No. 17-645

IN THE

# Supreme Court of the United States

RECOGNICORP, LLC,

*Petitioner*,

v.

NINTENDO CO., LTD., ET AL.,

**On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit**

**BRIEF FOR *AMICI CURIAE* RAYMOND A. MERCADO, PH.D., UNITED INVENTOR ASSOCIATION, INVENTOR-CENTER, INVENTOR'S PROJECT, PAUL MORRIS, ADRIAN PELKUS, AND PAUL HAYES IN SUPPORT OF PETITIONER**

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## STATEMENT OF INTEREST OF *AMICI CURIAE*[1]

**Raymond A. Mercado, Ph.D.**, is a political scientist and patent law scholar who has written on the law of patent-eligible subject matter under 35 U.S.C. § 101 at issue in this case, and is interested in the wholesome development of the law. *See* Raymond A. Mercado, *Resolving Patent Eligibility and Indefiniteness in Proper Context: Applying* Alice *and* Aristocrat, 20 Va. J.L. & Tech. 240 (2016).

**United Inventor Association ("UIA")** is a 501(c)(3) nonprofit organization dedicated to providing educational resources and opportunities to the independent inventing community, while encouraging honest and ethical business practices among industry service providers. United Inventor currently has 13,000 members including non-profit local inventor clubs.

**Inventor-Center** provides a resource to inventors and small companies providing advice on protecting and marketing their discoveries, and that advice is drawn from real-world experience tailed to fit individual inventor needs.

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[1] Pursuant to Supreme Court Rule 37.2(a), *amici curiae* file this brief with consent from all parties. Counsel of record for both Petitioner and Respondent granted consent to *amici*, and received notice more than 10 days before the due date for this brief. Pursuant to Supreme Court Rule 37.6, the undersigned further affirms that no counsel for a party authored this brief in whole or in part, and no person or entity other than *amicus curiae* or its counsel made a monetary contribution specifically for the preparation or submission of this brief.

**Inventor's Project** is devoted to promoting innovation and defending intellectual property. The Inventor's Project was created to help protect inventors, who depend on strong intellectual property laws to defend their innovations, create jobs, and secure investors.

**Paul Morris** has nearly 20 years of experience in emerging technology companies in both technical and management roles. Mr. Morris has recruited, trained and led teams of engineers in product development and in the creation of new intellectual property. Mr. Morris has also been an inventor for nearly 20 years and his patented inventions cover a variety of technologies including, core Internet Protocols, operating systems, web protocols, web applications, browsers, user interfaces, media sharing, user communication and sharing, security, tagging, green computing, and data analytics. Mr. Morris is a named inventor on over 300 issued U.S. patents and pending patent applications. Licensees to Mr. Morris' inventions include Apple, Canon, Sony, HP, Kodak, AOL, Yahoo, Verizon Wireless, T-Mobile, Sprint, CBS Interactive, and others.

**Adrian Pelkus** is an inventor with over 30 years of experience developing over 300 different electronic products and high technology processes that have helped startup several technology companies. Mr. Pelkus is named inventor on fourteen issued U.S. Patents including the "Baby Think it Over" infant simulator, a "Thin Film Flexible Solar Cell," the FDA cleared "Jaw Elevation Device" and O2MislyTM Wound Treatment System. In 2005, Mr. Pelkus reorganized the San Diego Inventors Forum now a 501(c)(3) to help startup entrepreneurs. Mr. Pelkus

serves on the Board of Directors of both United Inventors Association of America (UIA) and US Inventor, organizations dedicated to assisting and educating inventors.

**Paul Hayes** is the owner and managing member of Hudson Bay Wireless, LLC. Hudson Bay Wireless is currently working to prosecute patent applications related to Search Engine optimization algorithms. Developing related software using Amazon Web Services (AWS) to implement a search engine called GrabHat, which is dedicated to personalized search with privacy. Hudson Bay Wireless also recently completed an effort to assert a portfolio of patents related to an electrical power metering system.

## SUMMARY OF THE ARGUMENT

"Congress has spoken" in favor of "the patentability of software,"[2] and this Court has deliberately structured its § 101 doctrine to avoid "uncertainty as to the patentability of software,"[3] warning that the "exclusionary principle" of § 101 must be construed "carefully" "lest it swallow all of patent law."[4] Yet, in spite of these clear signals that § 101 encompasses the technology patented in this case, the Federal Circuit has been unable to articulate adequate guidance on an issue critical to software startups—60% of which report relying on patents to attract venture capital funding.[5]

As the former Director of the PTO, David Kappos, has observed, § 101 doctrine is an area of "problematic confusion and unpredictability,"[6] one that is causing

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[2] *California Institute of Technology v. Hughes Communs., Inc.*, 59 F. Supp. 3d 974, 984 (C.D. Cal. 2014).

[3] *Bilski v. Kappos*, 561 U.S. 593, 605 (2010) (refusing to adopt the machine-or-transformation test as the sole test for eligibility under 101 precisely because it "would create uncertainty as to the patentability of software . . . and inventions based on linear programming, data compression, and the manipulation of digital signals.").

[4] *Alice Corp. Pty. Ltd. v. CLS Bank. Intern.*, 134 S. Ct. 2347 (2014).

[5] Stuart J.H. Graham, et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 Berkeley Tech. L.J. 1255, 1307 (2009) ("60% of software firms reported that VC investors considered patents important").

[6] David Kappos, T*he State of the Patent System: A Look At The Numbers*, LAW360 (Nov. 27, 2017), *available at* https://www.

"real chaos," because "[w]e're dealing with a litmus test, an 'I know it when [I] see it' test."[7] The result has been that "patent protection for . . . software inventions is more robust in other countries like China and Europe" than in the U.S.[8] "[D]espite the number of cases that have faced these questions and attempted to provide practical guidance [on the application of § 101]," Federal Circuit Judge Linn remarked recently, "great uncertainty yet remains. And the danger of getting the answers to these questions wrong is greatest for some of today's most important inventions in computing, medical diagnostics, artificial intelligence, the Internet of Things, and robotics, among other things."[9]

In the absence of proper guidance as to whether their products are patentable, software startups will not only be less likely to secure venture capital; without the exclusivity that patents afford, they will also have added difficulty in fending off competitors for long enough to gain a foothold in the market. As the CEO of one software firm stated: "[a] large public company copied the code of our product and tried to sell it

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law360.com/articles/987044/the-state-of-the-patent-system-a-look-at-the-numbers.

[7] Ryan Davis, *Kappos Calls For Abolition Of Section 101 Of Patent Act*, LAW360 (Apr. 12, 2016), *available at* https://www.law360.com/articles/783604/kappos-calls-for-abolition-of-section-101-of-patent-act.

[8] *Id*.

[9] *Smart Sys. Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1378 (Fed. Cir. Oct. 18, 2017) (Linn, J., dissenting in part and concurring in part).

on the market . . . . Without my patent, I wouldn't have been able to stop it."[10]

While the Federal Circuit has not expressly held that software is ineligible under § 101, its decisions in this area have, according to one district court, "provide[d] either false guidance to district courts, or no guidance at all."[11] For example, in *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014)—a decision criticized for creating a "bright-line rule" that "risks eviscerating software patents"[12]—the Federal Circuit held that "[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *Digitech*, 758 F.3d at 1351. But even *Digitech's* "bright-line rule" does not bring any certainty (albeit certainty that is contrary to the will

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[10] Graham, et al., 24 Berkeley Tech. L.J. 1255, 1300 (quoting the CEO of software firm as saying that "[v]enture capital investors place a high value on companies with patents. From 2003 through 2007, I sat in on many startup and venture capital boards and, generally speaking, I found that patents were key to funding"); *see also* Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 Tex. L. Rev. 961, 987 (2005) ("For the smaller firm, however, the ability of the implicit threat of patent litigation to prevent incumbents like IBM and Microsoft from taking its technology can be the difference between life and death. As one executive put it: 'What's protected me from other people ripping [off our product] has been the specter of patent infringement.'").

[11] *California Institute of Technology*, 59 F. Supp. 3d at 988.

[12] *Id.* at 987-988.

of Congress and this Court) to the eligibility of algorithms for patenting under § 101. As the district court in *California Institute of Technology* observed, "*Digitech* seems to set forth a bright-line rule . . . [b]ut that cannot be what *Digitech* means," because it is heedless of the nature of software, which "**only** 'receives data,' 'applies algorithms,' and 'ends with decisions. That is the *only* thing software does. Software does nothing more.'"[13] It also cannot be reconciled with this Court's § 101 jurisprudence, which requires that the algorithm be analyzed together with all other elements of a claim.[14] The algorithm must be analyzed as part of its application to the claimed process, in the context of the claim as a whole. But *Digitech* wrongly suggests that a process employing mathematical algorithms necessarily needs "additional limitations" to meet the test for eligibility—as if the algorithms, once applied to the claimed process, could not render the process "inventive" under § 101. As a result, *Digitech's* confused holding "risks eviscerating software patents."[15] And the current case has perpetuated its flawed logic.

To add to the confusion, the Federal Circuit in *Thales Visionix Inc. v. United States*, 850 F.3d 1343 (Fed Cir. 2017) used an analytic procedure exactly the ***opposite*** of that in *Digitech*: it analyzed the mathematical algorithm in the context of the entire claim,

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[13] *Id*. (quoting *Oplus Techs. Ltd. v. Sears Holding Corp*., 2013 WL 1003632, at *12 (C.D. Cal. Mar. 4, 2013) (emphases original)).

[14] *Id*.

[15] *Id*.

as applied to the claimed systems and methods. Not surprisingly, it reached the opposite result, upholding the eligibility of the patents under § 101. Indeed, in *Thales* the mathematical equation was critical to the "new and useful technique" and "non-conventional manner" of using inertial sensors. *Id.* at 1349. Had the equation not been analyzed as applied to the claimed systems and methods, the *Thales* claims might not have been held eligible under § 101 because many of the structures to which the equation was applied were already known.

In the instant case, by contrast the Federal Circuit, "discerning no material difference between" the "analysis in *Digitech* and the analysis here," reaffirmed *Digitech's* problematic "bright-line" holding and stated that "[a]dding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract." Pet. App. 9a-10a. And it provided no basis for distinguishing its flawed analytic method from that of *Thales*.

As argued below, the Federal Circuit's decisions here and in *Digitech* have improperly revived the long-defunct procedure of *Parker v. Flook*, 437 U.S. 584 (1978), whereby courts analyzed § 101 eligibility by "dissecting" the claim and separating the mathematical algorithm from all the other elements therein. But this approach, which isolates the algorithm from the rest of the claim and "treat[s] [it] as though it were a familiar part of the prior art," would effectively allow courts to ignore the inventive application of the algorithm in the context of the rest of the claim and preclude the patentability of software. *Flook*, 437 U.S. at 592. That danger, of course, is one reason why

the procedure of *Flook* has long since been abandoned. Unfortunately, the Federal Circuit here and in *Digitech* has resurrected it, contrary to this Court's directive in *Diehr* and in all its subsequent § 101 cases that claims are to be considered "as a whole." *Diamond v. Diehr,* 450 U.S. 175, 188 (1981) (expressly abandoning the procedure of *Flook*).

At the same time, the Federal Circuit has managed to follow the analytic method required by *Diehr*, as in *Thales* where the court analyzed the mathematical equation as applied to the claimed system and method. But the Federal Circuit has articulated no principled basis for the distinction between *Thales*, *Digitech*, and this case, and remains fractured on the proper approach for determining the eligibility of claims involving mathematical algorithms. Because of the lack of guidance from the Federal Circuit, neither the district court's nor patentees know how the Federal Circuit will apply this Court's precedent.

Commentators have recognized the disturbing implications of *Digitech*, now perpetuated in this case. According to one scholar, *Digitech* "is premised on principles that the Supreme Court itself has abandoned."[16] "Courts have struggled to interpret *Digitech*," and as a result, "the uncertainty over the limits of patentability of algorithms persists."[17] This case

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[16] Jeffrey A. Lefstin, *The Three Faces of* Prometheus: *A Post*-Alice *Jurisprudence of Abstractions*, 16 N.C. J.L. & Tech 647, 691 (2015).

[17] Raymond A Mercado, *Resolving Patent Eligibility and Indefiniteness in Proper Context: Applying* Alice *and* Aristocrat, 20 Va. J.L. & Tech. 240, 287 n. 149 (2016).

perpetuates that uncertainty, and thereby "risks eviscerating" still more "software patents.[18]

This Court must grant certiorari in this case to resolve the Federal Circuit's split over the proper approach to analyzing the eligibility of claims involving mathematical algorithms, halt its improper revival of *Flook* and clarify when "an application" of a "mathematical formula to a known structure or process" is "deserving of patent protection." *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* 566 U.S. 66, 71 (2012) (quotation omitted). The continuing vitality of thousands of software patents depends on there being such clarity within the law of patent eligibility under § 101.

## ARGUMENT

### I. THE FEDERAL CIRCUIT IS SPLIT ON THE PROPER METHOD FOR ANALYZING THE ELIGIBILITY OF SOFTWARE UNDER § 101.

#### A. The Federal Circuit Here and in *Digitech* Revived the Long-Abandoned Approach of *Flook*, and Viewed the Mathematical Algorithm in Isolation from its Inventive Application in Context of the Whole Claim.

This Court's decisions in *Alice* and *Diehr* counsel that claims reciting a mathematical formula are eligible under § 101 when they "[t]ransform the [claimed] process into an inventive application of the formula"

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[18] *California Institute of Technology*, 59 F. Supp. 3d at 988.

and thereby "improve[] an existing technological process." *Alice*, 134 S. Ct. at 2358. Yet the Federal Circuit in this case, following its precedent in *Digitech* and yet departing from its conflicting precedent in *Thales*, ignored this approach.

Rather, the Federal Circuit here effectively revived the approach of *Parker v. Flook*, 437 U.S. 584 (1978)—long abandoned by this Court—whereby the court "dissect[ed] the claim into old and new elements and then . . . ignore[d] the presence of the old elements in the analysis," holding that "if everything other than the algorithm is determined to be old in the art, then the claim cannot recite statutory subject matter." *Diehr*, 450 U.S. at 188-189 & n. 11 (abrogating the "procedure of dissecting a claim into old and new elements" earlier mandated by *Flook*).

The Federal Circuit here purported to distinguish the result in *Diehr* "because, ***outside of the math***, claim 1 of [Petitioner's patent] is not directed to otherwise eligible subject matter." Pet. App. 9a (emphasis added). Yet *Diehr* expressly *rejected* an approach whereby "everything other than the algorithm" in the claim be swept to one side and analyzed separately. *Diehr*, 450 U.S. at 189 & n. 11. Rather, *Diehr*—and every § 101 case of this Court since *Diehr*—requires that the algorithm be examined together with the other claim elements and the claims analyzed "as a whole." *Id.* at 188. That is why *Digitech's* "bright-line" rule "cannot be what *Digitech* means,"[19] as one district court charitably said of the decision of its re-

[19] *California Institute of Technology*, 59 F. Supp. 3d at 987.

viewing court. An algorithm applied to a claimed process, as in *Diehr*, can certainly render the claim eligible for patent protection, but only if the claim is analyzed as a whole. If algorithms are erroneously viewed in isolation, as if they were ineligible subject matter to begin with and could never, applied to a process, constitute an "inventive application," then the flawed result of *Flook*, *Digitech* and this case remains.

To understand the dangers of the Federal Circuit's (and *Flook's*) approach with respect to the patent-eligibility of software, it is important to recognize that "[a]ll software ***only*** 'receives data,' 'applies algorithms,' and 'ends with decisions.' That is the *only* thing software does. Software does nothing more."[20] And yet, "a word processing program is the equivalent in the Digital and PC Revolutions of a mechanical typewriter in the Industrial Revolution. Similarly, an email produced by the functions of a word processing program in an email program, such as Outlook or Eudora, is the digital equivalent of a physical letter written by a typewriter and mailed via the U.S. Post Office to its recipient."[21] Software is a critical part of the innovation economy and its less obviously "tangible" manifestation should not count against its eligibility under § 101.[22] That was part of the Court's

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[20] *Oplus Techs. Ltd. v. Sears Holding Corp.*, 2013 WL 1003632, at *12 (C.D. Cal. Mar. 4, 2013) (emphases original).

[21] Adam Mossoff, *A Brief History of Software Patents (and Why They're Valid)*, 56 Ariz. L. Rev. Syllabus 65, 78 (2013).

[22] Software is "structural," however. *See, e.g., WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339, 1348 n. 3 (Fed.

point in *Bilski*, where it abandoned the "machine-or-transformation" test for eligibility in part to avoid "uncertainty as to the patentability of software." *Id.* at 605.

Hence the eligibility of software rests, to a great extent, on the eligibility of algorithms, which operates on the other limitations and the combination of limitations must be considered. If algorithms are swept to one side of the § 101 analysis, and the claim is then found wanting because none of the other elements are deemed directed to eligible subject matter, i.e., because they are deemed "generic," or not novel, this seriously undermines the prospects for the patent-eligibility of software.

Because algorithms implemented on a computer are the essence of software, if algorithms are "treated as though [they] were a familiar part of the prior art" as in *Flook*, 437 U.S. at 591-592, and essentially ignored in the § 101 analysis as they were here and in *Digitech*, such an approach effectively forecloses the possibility of patenting software. But when the claim is examined as a whole—i.e., algorithm and computer, together—it can be seen that "programming creates a new machine, because a general purpose computer in

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Cir. 1999) ("A microprocessor contains a myriad of interconnected transistors that operate as electronic switches. . . The instructions of the software program cause the switches to either open or close. The opening and closing of the interconnected switches creates electrical paths in the microprocessor that cause it to perform the desired function of the instructions that carry out the algorithm."); Andrew Chin, Alappat *Redux: Support for Functional Language in Software Patent Claims*, 66 SMU L. Rev. 491, 500 (2013) ("such changes in the flow of electrons are cognizable as structure").

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 1526, 1545 (Fed. Cir. 1994) (*en banc*).

*Digitech* isolated the mathematical algorithm from the rest of the claim. There the Federal Circuit held that "[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *Digitech*, 758 F.3d at 1351. Indeed, one commentator observed that the Federal Circuit in *Digitech* "declined to implement the *Alice* steps" and simply "held the [claimed] method 'so abstract and sweeping as to cover any and all uses of a device profile'"—"essentially [holding] preemption as a threshold test to be considered before other determinations of patent eligibility and create[ing] a possible step 0 for the *Alice* test."[23]

In *Thales*, the Federal Circuit followed the proper approach of *Diehr*, analyzing the mathematical equation as applied to the claimed system and method, rather than isolating the equation from the rest of the claim. Yet, the *Thales* court failed to articulate a principled basis for distinguishing itself from *Digitech*, and did not even cite the case. Likewise, the Federal Circuit in this case did not attempt to distinguish itself from the analytic method employed by *Thales*. Whether Federal Circuit panels, faced with conflicting precedent, are electing to "look the other way" or

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[23] Austin Steelman, *Curiouser and Curiouser! Why the Federal Circuit Can't Make Sense of* Alice, 98 J. Pat. & Trademark Off. Soc'y 374, 388 (2016).

are simply confused about the right analytic approach to take, the contrast among their methods (and the consequent panel-dependency of their outcomes) is undeniable.

This Court cannot allow the approach of *Digitech* and this case to continue to perpetuate itself. If the addition of a mathematical algorithm can *never* render a claim, as a whole, patent-eligible, then the viability of a very wide swath of software patents is threatened. Moreover, such a rule could easily have the unintended consequence of forcing software inventors to claim their patents in the "simple language of what [the invention] is intended to do, thus covering a far wider territory than mathematically describing the algorithm itself" in the claim."[24] Such a regime may well have the effect of spawning software patents that are far broader than they would have been had inventors been allowed to claim the implementation of algorithms in a straightforward way. And that would only deepen the "risk of pre-emption," which this Court's § 101 jurisprudence set out to forestall in the first place. *Alice*, 134 S.Ct. at 2355. The Federal Circuit's approach here and in *Digitech* therefore runs counter to the objectives of § 101.

This Court should therefore grant certiorari in this case, resolve the split within the Federal Circuit, and clarify that the eligibility of mathematical algorithms must be analyzed in the context of the claim "as a whole."

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[24] Robin Feldman, Rethinking Patent Law 109 (2012).

### B. The Federal Circuit Here and in *Digitech* Confused the "Means of Application" for the "Abstract Idea," Effectively Holding that Mathematical Algorithms Cannot Constitute a Patent-Eligible "Inventive Application" at Step Two of *Mayo/Alice*.

As one commentator has noted, because step one of the *Mayo/Alice* § 101 analysis "defines the abstraction (if any) underlying the claim, while step two asks if the application of that abstraction is inventive," the "object of step one must therefore be to separate the *idea* of the invention from the means of application."[25] "It follows," therefore, "that the means of implementing a particular result—even if those means are a mathematical procedure—are applications to be evaluated in *Mayo* step two, not abstractions to be evaluated in *Mayo* step one."[26]

Here, the Federal Circuit wrongly found the claimed algorithm to be a second "abstract idea" in addition to the purported "abstract idea of encoding and decoding." Pet. App. 12a. But that holding does violence to a logical understanding of the claims under this Court's § 101 framework. Even assuming that the claims are "directed to" the abstract idea of encoding and decoding (a proposition Petitioner disputes, see Cert. Pet. 11), the function of the mathematical limitations in the claims is to assist *in bringing about* the claimed result or goal ("encoding and decoding"). Thus, the claimed algorithm is better understood as

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[25] Lefstin, *supra* note 16, at 691.

[26] *Id*.

an implementing step, and hence an inventive application, not as a second abstract idea. The claim is much like that in *Diehr* where the Arrhenius equation, even if viewed as abstract in isolation, was not abstract in the context of the claim because it was an "inventive application" that helped carry out the claimed process. *Diehr*, 450 U.S. at 188-189.

Notably, the Federal Circuit's decision in this case is internally inconsistent. On the one hand, it wrongly states that Petitioner "has not alleged a particularized application of encoding and decoding image data," Pet. App. 12a, and yet elsewhere in the opinion acknowledges Petitioner's contention that "the 'particular encoding process using the specific algorithm disclosed' in the patent 'transforms' the abstract idea into a patentable invention." Pet App. 11a. This seeming inconsistency likely arises, as with other flaws in its opinion, from the court's problematic revival of *Flook* in this case. *See supra* Sec. I.A. Because the Federal Circuit isolated the claimed algorithm from the § 101 analysis—following *Flook's* defunct procedure and contradicting every § 101 case from this Court since *Diehr*—the Federal Circuit did not recognize the "particularized application of encoding and decoding image data" inherent in the specific algorithm claimed by Petitioner.

This Court should therefore grant certiorari to clarify that mathematical algorithms, when employed to bring about the goal of a claim, are not abstract ideas themselves but are *applications* that may well

be inventive and patent-eligible under Step Two of *Mayo/Alice*.[27]

This case is an excellent vehicle for doing so, since it represents the perpetuation of *Digitech's* flawed analytic approach, which will in all likelihood recur in future cases.

## II. ALTERNATIVELY, THIS COURT SHOULD GRANT CERTIORARI TO ARTICULATE A MORE PERMISSIVE AND MORE MANAGEABLE REGIME TO FOSTER THE PATENTING OF SOFTWARE WITHIN PROPER BOUNDS.

Alternatively, to the extent this Court determines that Petitioner's claims might run afoul of the current test for eligibility under *Mayo/Alice*, this Court should seize the opportunity to rearticulate a more manageable § 101 regime that is hospitable to software patents.

As indicated by Petitioner, the courts as well as patent practitioners and scholars are struggling mightily to apply the test for § 101 eligibility set forth in *Mayo/Alice*. Cert. Pet. 19-23. The title of one article cited in this brief—*Why the Federal Circuit Can't*

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[27] One scholar argues that "[s]pecific information-processing algorithms," such as that disclosed and claimed in the patent in this case, "should be regarded as applications and not 'abstract' ideas for purposes of *Mayo* step one." Lefstin, *supra* note 16, at 692. Whether such a conclusion is more properly reached at Step One or Step Two of its *Mayo/Alice* analysis is for this Court to decide, but regardless of when it comes into play, the proposition is vital for the continued patent-eligibility of software.

*Make Sense of* Alice[28]—gives some notion of the state of the current state of affairs.

The former Director of the PTO David Kappos has stated that "decisions like *Alice* on the issue [of § 101 eligibility] are a 'real mess' and threaten patent protection for key U.S. industries."[29] "[W]e're now seeing real chaos," Kappos has said, because "[w]e're dealing with a litmus test, an 'I know it when [I] see it' test" under *Mayo/Alice*.[30] "Patent protection for biotechnology and software inventions is more robust in other countries like China and Europe," than in the United States, according to Kappos, who finds it "a disturbing trend for the U.S. to take those two areas, which are the crown jewel of the innovation economy, and provide less protection for them than other countries."[31]

Research in this area indicates that Director Kappos's remarks have a solid empirical basis. A recent study shows that, since August 2014 (soon after this Court's decision in *Alice*), at least 1,694 patent applications have been rejected under § 101 as ineligible for patent protection by the PTO, and yet their counterpart applications abroad were granted by the European Patent Office or by China, or both.[32] That trend raises significant concerns whether the current

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[28] *See* Steelman, *supra* note 23.

[29] *See* Davis, *supra* note 7 (quoting former Director Kappos).

[30] *Id*.

[31] *Id*.

[32] Kevin Madigan & Adam Mossoff, *Turning Gold To Lead: How Patent Eligibility Doctrine is Undermining U.S. Leadership in Innovation*, 24 Geo. Mason L. Rev. 939 (2017).

state of § 101 doctrine under *Mayo/Alice* is causing the U.S. patent system to lose its edge to foreign competitors in European Union and China. Such a state of affairs is simply untenable.

For this reason alone, this Court should grant certiorari to provide further guidance regarding its test for eligibility under § 101 so that critical U.S. industries, like the software industry, do not give way to foreign competitors.

## CONCLUSION

For the foregoing reasons, the Court should grant the petition.

Respectfully submitted,

/s/ Meredith Martin Addy

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