that were raised by a significant number of submitters and that the Interim Guidance did not adequately address. In Section II I will analyze various ones of the patent eligibility case summaries and show how they inaccurately explain the court's holding and analysis. In Section III I review some of the hypothetical claim examples provided by the USPTO. In Section IV I conclude with overall observations about the Office's approach to guiding the examiners through the "murky morass"

[1] The views set forth herein are my own, and do not reflect the opinions of Fenwick & West LLP, or any of its clients.

[2] Submitted comments are available at http://www.uspto.gov/patents/law/comments/alice_2014_comments.jsp. In the remainder of my comments, I will refer to various submitters by name, and where appropriate the page number of their submission.

of Section 101 by relying on a technologically mature understanding of how inventors go about the act of inventing.[3]

I. Significant Issues and Recommendations Not Addressed by the Interim Guidance

A. Requiring Factual Evidence in Support of § 101 Rejection for Abstract Ideas

A significant number of the submitters recommended that examiners provide factual evidence and clear reasoning in support of the § 101 rejections. Eighteen (41%) of the submitters, including organizations such as ABA, AIPLA, BSA, IEEE and IPO, as well as companies as Microsoft, SAS and Trading Technologies, pointed out that examiners have the burden of making the prima facie case of patent ineligibility and that to do so they must rely on factual evidence explained by clear and logical reasoning—not merely their personal opinion that something was "fundamental" or "abstract."

It was noted that under the Administrative Procedures Act and controlling federal case law, examiners must provide "substantial evidence" in support of all rejections, and that personal opinion does not meet this requirement. See, Administrative Procedure Act 5 U.S.C. 500 et seq. *In re Gartside*, 203 F.3d 1305, 1315 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 999–1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (broad conclusory statements about the teaching of references are not "substantial evidence"); *Donohue v. Barnhart*, 279 F.3d 441, 446 (7th Cir. 2002) ("Evidence is not 'substantial' if vital testimony has been conjured out of whole cloth").

Most significantly submitters on both sides of the issue—those supporting a broad scope of patent eligibility and those supporting a narrow scope—made this same recommendation; when opponents agree on such an important issue, it means that they are probably right. For example, IEEE, which supports a broad scope of patent eligibility, noted that the Office:

> [S]hould make clear that any showing of "old" or "conventional" must cite "substantial evidence" (in an Administrative Procedure Act sense), and should expressly remind examiners of the basic principle that examiner opinion or explanation is not "evidence" at all, let alone substantial evidence.5 § 101 rejections must cite "substantial evidence," just as any § 102 or § 103 (and many § 112(a)) rejection must.
>
> and
>
> [S]hould make clear that an examiner's personal assertion that something is "well known" under MPEP § 2144.03 is not relevant to the evidentiary showings required for § 101.[4]

[3] *MySpace, Inc. v. GraphOn Corp*., 672 F. 3d 1250 (Fed. Cir. 2012).
[4] IEEE, p. 7, 3.

The CCIA on the other hand supports a more narrow scope, but likewise stated:

> [I]t is critical for both the examiner and the patent applicant to create a clear prosecution history. In the context of § 101 rejections, the examiner should provide more than a conclusory rejection.[5]

Requiring the examiners to provide substantial evidence and reasoning is necessary to allow applicants to have sufficient opportunity to rebut the examiner's conclusions. As explained by BGC-Cantor "Examiner opinion and explanation are not tangible evidence, let alone substantial evidence. Tangible evidence allows applicants to enter into a meaningful dialog with examiners and to rebut the assertion."[6] IEEE provided a list of five specific ways that applicants may use to rebut the examiner's argument, and which the Office should expressly acknowledge as being acceptable.[7] Further, by providing substantial evidence and reasoning, rather the "form paragraph rejections," examiners will reduce the number of appeals to the Board (and likely reversals), and thereby not negatively impact the improvements in pendency that the Office has recently achieved.[8]

In the recently decided case *Ex parte Renald Possion*[9] the Board reversed an examiner's Section 101 rejection precisely because the examiner failed to support the rejection with real evidence:

> Thus, in the first step of the Alice analysis, the question is whether claim 1, i.e., as a simulation of a football game using a table and cards, is directed to an abstract idea**. That determination has not been made in this case based on evidence. Instead, the Examiner merely expresses an opinion that "a set of rules qualifies as an abstract idea." Yet, absent supporting evidence in the record — of which there is none, the Examiner's opinion is an inadequate finding of fact on which to base the *Alice* analysis.** Moreover, it does not comport with the broadest reasonable construction of claim 1 which, as we conclude, is not directed to a new set of rules for playing a card game. The PTO bears the initial burden of establishing a prima facie case of patent-ineligible subject matter under 35 U.S.C. § 101. **Because the facts and evidence do not support the finding that claim 1 is "an attempt to claim a new set of rules for playing a card game" and therefore, necessarily, is an abstract idea, a prima facie case of patent-ineligible subject matter under 35 U.S.C. § 101 has not been established in the first instance by a preponderance of the evidence.**

Unfortunately, the Interim Guidance was completely silent on this point. No direct mention was made of the evidentiary requirements for supporting a § 101 rejection. At best, the Interim Guidance made oblique references to MPEP 2106(III). But this citation only indicates that

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[5] CCIA, p. 2.
[6] BCG-Cantor, p. 5.
[7] IEEE, p. 4.
[8] Hollaar, p 5 (**"**The use of a form subject matter rejection, with the examiner simply making conclusory remarks with no references or reasoning given as in the language above, will inevitably lead to form appeals**…**Either the PTAB will reverse and remand to the examiner for the justification that should have been there in the beginning, or the PTAB will have to do the work of the examiner and specify for the first time the justification for the rejection.**"**).
[9] Appeal 2012-011084, decided February 27, 2015 (emphasis added).

Examiner has the burden to make the prima facie case, not that the Examiner must rely on substantial evidence.

Another aspect of the evidentiary issue that is entirely overlooked is that in each of the Federal Circuit cases cited by the Interim Guidance there is a factual record from the lower court decision, often including multiple declarations of expert witnesses as to the state of the art and what aspects of a patent claim are conventional, routine, or fundamental to a particular field of endeavor. This factual record, while not typically cited by the Federal Circuit, was nonetheless relied upon by both the district court and the Federal Circuit to support a finding of patent ineligibility. In contrast, during examination there is no such record for the examiner to rely upon. A citation to a bullet point list of abstract ideas supported by Federal Circuit decisions does not provide the necessary "substantial evidence," and an examiner cannot use a given Federal Circuit decision as a proxy for such evidence. This is another reason why the Interim Guidance must require an examiner to cite factual evidence to support a § 101 rejection.

B. Establishing That an Abstract Idea is a Fundamental Building Block

The first step of the Mayo test requires determining whether the claim is "directed to" an ineligible concept, and in the software context that typically devolves into a question of whether the claim is directed to an abstract idea. Many submitters noted that the Preliminary Instructions did not adequately explain to examiners the requirements for supporting the assertion that the claim is directed to an abstract idea. The IEEE along with BGC-Cantor, Trading Technologies, Public Knowledge and four law firms and individuals addressed this specific issue. Here too the Interim Guidance was entirely silent and did not respond to analyses and recommendations made by the submitters.

These submitters noted that the Supreme Court case law demonstrates that not any generalization or abstraction is an "abstract idea" that may be ineligible. The Supreme Court in *Alice* stated "as we have used that term" abstract ideas are those ideas that are "building blocks" and "fundamental" to culture or the "modern economy," are "the basic tools of scientific and technological work."[10] The Court realizes that every patent preempts and blocks in some degree, because that is what patent claims do. Only when claims are directed to "building blocks of human ingenuity" do they "risk disproportionately tying up" the use of foundational concepts, and thereby implicate the core concern of preemption.

To establish that an idea is a fundamental building block in this sense, the Supreme Court made clear in *Bilski v. Kappos* and *Alice*, that specific references must be cited to support a finding that an alleged abstract idea is "long prevalent" in the field. "Long prevalent" has two requirements: 1) long known, rather than of recent origin; and 2) prevalent, that is widely used. In both cases, the Court cited three references in the field, including in Alice one reference that was over 100 years old, to meet these requirements. Certainly, if the Supreme Court believed it was necessary to cite numerous references to support its findings, it is incumbent upon examiners to do so. Again, submitters on both sides of the issue supported the view that the

[10] *Alice*, 134 S. Ct. 2347 (2014) at 2354, 2357.

examiner must provide citation to evidence to establish that an alleged abstract idea is "fundamental."

For example, the following comments were from broad eligibility supporters:

> IEEE: Alice requires that an "abstract idea" must have been "prevalent," "fundamental," "taught in any introductory finance class," and/or "a building block of the modern economy." A known-but-rarely-used concept is not "abstract" under the reasoning of Alice. Even if an idea is logical and correct, an idea is not "abstract" unless it is "prevalent." Note that the latter two characteristics are far more stringent than mere novelty under § 102 with respect to time of knowledge and breadth of use. Each of the latter two showings must be supported by "substantial evidence" in the sense of the Administrative Procedure Act. The Action must cite to either a statement in the applicant's specification or in a third-party reference, to support both "long" standing and prevalent. (emphasis in original).[11]

> Schwegman Lundberg & Woessner: Accordingly, a determination that a claim includes a fundamental economic practice should require more than merely identifying an economic component to the claim. Instead, it should require authoritative documentation that the identified economic component is long prevalent in our system of commerce. Mere prior publication, if that publication were either recent or obscure, would not suffice to convert a non-fundamental economic practice into a fundamental one.[12]

> Howard IP Law Group: The Supreme Court in Bilski accordingly established that, in order to qualify as a fundamental economic practice, a practice must have been in use in the economy for a long period of time, and, furthermore, must have been prevalent in the economy for a long period of time. A practice that has been known or in use for a long period of time, but has not been so widely used for a long period of time as to qualify as prevalent, is not a fundamental economic practice. A practice that is now prevalent in the economy, but has not been prevalent for a long period of time, fails to qualify as a fundamental economic practice.[13]

On the other hand Public Knowledge, which supports a narrow scope of eligibility, made very similar recommendations:

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11 IEEE, p. 3.
12 Schwegman Lundberg & Woessner, p. 2.
13 Howard IP Law Group, 6. Mr. Rosenthal of Howard IP provided the most detailed analysis and recommendations of all of the submitters on this point, including suggestions for specific requirements that a single reference must show that an idea is fundamental, that the reference must be at least 25 years old, and that single prior art reference should be a source of high reliability, such as a textbook or a publication in an academic journal in the relevant field of finance, business or economics. See, Howard IP Law Group, p. 3. The logic of these recommendations is clear: if an idea is indeed **"**fundamental**"** then it is entirely reasonable to expect that it is stated in its entirety in at least one, if not many, references**—**similar to the requirement that an anticipatory references must disclose all elements of the claim.

> The Court consulted and cited several texts describing the area of practice in which the idea is used, including a history article on economics, an academic article, and an economics textbook. These references gave the Court support for concluding that the concepts identified in the previous step, such as "intermediated settlement," were drawn to an abstract idea. Following the Court's example, the PTO should instruct examiners to also consult foundational texts to establish whether an idea is fundamental to an area. If the idea is "taught in any introductory finance class," a "building block" of a field of study or practice, or one of "long-standing" use, then the idea is most likely fundamental and thus abstract."

A related aspect of this question is whether methods of organizing human activities are "abstract ideas." Several commentators made the exact same argument--that *Alice* Court did not say that all methods of organizing human activities were abstract ideas.[14] Rather, the Court made mention of "methods of organizing human activities" to defeat Alice's argument that abstract ideas must be "pre-existing, fundamental truths" that exist independently of human action: "Although hedging is a longstanding commercial practice, it is a method of organizing human activity, not a 'truth' about the natural world . . . the Court [in *Bilski*] grounded its conclusion that all of the claims at issue were abstract ideas in the understanding that risk hedging was a 'fundamental economic practice.'"

The Interim Guidance made a slight change from the Preliminary Instructions to address this issue, by stating that "certain methods of organizing human activities" (emphasis added) are abstract ideas, to avoid suggesting that "all" such methods are ineligible. But that does not fully address the problem, and indeed may exacerbate it. The use of the adjective "certain" gives no useful instruction to the examiners—it says no more than "some methods" are ineligible, without saying how to identify which methods. As noted by the commentators, the only instruction from the Court is that it is those methods which are themselves already "fundamental building blocks" as in *Bilski*. As an example, a method of making ice cream sundaes by mixing ice cream and toppings on chilled blocks of granite is a method of organizing human activities that is not "fundamental" or "abstract."

The Office should revise the Guidance to specifically address the interpretation of "abstract ideas" as being fundamental, and advise examiners to demonstrate such fundamental status by proper citation to authoritative references. In numerous interviews since the Interim Guidance was published, Examiners take the position that they need not cite any reference or evidence at all in support of their "conclusion" that the claim is directed to a fundamental business practice or an abstract idea. This leaves the applicant with being able to do little more than say "No, it's not." The upshot is that Step 2A is transformed from a real "test" of *whether* the claim is directed to an abstract idea, to merely a step of *identifying* the abstract idea in the claim—essentially begging the question of Step 2A entirely, and contradicting the clear instruction of the Supreme Court.

[14] This analysis was made independently by Schwegman, Trading Technologies, Sachs, Tryzna, and Werking.

The Office should explain to examiners precisely how to establish which "certain" methods of organizing human activity are ineligible, and if it cannot, then it should remove the alleged category entirely.

C. The Preemption Requirement

Preemption is the core concern that drives the Court's "exclusionary principle." The Supreme Court in *Alice* stated:

> We have described the concern that drives this exclusionary principle as one of pre-emption. See, e.g., *Bilski* (upholding the patent "would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea"). Laws of nature, natural phenomena, and abstract ideas are ""the basic tools of scientific and technological work.""[15]

> Patents on "building blocks of human ingenuity" "would risk disproportionately tying up the use of the underlying" ideas, and are therefore ineligible for patent protection."[16]

Again, many of the commentators on the June 2014 Preliminary Guidance identified preemption as a primary concern that must drive the patent eligibility analysis, including parties on opposite sides of the patent eligibility debate: ACLU, AIPLA, BSA IEEE, Microsoft, Public Knowledge, Trading Tech, and six law firms and individuals. The Interim Guidance only mentioned preemption as result from the examiner identifying claim elements that "amount to significantly more than that exception," rather than the core inquiry that drives the entire eligibility analysis.

For example, both the ACLU and Public Knowledge, supporters of narrow eligibility scope, noted the importance of preemption:

> Public Knowledge: Preemption is the guide star that "undergirds our § 101 jurisprudence," and the PTO's guidance must reflect that strong holding." In particular, the PTO should advise that (1) examiners should apply the Court's preemption doctrine in evaluating patent claims involving abstract ideas.[17]

> ACLU: While preemption of substantially all practical applications would demonstrate a lack of an invention, the analysis requires looking at what is preempted in relation to the contribution of the inventor.[18, 19]

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[15] *Alice*, 134 S. Ct. at 2354.
[16] *Id*., at 2354-2355. (internal quotations and citations omitted).
[17] Public Knowledge, p. 6.
[18] ACLU, p. 3.
[19] To be fair, the ACLU and Public Knowledge take a very different approach from the broad eligibility supporters as to how to evaluate preemption; they would ignore for example, the availability of alternative implementations as evidence of non-preemption. See ACLU, p. 3-4, Public Knowledge, p. 6. My point here is narrower: merely to show that preemption was identified as a key issue that was overlooked by the Interim Guidance..

Supporters of broad eligibility made similar observations:

> Muskin & Farmer: When determining whether a claim is directed to an abstract idea, the examiner should be instructed to consider the preemptive effect of the claim.[20]
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> Howard IP Law Group: We recommend that the instructions advise Examiners that the underlying basis for Part 2 of the analysis is the Supreme Court's overriding concern of avoiding preemption of the use of the abstract idea implemented in computer technology. Conversely, if the technological recitations leave open the practice of the abstract idea using alternative technologies, then the claim is patent eligible.[21]
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> Trading Technologies: The Preliminary Instructions are devoid of any discussion of the central, motivational role that preemption analysis plays in the Mayo framework or even an indication that such analysis should be given weight…. Part 1 requires (a) first identifying the abstract idea and (b) then determining if the claim, as a whole, appears to in practical effect pre-empt (that is, forecloses or nearly forecloses) the abstract idea.[22]

The evaluation of preemption must guide the Step 2B determination. This in turn depends on looking at scope of the claims "in practice". The *Alice* Court stated:

> We have described step two of this analysis 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."[23]
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> Thus, if a patent's recitation of a computer amounts to a mere instruction to "implemen[t]" an abstract idea "on . . . a computer," *Mayo*, supra, at ___, 132 S. Ct. 1289, 182 L. Ed. 2d 321, 337), that addition cannot impart patent eligibility. This conclusion accords with the preemption concern that undergirds our §101 jurisprudence.[24]

The attention to what happens "in practice" is necessary to distinguish between claims that in fact preempt fundamental building blocks and those that "pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws."

In *Alice*, the Court's identification of the abstract idea of intermediated settlement and *Alice's* acknowledgement at oral argument that the software implementation was not significant provides the necessary insight into what the Court meant by "generic functions."[25] To

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[20] Muskin & Farmer, p. 5.
[21] Howard IP Law Group, p. 3.
[22] Trading Technologies, p. 3 (emphasis in original).
[23] *Alice*, 134 S. Ct. at 2355 (emphasis added).
[24] *Id*., at 2358 (emphasis added).
[25] At the oral argument for Alice, Justice Kennedy asserted that a second-year college class in engineering could program Alice's invention over a weekend, "that would be fairly easy to program," to which Alice's counsel Carter Phillips replied "I don't disagree with it," Transcript of Oral Argument at 5, Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 573 U.S. ___ (2014) (No. 13-298) and then later "Well, that's absolutely, I'm certain that's true." Id. at 12.

the Court the claimed steps—creating shadow accounts, obtaining data from the exchange institutions, updating records and transmitting instructions—were the essential steps of intermediated settlement, and thus recited the abstract idea. Turning to Mayo step two, the Court viewed these steps as entirely co-extensive with whatever was being done by the computer implementation, which it considered to be trivial: at oral argument, Alice essentially admitted this to the Court, agreeing that it "would be fairly easy to program" and could be done in a weekend. Similarly, the system claims recited elements that appeared to the Court to be entirely generic: various "input means," "data storage means," and "data processing means." To the Court, the collapsing of the claim elements with the basic computer functions and components meant that the patent claim was a "mere instruction" that implemented the idea on a computer, since it necessitated only the generic capabilities of a computer to perform steps that were "conventional" and "routine." To the Court this meant that the claim would "in practice" preempt all others from implementing the abstract idea. Thus, Alice's patent claim was ineligible not because it was implemented using the generic functions of storing data, transmitting data etc. Rather, it was ineligible because these generic functions were the only thing necessary to "practice" the steps of the abstract idea itself. In short: there was no daylight between the abstract idea and the claimed implementation. That is what Judge Lourie meant in his plurality opinion in CLS when he said that "the animating concern is that claims should not be coextensive with natural law, natural phenomenon, or abstract idea".[26]

Understood in this way, examiners can more readily evaluate whether particular claims are a "mere instruction" to implement an abstract idea on a computer. Instead of focusing on whether a generic computer is disclosed as the underlying structure for a computer implemented invention—which is surely the case in the vast majority of software patent applications—examiners should focus on whether a patent claim recites elements that differentiate it from other ways of practicing of the same abstract idea.[27] Specifically, if the claims at issue recite an implementation of an abstract idea that includes elements that are meaningfully different from other implementations, then those elements are "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." As a result, such a claim is not coextensive with, and does not preempt the all practical applications of an abstract idea.

D. The Use of a Generic Computer

The nature of a "generic computer" is entirely overlooked by both the courts and the Office. This is a non-trivial question. The vast majority of the software industry develops software applications—and thus inventions—for execution what could be characterized as "generic computers. That is not a damning admission: it is a direct result of the very nature of the stored program computer architecture, the architecture designed by Alan Turing, John von Neumann and others that revolutionized the computer industry. The stored program architecture makes it possible to embed innovative functionality in the software, instead of the hardware of the machine. To turn this fundamental and valuable property of modern computer design against

[26] *CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 717 F.3d 1269, 1281 (Fed. Cir. 2013) (Lourie, J.)
[27] To be clear, the suggestions made in this paragraph are opposed by ACLU, Public Knowledge and other supporters of narrower scope of eligibility.

the patent eligibility of software is to turn the entire enterprise of software innovation upside down.

The Supreme Court and the current Federal Circuit have failed to recognize this fact. Rather, the original Federal Circuit under the lead of Judge Giles Rich, did indeed recognize this reality, in *In re Alappat.*[28] The court there stated that "Alappat admits that claim 15 would read on a general purpose computer programmed to carry out the claimed invention, but argues that this alone also does not justify holding claim 15 unpatentable as directed to nonstatutory subject matter. We agree. We have held that such programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." Since the Supreme Court has not overruled *Alappat*, the Office should adopted this precedential holding as good law and instruct examiners accordingly.

A final clarification on this point is called for in view of the current practice of many examiners in making § 101 rejections. The *Alice* Court did not hold that implementing a process on a generic computer makes it abstract. Rather, the question of whether the claim calls for merely a generic computer is address only after it has been determined that the claim is directed to an abstract idea--not as part of that determination. Concluding that a claim is abstract because it is implemented on a generic computer is a logical fallacy. However, this is precisely the argument that many examiners use in their § 101 rejections. The Office must make absolutely clear to examiners that this is not a proper basis for rejection, and that implementing a process on a generic computer does not make the underlying idea "abstract."

II. Interim Guidance: Summaries of Patent Eligibility Cases

The Interim Guidance provides succinct summaries of various Supreme Court and Federal Circuit decisions. As explained by the Office at the January 21, 2015 Patent Eligibility Forum, these summaries were provided as an initial attempt to give examiners examples and explanations of eligible and ineligible claims.

While a laudable and creative effort, there are several problems with this approach. As acknowledged by the Office at the Patent Eligibility Forum, the case law is "apparently inconsistent." Yet, the Interim Guidance does not admit that this fact, and instead presents the cases as if they are all consistent with each other. This creates a false impression in the minds of the examiners that the evaluation of patent eligibility is a precise and deterministic exercise—as evidenced by the "eligibility flowchart."

Worse, it overlooks the fact that statements made in cases such as *Parker v. Flook* or *Alice*, can be easily used to demonstrate that presumptively eligible claims in *Diamond v. Diehr* are ineligible. For example, Alice's prohibitions on well understood, routine and conventional steps, and Flook's exclusion of pre-solution ("data gathering") and post-solution activity eliminate all but the "repetitively calculating" and "comparing" steps, since it was found by the examiner and

[28] 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc).

the Board that the rests of the steps of the claim were conventional.[29] The claim was directed to the abstract idea of using a mathematical algorithm, the Arrhenius equation, to control a chemical process. This abstract idea was implemented on generic computer, claimed only at the highest level of generality, without identifying any inventive hardware. Thus, the claim should have been ineligible.

As another example, the Interim Guidance contains very superficial discussions *of O'Reilly v. Morse* and *Tilghman v. Proctor*, referring how Morse's "claim 8 recites the use of electromagnetism without limits on the machinery for recording, which was found ineligible," while Tilghman's claim "is directed instead to a particular mode of bringing about the desired chemical union, i.e., by heating the water under such pressure that the water does not become steam, and accordingly was found eligible." The problem is that the claims were essentially identical in their structure, both claiming obtaining a desired result by a generic mode of operation.

Morse's Claim	Tilghman's Claim
the essence of my invention being **the use of the motive power of the electric or galvanic current [***generic mode of operation***]**, which I call electro-magnetism, however developed, **for making or printing intelligible characters, signs, or letters, at any distances**, [*desired result*]	I claim as of my **invention the manufacturing of fat acids and glycerine from fatty bodies** [*desired result*] by **the action of water at a high temperature and pressure**. **[***generic mode of operation***]**

These cases are simply inconsistent if they are read as cases about patent eligibility. Properly understood, these are cases about enablement: what separates them is that in *Morse*, the Court found that Morse "claims what he has not described in the manner required by law." In *Tilghman*, on the other hand, the Court found that Tilghman "specifies the means he uses in a manner so full and exact that any one skilled in the science to which it appertains can, by using the means he specifies, without any addition to or subtraction from them, produce precisely the result he describes."[30] These cases should be removed from the Interim Guidance.

Similarly, the Interim Guidance includes a summary of *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, and states "The claim practically applies the mathematical formula to configure a particular antenna and thus was found eligible." Not so fast. This was not about patent eligibility. The Court expressly stated that "We assume, without deciding the point, that this advance was invention, even though it was achieved by the logical application of a known scientific law to a familiar type of antenna." While the Interim Guidance comes to the "right" conclusion (claims eligible) it nonetheless misstates what the Court held.

[29] 450 U.S. 175, 208 (1972).
[30] See R. Sachs, *Patent Eligibility: The Historical Cases*, at http://www.bilskiblog.com/blog/2013/05/the-historical-cases.html for further details of this analysis.

III. Hypothetical "Abstract Idea" Claim Examples

In the Abstract Idea Examples the Office provided hypothetical claims based on various Federal Circuit cases, along with analysis of the cases. Creating hypotheticals from existing cases has perverse outcomes. For patent claims that were in fact eligible, such as in *RCT v. Microsoft*, and *SiRF Technology Inc. v. International Trade Commission*, the hypotheticals add limitations to the claim that were not present in the original. This makes the presented claim narrower and less broad—implying incorrectly that the original claim was not eligible.

RCT: Actual Claim	USPTO's Hypothetical Claim
A method for the halftoning of gray scale images by utilizing a pixel-by-pixel comparison of the image against a blue noise mask in which the blue noise mask is comprised of a random nondeterministic, non-white noise single valued function which is designed to produce visually pleasing dot profiles when thresholded at any level of said gray scale images	1. A computer-implemented method for halftoning a gray scale image, comprising the steps of: generating, with a processor, a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels; storing the blue noise mask in a first memory location; receiving a gray scale image and storing the gray scale image in a second memory location; comparing, with a processor on a pixel-by-pixel basis, each pixel of the gray scale image to a threshold number in the corresponding position of the blue noise mask to produce a binary image array; and converting the binary image array to a halftoned image

SiRF Technologies: Actual Claim	USPTO's Hypothetical Claim
A method for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising: providing pseudoranges that estimate the range of the GPS receiver to a plurality of GPS satellites;	A method for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising: calculating pseudo-ranges, at a mobile device comprising a GPS receiver, a microprocessor, a display, and a wireless communication transceiver, by averaging PN codes received

providing an estimate of an absolute time of reception of a plurality of satellite signals; providing an estimate of a position of the GPS receiver; providing satellite ephemeris data; computing absolute position and absolute time using said pseudoranges by updating said estimate of an absolute time and the estimate of position of the GPS receiver.	by the GPS receiver from a plurality of GPS satellites; wirelessly transmitting the calculated pseudo-ranges from the mobile device to a server, wherein the server comprises a central processing unit (CPU); calculating, by the server CPU, absolute time that the PN codes were sent from the GPS satellites to the GPS receiver using the pseudo-ranges and an estimated position of the GPS receiver; using a mathematical model to calculate, by the server CPU, absolute position of the GPS receiver based on the pseudo-ranges and calculated absolute time; transmitting the absolute position from the server to the mobile device; and displaying a visual representation of the absolute position on the display of the mobile device.

In both cases, there are significant differences between the actual claim found eligible and the much narrower hypothetical claim. For example, the actual claim in RCT is directed to the single step of a pixel-by-pixel comparison, whereas the hypothetical lards in additional steps of generating a mask, storing the mask, and converting a received image. Similarly, the hypothetical claim in *SiRF* adds steps of wirelessly transmitting, and the Office's favorite "displaying." All these extra steps improperly interprets and narrows the cases and misguides the examiners into thinking that only such narrower claims are eligible with similar steps are eligible.

Further, the analysis of *RCT v. Microsoft Corp* completely mischaracterizes the decision. The Office states “Since the mathematical operation of generating a blue noise mask is recited in the claim, the claim is “directed to” a judicial exception.” This is *precisely the opposite* of what the court held: “In that context, this court perceives nothing abstract in the subject matter of the processes claimed in the ’310 and ’228 patents.” and “These algorithms and formulas, even though admittedly a significant part of the claimed combination, do not bring this invention even close to abstractness.” *RCT* should have been discussed as a case where the court found the claims to not be abstract at Step 2A, not a case where they found “something more” in Step 2B. By incorrectly summarizing the case, the Office improperly suggests to examiners that a practical and specific use of mathematical algorithms to generate a real world output is an abstract idea.

Similarly, the Office gets *SiRF Technology Inc. v. International Trade Commission* wrong by saying that the claims here were also directed to an abstract idea. The *SiRF* court did not find that patent claims were abstract—indeed, the word "abstract" does not even appear in the court's opinion. Rather, the opinion is properly interpreted as holding that the claims were not abstract to begin with because:

> Pseudoranges, which are the distances or estimated distances between satellites and a GPS receiver, can exist only with respect to a particular GPS receiver that receives the satellite signals….It is clear that the methods at issue could not be performed without the use of a GPS receiver; indeed without a GPS receiver it would be impossible to generate pseudoranges or to determine the position of the GPS receiver whose position is the precise goal of the claims.

In short, like *DDR Holdings*, "The court did not clearly indicate whether the claim was directed to one or more of these proposed abstract ideas," and "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of [computer] satellite networks." Here too, mischaracterizing the court's reasoning falsely leads examiners to believe that calculating GPS positions or other similar data is inherently abstract, when the court made no such finding. This is prejudicial to applicants, and the Office should revise the analysis to correctly reflect the court's reasoning.

As to the ineligible claim examples, the explanations of the court decisions are very thin, as compared to the eligible examples. This, of course, makes sense, since the underlying explanations by the courts are typically very sparse, offering little in the way of any actual reason why particular limitations were insufficient. For example, with respect to *SmartGene v. Advanced Biological Laboratories*, the form of the claim is commonly found in expert system patents, with a recitation of specific databases and the use of the data to determine a specific result ("ranked list"); there was no explanation in the court's opinion, and none here why the specifically claimed databases were insufficient. The treatment of *Cyberfone* is even less useful: there is only a terse mention of what would be Step 2A ("the ideas of collecting information…") and no explanation whatsoever of why claimed steps failed Step 2B.

The Interim Guidance lists both *Planet Bingo, LLC. VKGS, LLC*, and *SmartGene v. Advanced Biological Laboratories* in support of examples of alleged abstract ideas. Both of these cases are non-precedential, and therefore they are not binding law that governs the examiners. While citation to non-precedential holdings is permissible in litigation, because judges are sophisticated enough to properly consider them as merely persuasive authority, examiners who have no legal training see these citations as binding rules governing not just the facts of those specific cases, but extending to all inventions in the identified example categories of "managing a bingo game" and "comparing new and stored information using rules to identify options."

For example, in one recent interview, the examiner referenced the Interim Guidance's mention of "comparing new and stored information and using rules to identify options," which identifies *SmartGene* as the source of that restriction. As counsel for the patentee ABL in this case, I had to point out to the examiner that the Federal Circuit's holding was non-precedential and not nearly so general, and was instead based on the finding that the claims recited mental steps performed

by a doctor; thus the decision was not anything close to a holding that all claims for comparing information using rules were ineligible. In another recent interview, an examiner handling an application in casino gaming cited the *Planet Bingo* case, and was likewise not aware that the decision was non-precedential and thus not binding on the Office. Even if *Planet Bingo* was precedential, the holding of that case cannot simply be extended to claims for any and all games.

These examples demonstrate the problem with the Interim Guidance: broadly constructed "categories" of allegedly abstract ideas that the examiners will take very literally without any consideration of the underlying facts or legal status of Federal Circuit decisions. Because this may lead examiners to improperly reject, without legal authority, eligible claims in these fields, the Guidance should be revised to remove the references and discussion of *Planet Bingo* and *SmartGene*.

More generally, the inevitable result of these problems is that the Interim Guidance gives the examiners grounds that can be improperly extended to reject otherwise eligible claims simply because they appear similar to the ineligible claim examples (including non-precedential examples). And the various examples suggest to examiners that they need only provide the thinnest of explanations (or no explanations at all) as to the basis of the rejection: after all, if the Office is providing these "training" examples, then examiners can properly assume that the explanations here are proper in form and completeness, and should be followed. This subtly but unmistakably shifts the burden to the applicants to "prove" that a claim is ineligible, rather than properly requiring examiners do show that a claim is not eligible.

IV. Final Observations

The Office should clearly inform that examiners that the case law is not consistent, and it is precisely for this reason that they should "tread carefully" when considering a § 101 rejection, and therefore strictly comply with the requirements for evidentiary support and detailed, logical and technically accurate reasoning and analysis. The Office empowers the examiners to make reasoned judgments in obviousness, enablement, and indefiniteness where there are often contradictory positions based on complex legal and technological arguments; the Office should equally trust examiners to deal with the complexity of patent eligibility, rather than pretend that the framework is perfectly logical.

In particular, the Interim Guidance lists as examples of limitations that are not "significantly more" "Adding insignificant extrasolution activity to the judicial exception, e.g., mere data gathering in conjunction with a law of nature or abstract idea;" and "linking the use of the judicial exception to a particular technological environment or field of use." However, acknowledging the inconsistency and contradictions in the case law also gives the Office the tools and transparency to use its own technological expertise to better interpret the cases in line with how inventors actually invent. The Office should clarify that rules that discount pre- and post-solution activity and limitations to technological fields should not be used indiscriminately, since they inconsistent with how the inventors actually go about the business of inventing—indeed these types of limitations are often part of the "inventive concept" that examiners are supposed to identify in Step 2B.

For example, an inventive concept can come from an inventor identifying, from potentially thousands of variables, which ones are important to solving a known problem and which are not. This is common in many of the sciences, where there are many possible factors or variables that causally control a physical process, and it takes inventive skill and contribution to formulate a theory that explains the physical process as dependent on a very specific subset of these factors. *Per se* rejections of limitations that specify the particular data to be gathered for a particular algorithm or process completely ignores this fact, and discounts entirely the inventive contribution made by identification of the relevant variables. This undermines research into every possible field of human endeavor.

Similarly, pre-solution activity provides a new way of obtaining data for use in an existing algorithm, or specific "pre-processing" steps that beneficially transform the data so that it can be more efficiently used. This was the case in *Arrhythmia Research Technology Inc. v. Corazonix Corp*, where the court found that pre-processing of the electrocardiographic signal was a "critical feature of the Simson invention."[31] A rule against post-solution activity likewise improperly disregards situations where the inventive concept is the new use of results of a known algorithm, or a new way of presenting the results. There are many patents based on these kinds of inventive contributions.

A rule against field of use limitations also has unintended consequences. One of the most powerful forms of invention is to apply knowledge developed in one field to an entirely different and unrelated field. "Transforming concepts from one form into another can yield discoveries in any field."[32] The inventive contribution comes from realizing that a particular mechanism used in one field of technology solves a problem in a different field of technology. In such cases, a limitation that substantively restricts the application of an existing solution to a new field should be acceptable and should not be ignored for purposes of patent eligibility—specifically if it is desired to encourage this type of cross-disciplinary innovation.

Not surprisingly, experienced examiners often suggest that applicants to add these kinds of limitations to claims precisely to make them allowable, since they know—as scientists and engineers—that they often best capture the core inventive contribution and thereby prevent the claim from reading on, i.e., "preempting," the prior art references which disclose other ways of practicing the abstract idea. To turn these essential approaches to invention into rules against patent eligibility is to deny the very nature of human creativity.

[31] 958 F.2d 1053, 1055 (Fed. Cir. 1992).
[32] Robert and Michele Root-Bernstein, *Sparks of Genius: The 13 Thinking Tools of the World's Most Creative People*, 286 (1999).

Sincerely,

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