2011-1301

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CLS BANK INTERNATIONAL,

Plaintiff-Appellee,

and

CLS SERVICES LTD.,

Counterclaim-Defendant Appellee,

v.

ALICE CORPORATION PTY. LTD.,

Defendant-Appellant.

Appeal from the United States District Court for the
District of Columbia in case no. 07-cv-0974,
Judge Rosemary M. Collyer

BRIEF FOR BSA | THE SOFTWARE ALLIANCE
AS *AMICUS CURIAE* IN SUPPORT OF
PLAINTIFF-APPELLEE CLS BANK INTERNATIONAL

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December 7, 2012   *Attorneys for Amicus Curiae*
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CERTIFICATE OF INTEREST

Pursuant to Federal Circuit Rule 47.4, Andrew J. Pincus, counsel for

Amicus Curiae BSA | The Software Alliance, certifies the following:

1. The full name of the party represented by me is BSA | The Software Alliance.

2. The name of the real party in interest represented by me is BSA | The Software Alliance.

3. BSA | The Software Alliance is not a subsidiary of any corporation and BSA | The Software Alliance has issued no stock.

4. The names of all law firms and the partners or associates that appeared for the party now represented by me in this proceeding are: Mayer Brown LLP; Andrew J. Pincus; Paul W. Hughes.

December 7, 2012
            Andrew J. Pincus
            Attorney for *Amicus Curiae*
            BSA | The Software Alliance

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**BRIEF FOR BSA | THE SOFTWARE ALLIANCE
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INTEREST OF *AMICUS CURIAE*

BSA | The Software Alliance is an association of the world's leading software and hardware technology companies. On behalf of its members, BSA promotes policies that foster innovation, growth, and a competitive marketplace for commercial software and related technologies.[1] BSA members pursue patent protection for their intellectual property and as a group hold a significant number of patents. Because patent policy is vitally important to promoting the innovation that has kept the United States at the forefront of software and hardware development, BSA members have a strong stake in the proper functioning of the U.S. patent system.

The members of the BSA include Adobe, Apple, Autodesk, AVEVA, AVG, Bentley Systems, CA Technologies, CNC/Mastercam, Dell, Intel, McAfee, Microsoft, Minitab, Oracle, Parametric Technology Corporation,

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[1] Pursuant to Fed. R. App. P. 29(c)(5), *amici* affirms that no counsel for a party authored this brief in whole or in part and that no person other than *amici* and its counsel made a monetary contribution to its preparation or submission. The brief is filed pursuant to the Court's Order of October 9, 2012, which granted permission for the filing of *amicus* briefs without consent or specific leave of the Court.

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Progress Software, Quest Software, Rosetta Stone, Siemens PLM, Symantec, TechSmith, and The MathWorks.

SUMMARY OF ARGUMENT

Many computer-implemented inventions are patentable under Section 101. In interpreting that provision, the Supreme Court has expressly refused to "adopt[] categorical rules" because such an approach "might have wide-ranging and unforeseen impacts." *Bilski v. Kappos*, 130 S. Ct. 3218, 3229 (2010); *see also Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012). Several factors are relevant in determining whether Section 101 excludes a computer-implemented invention from patentability on the ground that it would "effectively grant a monopoly over an abstract idea." *Bilski*, 130 S. Ct. at 3231; *see also Mayo*, 132 S. Ct. at 1294 (test under Section 101 is whether the claimed inventions "claim processes that too broadly preempt the use of a natural law").

First, whether a machine is essential to perform the steps of the claim—or the claimed process instead is a mere mental process that can be performed in the human mind or with pencil and paper—bears substantially on patent eligibility. Second, whether a software innovation implements an abstract idea or law of nature in a new, useful, and innovative way also helps determine if a patent is eligible for protection, or if it too

substantially preempts an abstract idea or law of nature. Only when a claimed software innovation fails under both factors may it be found ineligible for protection under Section 101. The form of the patent claim, whether it is claimed as a method, a system, or a storage system, has no bearing on patent eligibility.

Because of the critical role that software plays in our country's economy and in the daily lives of all Americans, it is especially important to ensure in the context of software that Section 101 does not become more than a "threshold test" for patentability (*Bilski*, 130 S. Ct. at 3225), such that "[t]he vast number of claims pass this coarse eligibility filter" (*Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1331 (Fed. Cir. 2012)).

Software firms invest tens of billions annually in research and development in order to create new software innovations. This enormous investment brings countless new products to consumers, has led to vast improvements in industrial productivity, and ensures that U.S. software companies remain global leaders. Indeed, software and related innovations constitute a growing and significant portion of both the U.S. economy and the U.S. export market.

Patent protection is essential to maintaining this vibrant and essential industry. In the words of PTO Director Kappos, "[d]iscrimination

against a form of innovation that is increasingly critical to technological advancement, indeed that in many areas dominates technological advancement, makes no sense." David Kappos, Keynote Address at Center for American Progress, *An Examination of Software Patents* (Nov. 20, 2012), http://tiny.cc/33zfow.

ARGUMENT

I. Society Has Reaped Enormous Benefits From Computer Software Patents.

The principle that software-implemented inventions qualify as patentable subject matter under Section 101 has been settled law for more than thirty years. *See, e.g., Diamond v. Diehr*, 450 U.S. 175, 187 (1981) ("[A] claim drawn to subject matter otherwise statutory does not become non-statutory simply because it uses a mathematical formula, computer program, or digital computer.").[2] The software industry that has developed

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[2]   This Court has found software to be patentable in a substantial number of cases. *See, e.g., Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859, 862-64 (Fed. Cir. 2010); *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1323 (Fed. Cir. 2010); *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005); *AT&T Corp. v. Excel Comms., Inc.*, 172 F.3d 1352 (Fed. Cir. 1999); *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339 (Fed. Cir. 1999); *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998); *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (en banc). *See also In re Freeman*, 573 F.2d 1237 (C.C.P.A. 1978); *In re Noll*, 545 F.2d 141 (C.C.P.A. 1976); *In re Prater*, 415 F.2d 1393 (C.C.P.A. 1969).

in reliance on that well settled principle has become an extremely significant part of the U.S. economy. In determining the standard applicable to software-implemented inventions under Section 101, this Court should not disturb the established understanding regarding the patentability of inventions involving software. PTO Director Kappos recently explained that "[b]ecause many breathtaking software-implemented innovations power our modern world, at levels of efficiency and performance unthinkable even just a few years ago, patent protection is every bit as well-deserved for software-implemented innovation" as for earlier innovations "that enabled man to fly, and before that for the innovations that enabled man to light the dark with electricity, and before that for the innovations that enabled the industrial revolution." Kappos, *supra*.

A. Software's contributions to our economy, and our everyday life, are tremendous.

Computer software is ubiquitous in our society: it is used not just for word processing and calculating spreadsheets but also for designing bridges, diagnosing diseases, and directing our energy infrastructure. Most of the technologies that we encounter every day—from cellular phones and antilock brakes to airplane flight controls and pacemakers—utilize software. It therefore is not hyperbole to conclude that "most of the planet is currently run by software;" "[o]ur financial systems, energy pro-

duction, transportation networks and a host of other fundamental systems are run using software." Henry J. Cittone, *Some Math Is Hard, Some Not: Rules for Patentable Subject Matter of Software*, 38 Rutgers Computer & Tech. L.J. 193, 193-94 (2012).

Investment in software reflects its critical importance to American industry. In 2008, companies invested approximately $46.9 billion in research and development for software and computer-related services—approximately 16% of *total* industrial R&D expenditures for the nation. Nat'l Sci. Bd., Science and Engineering Indicators, at 4-21 & 4-23 (2012), http://tinyurl.com/amb2uao. Software companies accounted for $21.6 billion of foreign direct investment in the United States in 2009. *Id.* at 6-46, tbl. 6-7. Venture capital firms invested approximately $18 billion between 2007 and 2010 in software companies. *Id.* at 6-58, to -60 & fig. 6-51.

Software firms are leading innovators, "with 77% of companies" engaged in software development "reporting the introduction of a new product or service compared to the 7% average for all nonmanufacturing industries." Nat'l Sci. Bd., *supra*, at 6-47. The information technology industry has been described as "the key factor responsible for reversing the 20-year productivity slow-down from the mid-1970s to the mid-1990s and in driving today's robust productivity growth." Robert D. Atkinson & Andrew S.

McKay, *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution* 10 (Info. Tech. & Innovation Found. 2007), http://tinyurl.com/yv5jnw.

The software industry also contributes to the economy by creating a substantial number of high-paying American jobs. Currently, software companies and related services employ approximately 2 million U.S. workers, paying salaries that are roughly 195% of the national average. Robert W. Holleyman, BSA President and CEO, *Testimony before the United States House of Representatives Committee on Energy and Commerce, Subcommittee on Commerce, Manufacturing and Trade* (Mar. 16, 2011), http://tiny.cc/p3nlow.

Moreover, software sales outside the United States constitute a substantial portion of U.S. export markets, significantly strengthening the U.S. economy. Software accounts for approximately $36 billion of U.S. exports, and leading software companies make as much as 60% of their revenue on overseas sales. *Id.*

Software firms rely upon patents to protect their innovations. The patentability of software provides an essential incentive for innovation; "both economic theory and practical experience suggest that the availability of patents for software promotes innovation by supplying (additional)

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incentives to inventors." Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 Cal. L. Rev. 1, 5 (2001).

Indeed, as early as 1992, congressional reports recognized that "patent protection is of importance to the U.S. software industry, both domestically and in the global market." U.S. Congress, Office of Technology Assessment, *Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change* 23 (1992). An estimated 20,000 new patent applications for software-implemented inventions are granted each year. James E. Bessen & Robert M. Hunt, *An Empirical Look at Software Patents*, 16 J. Econ. & Mgmt. Strategy 157, 158 (2007). *See also* Nat'l Sci. Bd., *supra*, at 6-51.

Without intellectual property protection, prospective software entrepreneurs face serious risks that competitors will free-ride on their innovations by pilfering the essential elements of a software program. *See*, *e.g.*, Bradford L. Smith & Susan O. Mann, *Innovation and Intellectual Property in the Software Industry: An Emerging Role for Patents?*, 71 U. Chi. L. Rev. 241, 241-42 (2004). This free-riding would come at the expense of the inventor's return on his investment. With proper protection, by contrast, potential innovators are motivated to pursue new inventions and to proceed to commercial development to collect their economic rewards. *Id.* at

256-57; *see also* Erik S. Maurer, Note, *An Economic Justification for a Broad Interpretation of Patentable Subject Matter*, 95 Nw. U. L. Rev. 1057, 1087-88 (2001).[3] BSA member companies exemplify the principle that patent protection creates an environment conducive to the pursuit of innovation—each year, they spend in excess of $32 billion on research and development to expand their innovation portfolios. See BSA, *Patent Reform: The Verdict Is In* 4 (2007), http://tinyurl.com/nraoaf.

In addition, U.S. patent protections ensure that software developers remain committed to developing their innovative products in this country. And patent protection for software in the United States has significant global consequences as foreign nations frequently emulate U.S. patent law. Given our nation's dominance in software innovation, patent protection maintains one of our key competitive advantages in the world economy.

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[3] Software entrepreneurs are also harmed when identical copies of finished programs are duplicated in what, under the current intellectual property regime, constitutes illegal piracy. Piracy is sometimes combated through the Copyright Act, which protects "the author's original expression of an idea." Smith & Mann, *supra*, at 256. However, copyright law does not prevent a competitor from extracting the innovative elements of software and incorporating them into a new creative shell. Patent protection is necessary for an inventor to "protect the actual invention, not just a single implementation of it." *Id.*

Simple economics makes clear that, if patent protection for software were curtailed, the adverse consequences would be swift and severe. With less profit to capture from the commercialization of the fruits of research and development, businesses would divert their resources into other ventures, and software development would suffer. That would have a ripple effect on productivity across the entire economy. Advanced software allows factory workers to be more precise, cars more fuel efficient, and healthcare more effective. Any new obstacles to software development would carry a penalizing multiplier effect that could threaten the continued technological advantage of the United States. For these reasons, "[d]iscrimination against a form of innovation that is increasingly critical to technological advancement, indeed that in many areas dominates technological advancement, makes no sense." Kappos, *supra*.

B.   New limitations on software patentability would improperly and unjustifiably upset settled expectations.

Given the settled principle that Section 101 encompasses software and other computer-implemented inventions, and the enormous longstanding investments in software development, this Court should be careful not to upset this settled industry of innovators by adopting a new, narrower interpretation of Section 101. "With some eighty thousand software patents already issued * * * software patentability is a matter for the history

books." Cohen & Lemley, *supra*, at 4. "In the area of patents, it is especially important that the law remain stable and clear." *Bilski*, 130 S. Ct. at 3231 (Stevens, J., concurring in judgment).

Departure from settled precedent always requires "special justification" (*Arizona* v. *Rumsey*, 467 U.S. 203, 212 (1984)), and "[c]onsiderations in favor of *stare decisis* are at their acme in cases involving property and contract rights, where reliance interests are involved" (*Pearson* v. *Callahan*, 129 S. Ct. 808, 816 (2009) (quoting *Payne v. Tennessee*, 501 U.S. 808, 828 (1991))). Moreover, *stare decisis* has "special force in the area of statutory interpretation, for here, unlike in the context of constitutional interpretation, the legislative power is implicated, and Congress remains free to alter what [the courts] have done." *Shepard* v. *United States*, 544 U.S. 13, 23 (2005) (quoting *Patterson v. McLean Credit Union*, 491 U.S. 164, 172-73 (1989)).

Market participants have long assumed the patentability of software and made investment decisions accordingly. There is no justification for a dramatic change in patent law that would jeopardize a substantial sector of the current economy; "[f]undamental alterations in these rules risk destroying the legitimate expectations of inventors in their property" and "courts must be cautious before adopting changes that disrupt the settled

expectations of the inventing community." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 739 (2002).

II. Section 101's Bar On The Patentability Of Abstract Ideas And Laws Of Nature Serves A Limited Screening Function.

Section 101 holds that "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" is eligible for patent protection. 35 U.S.C. § 101. By using "such expansive terms modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope." *Bilski*, 130 S. Ct. at 3225 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980)). While Section 101 functions as a "threshold test" for patentability (*id.*), "[t]he vast number of claims pass this coarse eligibility filter" (*Dealertrack*, 674 F.3d at 1331).

Indeed, Section 101 was intended to screen out only a limited number of patent claims. Other provisions of the Act—in particular Sections 102 (novelty), 103 (non-obviousness), and 112 (written description of best mode)—provide additional, more substantial limitations on the issuance of patents. Section 102 "requires that the subject matter was not published anywhere, or known or used by others in the United States, before its invention by the patentee." *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1349 (Fed. Cir. 1998). Pursuant to Section 103, "[a] patent is invalid as ob-

vious 'if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 2012 WL 5519361, at *3 (Fed. Cir. 2012). And under Section 112, the written description must to be sufficient to "convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). These requirements establish extremely substantial hurdles that patent claims must satisfy—and make clear why the issue under Section 101 "is patent eligibility, not patentability." *Assoc. for Molecular Pathology v. U.S. Patent & Trademark Office*, 689 F.3d 1303, 1324 (Fed. Cir. 2012), *cert. granted*, 2012 WL 4508118 (U.S. 2012).

The Supreme Court has long recognized that Section 101 does exclude from patentability "laws of nature, physical phenomena, and abstract ideas." *Bilski*, 130 S. Ct. at 3225 (quotation omitted); *see also Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 174 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right."); *Funk*

Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 130 (1948). "The concepts covered by these exceptions are 'part of the storehouse of knowledge of all men free to all men and reserved exclusively to none.'" *Bilski*, 130 S. Ct. at 3225 (quoting *Funk Bros.*, 333 U.S. at 130). "[M]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it." *Mayo*, 132 S. Ct. at 1293.

But the Supreme Court has cautioned that "too broad an interpretation of this exclusionary principle could eviscerate patent law. For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Mayo*, 132 S. Ct. at 1293. "'While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.'" *Id.* (quoting *Mackay Radio & Tel. Co. v. Radio Corp.*, 306 U.S. 86, 94 (1939)). Thus when software based upon an abstract idea or a natural law is used in "a specific machine"—which includes a general purpose computer programmed by the software to become a special purpose machine (*see* page 25, *infra*)—"to produce a useful, concrete, and tangible result," the claim may be eligible for patent protection. *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc).

III. Computer-Implemented Inventions Satisfy Section 101 As Long As They Do Not Preempt The Ability Of Others To Use An Abstract Idea Or Natural Law.

The critical inquiry in determining whether a claimed invention falls within the Section 101 exception is whether it "claim[s] processes that too broadly preempt the use of a natural law." *Mayo*, 132 S. Ct. at 1294; *see also Bilski*, 130 S. Ct. at 3231 ("Allowing petitioners to patent risk hedging would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea."); *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972) (rejecting claims that were "so abstract and sweeping as to cover both known and unknown uses of the" abstract principle).

The Supreme Court has expressly refused to "adopt[] categorical rules" defining the scope of this exception because of its concern that such an approach "might have wide-ranging and unforeseen impacts." *Bilski*, 130 S. Ct. at 3229. But the Supreme Court and this Court have identified factors relevant to determining whether a claimed computer-implemented invention constitutes an impermissible attempt to patent a natural law or abstract idea. Two factors are of particular significance—whether a claim can be implemented solely via a mental process or necessarily relies upon a machine for execution; and whether the claim uses an abstract idea or law of nature in a way that is novel, useful, and limited. When a claimed

invention falls short under both of these standards, it most likely is not patentable under Section 101.

First, abstract ideas are often characterized by processes that "can be done mentally." *Gottschalk*, 409 U.S. at 67. Thus, "methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas." *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011). A useful indicator of patentability, accordingly, is whether the "steps can be performed in the human mind, or by a human using a pen and paper." *Id.* at 1372 (quotation omitted). The fact that a machine is essential to performing the steps specified in the patent provides strong confirmation that the patent does not preempt an entire abstract idea, because the specifics of the machine implementation will limit the scope of the patent. As Director Kappos emphasized, patent protection must be available for software innovations "such as those enabling automated language translation, voice recognition, and video compression, all involving major technological advances." Kappos, *supra*.

In *SiRF Technology, Inc. v. International Trade Commission*, 601 F.3d 1319, 1323 (Fed. Cir. 2010), for example, the Court considered the patent eligibility of an advanced GPS system that correlated satellite signals

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received by the device with data received from locally generated codes. The patented process included use of computing to determine the position of the GPS receiver. *Id*. at 1331. In finding the claims eligible for patent protection, the court explained that "[i]t is clear that the methods at issue could not be performed without the use of a GPS receiver." *Id*. at 1332. Thus "there [was] no evidence * * * that the calculations * * * can be performed entirely in the human mind." *Id*. at 1333. Unlike use of computing to simply "perform[] calculations," if digital equipment is "essential to the operation of the claimed methods" (*id*.), the method claimed is not an abstract idea. As the Court later explained, a computer "facilitat[ed] the process in a way that a person making calculations or computations could not." *Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Canada (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012).

And in *Research Corp. Technologies, Inc. v. Microsoft Corp.*, 627 F.3d 859, 862-64 (Fed. Cir. 2010), the Court considered claims relating to halftoning—a means for computer displays and printers to simulate additional colors than those otherwise available. This invention thus "present[ed] functional and palpable applications in the field of computer technology." *Id*. at 868. Because the claims did not turn on the implementation of abstract ideas or laws of nature, and instead solved specific problems posed

by computer technology, the Court properly found it patent eligible subject matter under Section 101. *See CyberSource*, 654 F.3d at 1376 (*Research Corp.* involved a method that "could not, as a practical matter, be performed entirely in a human's mind"). The process "was dependent upon the computer components required to perform it." *Bancorp Servs.*, 687 F.3d at 1279.

CyberSource, by contrast, involved computer-implemented claims for fraud detection in credit card transactions where the system compared user information to prior data—a "purely mental process that could otherwise be performed without the use of a computer." 654 F.3d at 1375. Because the process could be performed in analog fashion, and involved the fundamental idea of fraud detection by cross-checking user data against known information, the Court deemed the claim at issue as turning on an abstract idea. *Id.* at 1375-76.

Similarly, in *Dealertrack*, 674 F.3d at 1333, the claim involved using a central clearinghouse for the processing of information relating to car loans—a process no different than the traditional analog use of a clearinghouse. In *Fort Properties, Inc. v. American Master Lease LLC*, 671 F.3d 1317, (Fed. Cir. 2012), the Court addressed claims involving computer implementation of a investment structure in which a real estate portfolio is

divided into separate "deedshares"—a structure that could be accomplished without use of a computer. And in *Bancorp Services*, 687 F.3d at 1278-80, the Court determined that a process to manage a stable value protected life insurance policy did not require computer implementation. Like *CyberSource*, these claims all turned on computer implementation of processes that exist outside the digital confines of a computer, and were processes capable of being executed mentally.

Second, where "the claimed invention as a whole is directed to a combination of interrelated calculations" that "is not a disembodied mathematical concept which may be characterized as an 'abstract idea,' but rather a specific machine to provide a useful, concrete, and tangible result," Section 101 is satisfied. *In re Alappat*, 33 F.3d at 1544; *see also Mayo*, 132 S. Ct. at 1294 ("'While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.'" (quoting *Mackay Radio*, 306 U.S. at 94)).[4]

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[4]   This Court has long recognized that software used on a general purpose computer "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." *In re Alappat*, 33 F.3d at 1545. A general purpose computer "operating pursuant to software *may* represent patentable subject matter, pro-

Merely adding "conventional or obvious" pre- or post-solution activity "is normally not sufficient to transform" an abstract idea or law of nature "into a patent-eligible application." *Mayo*, 132 S. Ct. at 1298 (quotations omitted). *See also Bilski*, 130 S. Ct. at 3231 ("[A]dding token postsolution components [does] not make the concept patentable."). This is because "to transform an unpatentable law of nature into a patent-eligible *application* of such a law, one must do more than simply state the law of nature while adding the words 'apply it.'" *Mayo*, 132 S. Ct. at 1294. The claim must contain "additional features" that "provide practical assurance that the process is more than a drafting effort designed to monopolize the law of nature" or abstract idea. *Id.* at 1297.

In evaluating whether a claim is patent eligible, the Court must "consider the invention as a whole, rather than dissecting the claims into old and new elements and then ignoring the presence of the old elements in the analysis." *Bilski*, 130 S. Ct. at 3230 (quotation omitted). *See also In re Alappat*, 33 F.3d at 1543 ("[B]ecause the dispositive inquiry is whether the claim *as a whole* is directed to statutory subject matter, it is irrelevant

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vided, of course, that the claimed subject matter meets all of the other requirements of Title 35." *Id*.

that a claim may contain, as part of the whole, subject matter which would

not be patentable by itself.").

The Supreme Court's explanation of the deficiency of the claim in

Mayo is instructive in illustrating what is required:

> the claims inform a relevant audience about certain laws of na-
> ture; any additional steps consist of well-understood, routine,
> conventional activity already engaged in by the scientific com-
> munity; and those steps, when viewed as a whole, add nothing
> significant beyond the sum of their parts taken separately.

132 S. Ct. at 1298. "[S]imply appending conventional steps, specified at a

high level of generality, to laws of nature, natural phenomena, and ab-

stract ideas, cannot make those laws, phenomena, and ideas patentable."

Id. at 1300.

By contrast, the Supreme Court in *Diehr* upheld a process claim for

molding rubber into different products. 450 U.S. at 177. The method in-

cluded use of the Arrhenius equation to determine how long the rubber

needed to harden, and this process was implemented via a computer sys-

tem. *Id.* at 177-78. The Court found the process patent eligible, notwith-

standing "that in several steps of the process a mathematical equation and

a programmed digital computer are used." *Id.* at 185. It was patent eligible

subject matter because it did not "seek to pre-empt the use of [the] equa-

tion," and instead sought "only to foreclose from others the use of that eq-

uation in conjunction with all of the other steps in their claimed process." *Id.* at 187. Accordingly, while "Arrhenius' equation is not patentable in isolation," "when a process for curing rubber is devised which incorporates in it a more efficient solution of the equation, that process is at the very least not barred at the threshold by § 101." *Id.* at 188. In other words, the claim's use of the Arrehenius question was new, useful, and limited.

In *Alappat*, this Court noted that although the claim contained "circuitry elements that perform mathematical calculations," that "is essentially true of all digital electrical circuits." 33 F.3d at 1544. But the specific claimed invention there—"a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means"—was not "a disembodied mathematical concept." *Id.* Instead, the software functioned to create "a specific machine to produce a useful, concrete, and tangible result." *Id.*

Computer software today can, and does, turn a general function computer into a specific kind of machine. With the stroke of a finger, a tablet computer or smartphone can instantly become a GPS navigation system, a word processor, a camera, a video or music player, an eReader, or an electronic piano. Thus, while the computer itself consists of a fixed set

of standard physical components, it can be given almost limitless functionality through software that reconfigures the electronic pathways running through millions of transistors embodied in the computer's processor, literally (if temporarily) converting the computer into a special purpose device.

On the other hand, in *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 86 (1853), the Supreme Court rejected Samuel Morse's general claim for "the use of the motive power of the electric or galvanic current * * * however developed, for making or printing intelligible characters, letters, or signs, at any distances." The Court concluded that this claim too broadly preempted future innovation: "For aught that we now know some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff's specification." *Id*. at 113. A broad and abstract claim for the *entire* use of electronic currents to transmit signals was thus unpatentable.

When the claim *only* adds to an abstract idea digital implementation "at a high level of generality" (*Mayo*, 132 S. Ct. at 1300), courts properly find such patent claims generally ineligible for patent protection. Thus, claims reciting highly generalized computer implementation of credit card

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fraud detection (*CyberSource*, 654 F.3d at 1373-77), a central clearing-house for car loans (*Dealertrack*, 674 F.3d at 1333-34), and creation of "deedshares" for real estate investment (*Fort Props.*, 671 F.3d at 1323-24) are not the sort of claim that is patent eligible.

IV. The Software At Issue Here Is Not Patentable.

Assessed under this framework, the software at issue here is not patentable.

The claims involve the concept of credit intermediation—an idea that has existed in non-digital form for millennia. *See CLS Bank Int'l v. Alice Corp. Pty. Ltd.*, 685 F.3d 1341, 1344-46 (Fed. Cir. 2012); *id.* at 1357-58 (Prost, J., dissenting). It is plain that credit intermediation long pre-existed computer implementation, and that it is a process that can be performed in the human mind, or by a human with pencil and paper.

In addition, the computer aspect of the claims here does not add anything of substance to the mental process at issue. The computer implementation of the abstract idea is not limited in any fashion. And there is no suggestion that the process here is in anyway dependent upon computer technology to accomplish the directed end. To the contrary, as Judge Prost indicated in dissent, the patent claims here would have the effect of preempting the abstract idea of credit intermediation in its entirety. *CLS*

Bank Int'l, 685 F.3d at 1359 (Prost, J., dissenting). This is an archetypal example of what the Supreme Court in *Mayo* identified as an unpatentable usage of an abstract idea or law of nature—"simply stat[ing] the law of nature while adding the words 'apply it'"; or, as here, "use a computer."

V. The Form Of The Patent Claim Does Not Affect Patent Eligibility.

Section 101 makes eligible for patent protection "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. Whether a software innovation is claimed as a method, system, or storage medium does not alter its patent eligibility. Indeed, the Supreme Court has been careful not to "interpret[] patent statutes in ways that make patent eligibility depend simply on the draftman's art." *Mayo*, 132 S. Ct. at 1294 (quotation omitted).

When software dictates a means for implementation of a specific innovation using computer implementation, it may qualify as a "process" under Section 101. *See Diehr*, 450 U.S. at 188. Similarly, computer software may qualify as a "machine." Software that directs a computer to perform a specific function "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." *In re Alappat*, 33 F.3d at 1545. The form of the patent claim does not alter an innovation's eligibility pursuant to Section 101.

CONCLUSION

The *en banc* Court should affirm the district court's finding of invalidity pursuant to Section 101.

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Dated: December 7, 2012

CERTIFICATE OF COMPLIANCE

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C), the undersigned counsel certifies that this brief:

(i)   complies with the word-limitation of Rule 29(d) because it contains 5,506 words; and

(ii)   complies with the typeface requirements of Rule 32(a)(5) and the type style requirements of Rule 32(a)(6) because it has been prepared using Microsoft Office Word 2007 and is set in Century Schoolbook font in a size equivalent to 14 points or larger.

Dated: December 7, 2012   _____

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CERTIFICATE OF SERVICE

I hereby certify that on December 7, 2012, I served two copies of the foregoing Brief for BSA | The Software Alliance as *Amicus Curiae* In Support of Plaintiff-Appellee CLS Bank International on each party separately represented as follows:

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