

January 18, 2017

The Honorable Michelle K. Lee  
Under Secretary of Commerce for Intellectual Property and  
Director of U.S. Patent and Trademark Office  
U.S. Patent and Trademark Office  
600 Dulany Street  
Alexandria, VA 22314  
*Attn: Amy Nelson*

*Via email: 101Roundtable2@uspto.gov*

**Re: Response to Request for Comments Related to Exploring the Legal Contours of Patent Subject Matter Eligibility, 81 Fed. Reg. 71485 (October 17, 2016) Docket No.: PTO-P-2016-0041**

Dear Under Secretary Lee:

The collection of companies identified below (hereinafter referred to as the “R&D Companies” or just “Companies”) appreciates the opportunity to offer comments in response to the U.S. Patent and Trademark Office’s (“USPTO’s”) Request for Comments Related to Exploring the Legal Contours of Patent Subject Matter Eligibility, 81 Fed. Reg. 71485 (October 17, 2016), Docket No.: PTO-P-2016-0041 (hereinafter “the Request”).

### **The R&D Companies**

The R&D Companies comprise a group of U.S.-based companies innovating primarily in the electromechanical and electronic arts that are concerned with the current state of the law with respect to subject matter eligibility. More particularly, the R&D Companies are concerned that the current state of the law is unduly discouraging innovation in some of the most important technical fields of the 21<sup>st</sup> century, namely software and biotechnology, and is harming the stature and future of the United States as the global center for technical innovation.

Below are brief descriptions of each of the R&D Companies.

InterDigital is a U.S.-based company that develops mobile technologies that are at the core of devices, networks, and services worldwide. InterDigital solves many of the industry's most critical and complex technical challenges, inventing solutions for more efficient broadband networks and a richer multimedia experience years ahead of market deployment. InterDigital has licenses and strategic relationships with many of the world's leading wireless companies. InterDigital is one of the most active R&D companies in the wireless industry and has approximately 20,000 patents and patent applications worldwide.

Fallbrook Technologies Inc. is an R&D company that has developed the next generation of mechanical transmission technology providing fuel economy and emissions improvements for cars, trucks, farm and construction equipment, and industrial machinery – while providing improvements both in performance and functionality. Fallbrook has been developing this technology for over 12 years and has licensed it to well-known automotive suppliers. Fallbrook manufactures and sells bicycle hubs with its technology and licenses the technology to others to develop in their respective industries. Fallbrook also provides engineering support to its licensees to assist them in getting their products to market. With a worldwide footprint, Fallbrook has R&D and corporate headquarters near Austin, Texas, manufacturing support in China and sales, service and support in Europe to support its sales to the European bicycle markets, which represent the majority of its sales. While still a startup, Fallbrook has over 800 patents or pending applications in the U.S. and worldwide.

Digimarc Corporation enables governments and enterprises around the world to give digital identities to media and objects that computers can sense and recognize and to which they can react. While Digimarc innovates in the signal processing field generally, it is best known as the pioneer in the field of digital watermarking, which provides reliable and imperceptible identification to many types of objects and entertainment content. Digimarc’s technology is deployed in billions of objects and devices worldwide, in diverse applications such as counterfeit deterrence of banknotes, authentication of ID credentials, fast and reliable identification of consumer package goods, and identification and monitoring distribution of digital content. Additionally, Digimarc licenses its intellectual property for audience measurement, copy protection of movies, digital cinema, and product anti-counterfeiting.

## Comments

### General Comments

The R&D Companies laud this effort to survey the patent community and start a discussion of possible legislative or other actions to resolve the confusion in the current state of the law on patent subject matter eligibility.

Given the focus of the R&D Companies, the most significant concerns relate to the patent subject matter eligibility of inventions in the software, electronic, signal processing, and electromechanical fields (that is, our concerns lie mostly with the “abstract idea” exception to patent eligibility). Accordingly, the R&D Companies will not offer views on the subset of questions that specifically or substantially concern inventions in the life sciences fields (most notably, the “laws of nature” and “natural phenomena” exceptions), but will leave those matters to others more familiar with the special issues attendant to those technical fields. Furthermore, the R&D Companies are not prepared to offer a proposal for specific legislative language at this time because they feel it is premature insofar as specific legislative language must be preceded by a consensus on the broader public policy issues and the desired result. Accordingly, the following comments are substantially directed to addressing these more fundamental, initial public policy issues.

In view of the concerns and issues noted above, in the following sections the R&D Companies respond to the Request with comments organized in accordance with the primary themes set forth in the notice (as opposed to providing a separate and distinct response to each question

posed in the Notice). The specific questions to which the comments in each sub-section below are responsive are identified in the italicized paragraph appearing directly below each sub-section heading.

## **Specific Comments**

### **I. The “Abstract Ideas” Exception to Patent Eligibility is Unworkable, Unnecessary, and should be Legislatively Abolished**

*The remarks in this section generally address the following areas set forth in the Notice: (a) “Impact of Judicial Interpretation of Section 101” (particularly question 1 -How has the Supreme Court’s interpretation of 35 U.S.C. 101 affected the enforcement of patents and the development of subject-matter eligibility law?); (b) “Statutory Categories of Patentable Subject Matter” (particularly question 2 -Should the patent statute be amended to further define the statutory categories of invention);(c) Exceptions to Patentable Subject Matter (particularly question 3 -Do you think there should be exceptions to patentable subject matter); and (d) “Patentability of Software/Computer-Related Inventions” (particularly questions 17 and 18 -To what extent should an invention that involves computer software be eligible for a patent and what mechanisms, other than the judicial exceptions, can be used to prevent issuance of overly broad software or computer-related patents that cover wide swaths of economic activity?).*

Through the *Bilski*, *Mayo*, *Myriad*, and *Alice* chain of decisions, the Supreme Court has established a test for patent subject matter eligibility (SME) that has left the state of SME law in disarray and confusion. Specifically, the current law (1) is unworkable because there is no definition of “abstract idea” that is sufficiently precise to serve as a legal standard, (2) is contrary to the actual language of the Patent Act, (3) confusingly conflates SME with obviousness, and (4) is unnecessary in view of the numerous other recent judicial and legislative changes that address overly broad and vague patents.

Accordingly, the “abstract ideas” exception to patent eligibility should be legislatively abolished.

#### **A. Introduction**

##### **1. Background**

Prior to *Bilski* and its progeny (most notably *Mayo*, *Myriad* and *Alice*), the case law on patent eligibility was sparse. The same exceptions to patent eligibility applicable today (natural phenomena, laws of nature, and abstract ideas) existed, but were interpreted fairly narrowly and were sparingly used to strike down patents.

These exceptions are judicially created and have no direct support in the Patent Act. They were originally developed in order to prevent preemption of the basic tools of scientific and technological work and the building blocks of human ingenuity. E.g., *Alice Corp. v. CLS Bank International*, 573 U.S. \_\_\_, 134 S. Ct. 2347, 2354 (2014).

However, even before *Bilski*, the cases dealing with patent eligibility under 35 U.S.C. §101 were almost always controversial and difficult to reconcile with each other. As the Supreme Court expressly recognized in *Alice* and other cases, virtually any invention can be boiled

down to the application of some abstract idea, law of nature, or natural phenomenon. *Alice*, 134 S. Ct. at 2354 (“... we tread carefully in construing this exclusionary principle lest it swallow all of patent law. *Citations omitted*. At some level, “all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas”).

In fact, it would be reasonable to define an “invention” as a new application of a law of nature, natural phenomenon, or abstract idea to solve a problem or achieve a desired result. Hence, determining whether a patent claim is directed to a law of nature, natural phenomenon, or abstract idea is inherently a difficult, if not impossible, task.

Seemingly in response to a perceived increase in frivolous patent lawsuits based on patents with overly broad and/or vague claims, over the past several years defendants began to advance subject matter ineligibility arguments as a less expensive way to fend off such suits than attacking novelty (35 U.S.C. §102), obviousness (35 U.S.C. §103), and claim clarity and breadth (35 U.S.C. §112).

Unfortunately, as will be discussed in greater detail below, SME law in the post-*Bilski/Alice* era has effectively evolved into a watered-down obviousness analysis that allows inventions to be deemed too obvious to patent without having to apply any of the rigor of a true obviousness analysis under 35 U.S.C. §103, such as reviewing prior art, claim interpretation, or rigorous analysis of claim scope or clarity.

To the extent that the perception of frivolous patent suits in the U.S. may be a valid concern, the law of SME simply is not the appropriate mechanism to address the issue. Specifically, regardless of whether the post-*Bilski/Alice* state of SME law has, in fact, reduced the number and cost of frivolous patent suits, it is a blunt instrument that sweeps in as ineligible many patents having technical innovations of value and merit. It is simply the wrong tool for the job, particularly with respect to the “abstract idea” exception because there is no definition of “abstract idea” that is sufficiently precise to serve as a legal standard.

While pre-*Bilski/Alice* SME jurisprudence was often confusing and inconsistent, the exceptions were interpreted rather narrowly and thus were not a focus of attention insofar as it did not affect the vast majority of inventions. However, the post-*Bilski/Alice* SME jurisprudence is adversely affecting large swaths of innovation, including some of the most significant areas innovation in the world today (e.g., biotechnology, life sciences, and software and computer implemented inventions). SME law is no longer relegated to its original purpose of preventing the patenting of the basic tools of human ingenuity, but is being used as an extremely roundabout way of generally addressing patents with allegedly overly broad and/or vague claims. However, the post-*Bilski/Alice* body of SME law (1) is virtually impossible to apply accurately (leaving companies that innovate in the high-tech fields with no way to know if their innovations will be protected by U.S. patent law) and/or (2) sweeps in many meritorious innovations that should be patent eligible (making innovation in the important high-tech fields in the U.S. much less desirable. It also is unnecessary in view of the existence of other statutory provisions that are specifically aimed at preventing the issuance of overly broad and/or vague patents (particularly, 35 U.S.C. §112(a) and (b)) and the recent development of numerous other administrative, judicial and legislative mechanisms calculated to address the issue (e.g., Inter Partes Reviews and a substantial enlargement of the ways by which a patent can be deemed obvious via the Supreme Court decision in *KSR v. Teleflex*, 550 U.S. 398 (2007), among many others).

Finally, the fact that so many patents are being invalidated without a review of the prior art, a comparison of the claims to the prior art, or even claim interpretation being performed is unsettling.

## 2. The Two-Step Subject Matter Eligibility Test

In *Mayo* and continuing through *Alice*, the Supreme Court developed a two-step test for distinguishing patent ineligible concepts from patent eligible applications of those concepts. The first step, largely discussed in section B below, is to consider whether the claims are directed to one of the judicially recognized exceptions to patentability, namely, abstract ideas, laws of nature, or natural phenomena.

If so, then the second part of the test is to determine “whether the claims do significantly more than simply describe these natural relations” i.e., whether additional elements considered separately or as an ordered combination “transform the nature of the claim” into “a patent-eligible application” of the judicial exception. *Mayo Collaborative Services v Prometheus Laboratories*, 566 U.S. \_\_\_, 132 S. Ct. 1289, 1297-8, (2012).

### B. “Abstract Idea” as a Category of Ineligible Subject Matter is Unworkable

Regardless of any policy rationale for why certain types of inventions should not be patent eligible, the “abstract idea” exception to patent eligibility is simply unworkable. There is no definition of “abstract idea” that is sufficiently concrete to be applied as a legal standard. Almost by its nature, “abstract idea” is vague and indefinable. The Supreme Court essentially acknowledged this fact in the *Alice* decision:

At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law. *Mayo*, 566 U.S., at \_\_\_ (slip op., at 2). At some level, “all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas”. *Id.*, at \_\_\_ (slip op., at 2). Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept. *Alice*, 134 S. Ct. at 2354.

Even in the *Alice* decision itself, the Supreme Court did not even try to define what made something an “abstract idea”.

In any event, we need not labor to delimit the precise contours of the “abstract ideas” category in this case. It is enough to recognize that there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement at issue here. Both are squarely within the realm of “abstract ideas” as we have used the term. *Alice*, 134 S. Ct. at 2357.

The above quote reflects the Supreme Court’s entire analysis under the first part of the SME test, i.e., whether the invention was an “abstract idea”. Thus, in the *Alice* decision itself, the Supreme Court demonstrated the danger of the concept by failing to provide a reasonable definition of the abstract concept and application of the facts at issue to that definition, to provide guidance on its jurisprudence, but instead avoided the analysis and simply referred to a similarity of the concept of the invention in *Alice* to the invention in a preceding case (*Bilski*) and then declared that similarly the invention in *Alice* must also be deemed abstract.

Certainly, it is part and parcel of the practice of common law to compare factual situations in pending cases to fact patterns of previously-decided cases to find similarities that would

cause the logic behind the decision of the previous case to be applicable to the pending case. However, this is done with an accompanying explanation of why the similarities between the fact patterns are sufficiently relevant to dictate a similar result. Rarely do courts simply look for similarities between fact patterns without a critical analysis of the relevance of the similarities of those facts to the issue that is being decided. However, that is exactly what the Supreme Court did in *Alice*, thereby evidencing the intractability of defining an “abstract idea”.

Unfortunately, this is now what the USPTO and many lower courts are doing. For instance, a comparison to precedential Supreme Court and Federal Circuit cases is the fundamental principle behind the USPTO’s Guidelines for Examiners with regard to SME determinations.

As noted above, it is entirely proper to compare the fact patterns of earlier precedential cases to a present matter when the comparison is used as exemplary support for a logically reasoned decision (to show that the logic applies the same way to the facts of the pending case). However, in many instances, that is not how subject matter eligibility issues are being decided. Increasingly, decisions are being made almost solely on the similarity of technologies without explicit analysis to support the decision/result. And, given the intractable task of determining what is and is not an “abstract idea” with no reasonable definition thereof, this is not surprising. It is impossible to define “abstract idea” with sufficient certainty to serve as a legal standard for anything, let alone the important determination of whether an invention is patent eligible.

There is no definition of “abstract idea” that provides the type of reasonable certainty that allow businesses to make decisions based on what is or is not patentable. Thus, many decisions in the field of SME are irreconcilable because there is no critical logical framework for determining what is and is not patentable. At the first USPTO Roundtable discussion held in accordance with the Request on November 14, 2016, it was clear that practitioners feel that many patent examiners do not understand the post-*Bilski/Alice* SME law. E.g., *Alice Rejections Frustrating Patent Applicants, USPTO Told*, IP360, November 15, 2016. To whatever extent this may be true, examiners should not be faulted since, at the second USPTO Roundtable discussion held in accordance with the Request on December 5, 2016, it was clear that many practitioners, judges, and inventors also believe that the jurisprudence with respect to what is or is not an “abstract idea” for purposes of patent eligibility is confusing and in many cases seems irreconcilable.

Furthermore, although the Federal Circuit has recently found that some patents are not directed to abstract ideas (see *Enfish, McRo*), it has conceded that there is no reasonably precise definition of the “abstract idea” exception. Discussing the “abstract ideas” exception in the *AmDocs* case, the Federal Circuit said:

Whether the more detailed analysis is undertaken at step one or at step two, the analysis presumably would be based on a generally-accepted and understood definition of, or test for, what an ‘abstract idea’ encompasses. However, a search for a single test or definition in the decided cases concerning § 101 from this court, and indeed from the Supreme Court, reveals that at present there is no such single, succinct, usable definition or test. The problem with articulating a single, universal definition of ‘abstract idea’ is that it is difficult to fashion a workable definition to be applied to as-yet-unknown cases with as-yet-unknown inventions. That is not for

want of trying; to the extent the efforts so far have been unsuccessful it is because they often end up using alternative but equally abstract terms or are overly narrow (*footnote omitted*).

Instead of a definition, then, the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided. See, e.g., *Elec. Power Grp.*, 830 F.3d at 1353–54. That is the classic common law methodology for creating law when a single governing definitional context is not available. See generally Karl N. Llewellyn, *The Common Law Tradition: Deciding Appeals* (1960). This more flexible approach is also the approach employed by the Supreme Court. See *Alice*, 134 S. Ct. at 2355–57. We shall follow that approach here.

*AmDocs (Israel) Ltd v. Openet Telecom, Inc.*, No. 2015-1180 (Fed. Cir. Nov. 1, 2016), slip opinion at 9.

The end result of the post-*Bilski/Alice* SME law with respect to the “abstract ideas” exception is that no one really knows what an “abstract idea” is. Therefore, no one really knows what is patent eligible in the technical fields that involve software and computer implemented inventions, which is basically the vast majority of the high-tech field because so much of the innovations occurring in these fields are implemented at least partially via software. Furthermore, the establishment of its test and the “abstract” element ignores and frustrates the Court’s own jurisprudence on discoveries, the patentability of which it recognizes is clear in the Patent Act. The current state of the law with respect to the patent eligibility of inventions in the high-tech fields is in disarray and the “abstract ideas” exception should be abolished because, *inter alia*, it is inconsistent with the Patent Act and too imprecise of a rule to be fairly and consistently applied. As demonstrated at the first USPTO Roundtable discussion, this is a widely held belief among patent system stakeholders.

**C. The Second Part of the Test Conflates Subject Matter Eligibility (§101 of the Patent Act) with Obviousness (§103 of the Patent Act), which is Unreasonable, Unworkable, and Unfair**

As noted above, the second part of the test is to determine “whether the claims do significantly more than simply describe these natural relations” i.e., whether additional elements considered separately or as an ordered combination “transform the nature of the claim” into “a patent-eligible application” of the judicial exception. *Mayo*, 132 S. Ct. at 1297-8.

This second question has often been described as a “search for something more” (than the abstract concept). In *Alice*, the Supreme Court explained:

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. *Alice*, 134 S. Ct. at 2355.

and

At ... step two, 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. *Citations omitted*. 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*, 134 S. Ct. at 2357-8.

The Supreme Court expressly noted that simply applying the claimed abstract idea was not sufficiently more so as to cause an ineligible abstract idea to become eligible. The Court stated that “simply implementing a mathematical principle on a physical machine, namely, a computer, is not a patentable application of that principle”, “[n]or is limiting the use of an abstract idea ‘to a particular technological environment’” enough to render a claimed abstract idea patent eligible.

In *Alice* and most, if not all, subsequent lower-court decisions including Federal Circuit decisions, this second question has essentially devolved into an obviousness analysis, but without reference to, or the rigor of, a proper obviousness analysis under §103 and the voluminous case law developed thereunder.

It is common for a court decision determining lack of SME (i.e., which requires a finding that the claims are directed to an “abstract idea” and fail to recite an “inventive concept” sufficient to transform the abstract idea into a patent-eligible application) to (a) find all asserted claims of the patent ineligible, (b) to not reference any significant documentation of the prior art, (c) to not involve any formal claim interpretation (e.g., a *Markman* hearing), and (d) to not involve any analysis of claim scope or clarity under §112<sup>1</sup>.

In addition, courts often find any concept found in the claim that is well-known (i.e., not novel) to be an “abstract idea”, without consideration as to whether that concept is “abstract” in any true sense of that word. In other words, it is an obviousness decision (i.e., there is nothing “inventive” in the claim beside the old idea), but without interpreting the claims or analyzing prior art documents.

This conflation of §101 with §103 set forth in the two-part test of *Mayo* and *Alice* increasingly functions to circumvent the whole body of obviousness law that has been developed over more than one hundred and fifty years to make essentially the same conclusion (obviousness) applying essentially the same criteria, but without any of the rigor of analysis that is required of a proper obviousness determination.

There is a reason why obviousness law is so rigorous. It is because, without that rigor, the results would not be fair, predictable, and reasonable. And that is exactly what we are observing in connection with the recent SME jurisprudence.

The intangible, indefinable (indeed, abstract) nature of “abstract ideas” coupled with the fact that all inventions incorporate abstract ideas at some level, and further compounded with the conflation of SME and obviousness provides an unworkable system for determining what is patent ineligible under this exception. For at least this reason, the “abstract idea” exception has no place in American jurisprudence and should be abolished.

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<sup>1</sup> E.g., one survey showed that, in 2015, motions for lack of patent SME under 12(b)(6), 12(c), and 56(a) were granted as to all claims 55.2% of the time, granted as to some claims 10.3% of the time, denied 30.9% of the time, and resolved on other grounds 3.6% of the time. In other words, of those decisions finding a patent to claim ineligible subject matter, 84% of the time that finding is made as to all considered claims of the patent.



## II. Any Exceptions to Patent Eligibility Should Be Expressly and Narrowly Defined by Statute

*The remarks in this section generally address the following areas set forth in the Notice: “Statutory Categories of Patentable Subject Matter” (particularly questions 4 and 6 -Should the patent statute be amended to define the judicial exceptions and should title 35 be amended to revise the definition for the term “invention” and/or provide a definition for the term “discovery” along with specific examples of subject matter that should not be treated as an invention and/or discovery a la other countries?).*

The Constitution and the Patent Act define no subject matter exclusions to patentability. The current exclusions are entirely judicially created. Furthermore, the exclusions are based purely on public policy and are substantive (as opposed to procedural or judicial). Therefore, if any such exclusions are desirable, it is proper that they be established by the Legislature, and not by the courts.

SME jurisprudence in its current state as developed by and in response to the recent Supreme Court precedent is unacceptably murky for industries that need to have reliable and clear property rights to protect their substantial investments in job-creating businesses. Further, the exclusions are too broad and are, in actuality, excluding patentability of inventions that are valuable, innovative, and difficult and costly to develop. For example, in *Myriad*, the Supreme Court recognized that identifying and isolating the BRCA1 gene was a complex process, but warned that even “[g]roundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry”. *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. \_\_\_, 133 S. Ct. 2107, 2117 (2013). See, also, *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379–80 (Fed. Cir. 2015) (the inventors “combined and utilized man-made tools of biotechnology in a new way that revolutionized prenatal care”, but “the Supreme Court instructs that ‘[g]roundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.’”); see also *id.* at 1381 (Linn, J., concurring: “But for the sweeping language in the Supreme Court’s *Mayo* opinion, I see no reason, in policy or statute, why this breakthrough invention should be deemed patent ineligible”).

Each such invention should be evaluated for patentability on the conventional merits on which inventions have always been measured, such as novelty, non-obviousness, enablement, written description, definiteness and clarity, rather than being excluded from such consideration under a vague and abstract test for eligibility that cannot be fully understood and that is created whole cloth by the judiciary with no statutory reference. At a minimum, given the fundamental threshold nature of subject matter eligibility, the Legislature, not the court, is the appropriate body to decide whether inventions that are admittedly valuable, innovative, and costly to develop are patent eligible. To the extent any exclusions are deemed necessary, they should be legislatively articulated. A well-devised legislative solution that contemplates future areas of innovation can establish concrete ground rules on which companies that are planning to make R&D investments can rely. Conversely, relying on the trajectory of current jurisprudence will engender uncertainty in industry and chill important innovation.

Yet further, what is and is not patent eligible in a particular country will have a significant impact on where research dollars are spent (both geographically and in terms of what technologies it will be spent on). Since, the future wealth of America will depend to a great extent on its technological prowess, particularly in the very fields that are most affected by

the SME exceptions, patent SME is an extremely important issue that warrants legislative action. Moreover, technological advances are occurring at an accelerated rate unprecedented in history (due, in large part, to the very types of developments in software that are subject to attack under the current SME case law), such that the slow process of common law development is ill-equipped to keep pace.

The SME exclusions are negatively impacting companies in the very fields of technology in which valuable innovations are occurring (e.g., genetics, health care, artificial intelligence, signal processing, software). The actual (and continuing threat of) loss or unavailability of patent protection for innovations by the operation of U.S. SME law in some of the most important technological fields moving forward is putting the U.S. at risk of technically falling behind other countries, such as China, Japan, and the countries of the European Union, that have far less expansive and/or far more precisely defined patent eligibility exclusions.

The R&D Companies do not advocate any particular exceptions to patent eligibility, and specifically believe that there should not be any eligibility exception with respect to “abstract ideas” or any exception that calls into question the eligibility of software *per se*. In fact, given the numerous significant patentability requirements under Sections 102, 103 and 112 (as described below), there is usually very little, if anything, that Sections 100 and 101 need to additionally provide when the other requirements of the Patent Act are applied appropriately. However, if the legislature decides that there should be other exceptions for public policy purposes, those exceptions should be narrowly, precisely defined, and vetted through substantial comment and input from all stakeholder groups. Any exception must be narrowly defined so as not to impede innovation in the U.S. except to the smallest extent possible consistent with the policy rationale for the exception. Any exception must be precisely defined so as to permit the public to determine with reasonable certainty what is and is not patent eligible so that businesses and individuals will be able to make well-informed decisions as to where to spend their research and development dollars. Finally, any such exception to SME should be enacted only with the recognition that it likely will reduce the amount of innovation and job-creation occurring in that field in the U.S.

While, as noted previously, the R&D Companies do not herein offer any specific legislative language at this time, the R&D Companies do not perceive that the problems with current SME jurisprudence necessarily relates to the meaning or definitions of the terms “invention” or “discovery” in the Patent Act. As previously noted, the eligibility exceptions are judicially created without any statutory reference. Accordingly, the problem is not necessarily with the definitions of these words in the statute (or lack thereof).

### **III. Whether or Not an Invention Involves Software Should Have No Bearing with Regard to Patent Eligibility**

*The remarks in this section generally address the following areas set forth in the Notice: “Patentability of Software/Computer-Related Inventions” (particularly question 17 -To what extent should an invention that involves computer software be eligible for a patent?).*

Technological development is reaching a point where the vast majority of operations performed by almost every piece of technology that humans come in contact with on a regular basis, e.g., cars, trains, airplanes, telephones, gaming systems, televisions, household

appliances, and office appliances, are performed primarily by software; and that the most important innovations to those devices are typically implemented via software.<sup>2</sup>

Software is a set of process instructions for causing a machine or device to take certain actions that change the state of the machine/device or information. It is essentially a process, and, like any other process that produces a change in the state of something, if it is novel, properly described and claimed in a patent application, and not obvious in view of other pre-existing information, it should be patentable.

Accordingly, any effective patent system, the purpose of which is to “promote the Progress of Science and useful Arts” (United States Constitution, Article 8, Clause 8) should offer protection for such innovations. In fact, the Supreme Court has left little doubt that there is no special patent eligibility rules for software. *Diamond v. Diehr*, 450 U.S. 175 (1981).

Our earlier opinions lend support to our present conclusion that a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer. In *Gottschalk v. Benson* we noted: “It is said that the decision precludes a patent for any program servicing a computer. We do not so hold.” 409 U.S., at 71. *Id.* at 187.

Furthermore, the USPTO and the Federal Circuit have expressly recognized that software and computer implemented inventions are patent eligible.

... it should be recognized that the Supreme Court did not create a per se excluded category of subject matter, such as software or business methods, nor did it impose any special requirements for eligibility of software or business methods. *USPTO’s 2014 Interim Guidance on Patent Subject Matter Eligibility*, Fed. Reg., Vol. 79, No. 241, December 16, 2014, pp. 74618-633.

and

We do not read Alice to broadly hold that all improvements in computer-related technology are inherently abstract and, therefore, must be considered at step two. Indeed, some improvements in computer-related technology when appropriately claimed are undoubtedly not abstract, such as a chip architecture, an LED display, and the like. Nor do we think that claims directed to software, as opposed to hardware, are inherently abstract and therefore only properly analyzed at the second step of the Alice analysis. Software can make non-abstract improvements to computer technology just as hardware improvements can, and sometimes the improvements can be accomplished through either route. We thus see no reason to conclude that all claims directed to improvements in computer-related technology, including those directed to software, are abstract and necessarily analyzed at the second step of Alice, nor do we believe that Alice so directs. Therefore, we find it relevant to ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea, even at the first step of the Alice analysis. *Enfish LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016)

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<sup>2</sup> Notably, many of the most important innovations occurring these days that are not software-based and/or computer-implemented are in the biotechnology areas that also are most adversely affected by the other SME exceptions, e.g., genetics, personalized medicine, etc. Accordingly, the matter of patent SME is both very important and timely for the Legislature to consider.

Also, the special techniques used in the past (and currently) for claiming software and computer implemented inventions, e.g., method claims, means plus function claims, Beauregard claims, programmed processor claims, etc., were not developed due to any question as to the eligibility of software for patenting. Rather, they were developed because software *per se* was deemed not to fall within any of the four forms of patentable inventions enumerated in the Patent Act (namely, “process, machine, manufacture, or composition of matter”, 35 U.S.C. §101), and not due to any public policy in opposition to the patentability of software *per se*. See, e.g., MPEP §2106. Nothing in the legislative history suggests an effort to exclude software. Rather, any problem with software fitting into one of those categories appears to be entirely coincidental, software not yet having become a significant form of technology at the time of passage of the Patent Act. Thus, although related to 35 U.S.C. §101 (via the four categories of inventions set forth therein), the special techniques developed for claiming software and computer implemented invention have nothing to do with the judicially-created “abstract idea” exception at issue presently.

Thus, whether or not an invention involves software should have no bearing on its eligibility for patenting. In fact, the R&D Companies would endorse legislation that expressly clarifies that software and computer implemented inventions are within the categories of patentable inventions (whether it is through clarifying the four existing statutory categories, adding a fifth category, or any other means). No useful purpose is served by making the patentability of a software-related invention dependent on non-substantive claim drafting techniques. In fact, the Supreme Court has consistently admonished against patent eligibility being dependent on the skill of the patent draftsman. E.g., *Bilski* at 187 (“This Court has long “warn[ed] . . . against” interpreting §101 “in ways that make patent eligibility ‘depend simply on the draftsman’s art.’” *Mayo*, supra, at \_\_\_ (slip op., at 3) (quoting *Flook*, 437 U. S., at 593); see *id.*, at 590”).

Hence, if the Patent Act, and particularly §101, is revised, it is appropriate to clarify that whether or not an invention involves software should have no bearing on its eligibility for patenting.

#### **IV. Other Available Means, Especially Sections 102, 103, and 112 of the Patent Act, Are Sufficient to Address Overly Broad and Indefinite Patents**

*The remarks in this section generally address the following areas set forth in the Notice: “Patentability of Software/Computer-Related Inventions” (particularly question 18 -What mechanisms, other than the judicial exceptions, can be used to prevent issuance of overly broad software or computer-related patents that cover wide swaths of economic activity?).*

As previously mentioned, the recent jurisprudence on SME, especially the “abstract ideas” exception is not an appropriate mechanism for combating overly broad and/or vague patents. It is a blunt weapon where extreme precision is necessary for all the reasons set forth above. While it may invalidate many overly broad and/or vague patents, it also will invalidate many patents that are not overly broad or vague (and that should be patent eligible as a matter of public policy). Further, it will miss many other patents that are overly broad and/or vague (just not directed to an “abstract idea”, whatever that is). The problem is that post-*Bilski/Alice* “abstract ideas” SME jurisprudence (especially concerning software and computer-related inventions) does not directly address the policy concerns that should be addressed, namely,

overly broad and/or vague patents and patents that tie up the fundamental tools and building blocks of human ingenuity. *Alice*, 134 S. Ct. at 2354.

The other sections of the Patent Act that more directly address these issues are much better suited to addressing these concerns, as they have done for more than 150 years prior to *Bilski/Alice*. The most notable sections are §102 (novelty), §103 (obviousness), and §112 (claim clarity, claim breadth, written description support, enablement, means plus function, etc.). If those sections of the Patent Act require a bit more effort before determining that an invention is unworthy of patent protection, it is because that is the level of care and analysis that is necessary and appropriate to reach a fair decision. It is a small price to pay for the overall benefit of a strong, fair, and predictable patent system that encourages investment in innovation and the subsequent creation of high-paying, skilled jobs.

As noted previously, a large number of the post-*Bilski/Alice* SME decisions being rendered by courts to invalidate weak patents already are effectively decisions under the other sections of the Patent Act, most notably §103, but without the rigor required of a true obviousness analysis. Accordingly, §103 remains a more effective way to prevent issuance of overly broad software or computer-related patents than relying on subject matter ineligibility.

Of course, §112, which is the section that expressly addresses claim clarity and breadth, also is a very effective tool in preventing the issuance of overly broad or vague patent claims. Specifically, the written description and enablement requirements of §112(a) (formerly §112, first paragraph) and the claim definiteness requirements of §112(b) (formerly §112, second paragraph) have long served the very function of preventing the issuance of overly broad and/or vague patents.

In addition numerous recent developments in patent law and other fundamental changes are aggressively weeding out weak and overly broad patents and/or making the filing of frivolous patent infringement suits more difficult, thereby making the overly broad and ill-fitting approach of post-*Bilski/Alice* SME law unnecessary and cumulative. These developments include:


1. Substantial expansion of the means by which patent claims may be deemed obvious under §103 via the Supreme Court's *KSR* decision, *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), and its progeny;
2. Increased scrutiny of indefiniteness under §112 (*Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. \_\_\_, 134 S. Ct. 2120 (2014));
3. Increased emphasis on written description support in the specification and enablement as separate and distinct requirements of §112 (*Ariad Pharmaceuticals et al. v. Eli Lilly and Company*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc));
4. The new post grant proceedings enacted as part of the America Invents Act (AIA), including Post Grant Review (PGR), Inter Partes Review (IPR), and Covered Business Method (CBM) Procedures, which were established specifically to address weak patents;
5. Significant and continuing improvement of Examiner training at the USPTO, especially with respect to Sections 102, 103, and 112;

6. The AIA amendments to the joinder rules, which have made it nearly impossible to join a plurality of patent infringement defendants together in a single suit, thereby reducing the cost effectiveness of frivolous patent suits;
7. The AIA codification of the unpatentability of tax strategies and human organisms;
8. Recent case law imposing significant restrictions on patent infringement damages;
9. Increasing difficulty for patentees, especially non-practicing entities, to obtain injunctions for patent infringement (*eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006));
10. The decreasing viability of infringement under the doctrine of equivalents after the Supreme Court decision in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002);
11. The weakening of the presumption against finding claims to be non means plus function claims (*Williamson v. Citrix Online, LLC*, 792 F. 3d 1339 (Fed. Cir. 2015));
12. Heightened pleading requirements in patent complaints and other pleadings (E.g., *Ashcroft v. Iqbal*, 556 U.S. 662 (2009), *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544 (2007), the elimination of Form 18 under the changes to Federal Rules of Civil Procedure, Rule 84, effective December 1, 2015); and
13. The easing of the burden for awarding attorney's fees against plaintiffs in frivolous patent infringement suits (*Octane Fitness, LLC v. Icon Health & Fitness, Inc.*, 572 U.S. \_\_\_, 134 S. Ct. 1749 (2014) and *Highmark Inc. v. Allcare Health Management System, Inc.*, 572 U.S. \_\_\_, 134 S. Ct. 1744 (2014)).

### **Conclusion**

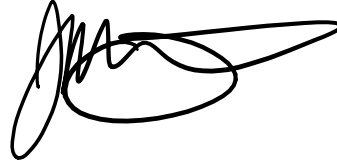
The R&D Companies appreciate the opportunity to provide these comments and are available to assist the USPTO in any way to further develop an agenda for improving the law with regard to patent subject matter eligibility.

Sincerely,

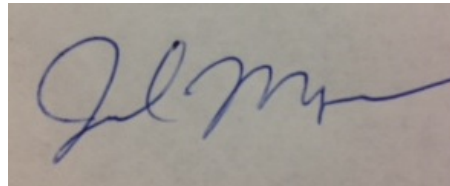


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