No. 21-

IN THE

Supreme Court of the United States

PERSONALWEB TECHNOLOGIES LLC,

Petitioner,

– v. –

GOOGLE LLC, *et al.*,

Respondents.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

LAWRENCE M. HADLEY
Counsel of Record
STEPHEN UNDERWOOD
GLASER WEIL FINK HOWARD AVCHEN & SHAPIRO LLP
10250 Constellation Boulevard, 19th Floor
Los Angeles, California 90067
(310) 553-3000
lhadley@glaserweil.com

Counsel for Petitioner

310497

COUNSEL PRESS
(800) 274-3321 • (800) 359-6859

QUESTION PRESENTED

In *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014)—a case about the patentability of computer-implemented business methods—this Court confirmed that inventions "improv[ing] the functioning of the computer itself" or "effect[ing] an improvement in any other technology or technical field" remain patent-eligible. *Id.* at 225-226. Lower courts have not followed that instruction. Petitioner's patents claim a novel computer file system that significantly improved fundamental computer networking operations—an improvement in a "technical field." Yet the Federal Circuit, in a precedential decision, canceled Petitioner's patents as being directed to a pure "abstract idea." Petitioner is not alone. Since *Alice*, the Federal Circuit has found, as a matter of law and without any guiding principles, the vast majority of issued patents in the computing arts patent-ineligible. The list of inventions that the Federal Circuit has deemed categorically "abstract" has grown so large as to place a cloud of invalidity over all computer-based patents. *Certiorari* is needed to provide guiding principles for patent-eligibility in the computing arts, and to restore the critical incentive to innovate in this essential technological field.

The question presented is:

1. How should courts determine whether a patent for a computer-implemented invention is patent-eligible because it "improve[s] the functioning of the computer itself" or "effect[s] an improvement in any other technology or technical field" under *Alice*?

PARTIES TO THE PROCEEDING

The parties to the proceeding are Petitioner PersonalWeb Technologies LLC, and Respondents Google LLC, YouTube, LLC, Facebook, Inc., EMC Corporation, and VMWare, Inc.

RULE 29.6 STATEMENT

PersonalWeb Technologies, LLC has no parent corporations, and no publicly held company owns 10% or more of its stock.

RELATED PROCEEDINGS

The following cases are "related cases" under Sup. Ct. Rule 14.1(b)(iii):

1. *PersonalWeb Technologies, LLC v. Google, LLC et al.*, N.D. Cal. No. 5:13-cv-01317-EJD, judgment entered 1/29/2020.

2. *PersonalWeb Technologies, LLC v. Facebook, Inc.*, N.D. Cal. No. 5:13-cv-01356-EJD, judgment entered 1/29/2020.

3. *PersonalWeb Technologies, LLC v. EMC Corporation et al.*, N.D. Cal. No. 5:13-cv-01358-EJD, judgment entered 1/29/2020.

4. *PersonalWeb Technologies, LLC v. Google, LLC et al.*, CAFC No. 20-1543, judgment entered 8/12/2021.

5. *PersonalWeb Technologies, LLC v. Facebook, Inc.*, CAFC No. 20-1553, judgment entered 8/12/2021.

6. *PersonalWeb Technologies, LLC v. EMC Corporation et al.*, CAFC No. 20-1554, judgment entered 8/12/2021.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner PersonalWeb Technologies, LLC ("Petitioner" or "PersonalWeb") respectfully petitions for a writ of certiorari to review the judgment of the Federal Circuit.

OPINIONS BELOW

The Federal Circuit's opinion is reported at 8 F.4th 1310 and is included in the Appendix at 1a-19a. The Federal Circuit's decision denying rehearing is not reported but is provided at 59a-61a. The district court's decision granting judgment on the pleadings is unpublished but is available at 2020 WL 520618 and reproduced at 62a-73a.

JURISDICTION

The Federal Circuit entered its decision and judgment on August 12, 2021. 2a. PersonalWeb received a 14-day extension of time to petition for rehearing on September 8, 2021. CAFC Dkt. 70-71.[1] PersonalWeb timely petitioned for rehearing on September 27, 2021 (CAFC Dkt. 74). The Federal Circuit denied the petition for rehearing on November 5, 2021. 59a-61a. This Petition is being filed by February 3, 2022, ninety days after the Federal Circuit denied the petition for rehearing. Thus, this Petition is timely under S. Ct. Rs. 13.1 and 13.3.

This Court has jurisdiction to review the decision below under 28 U.S.C. § 1254(1).

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1. "CAFC Dkt." refers to the docket entries in Federal Circuit Case No. 20-1543 below.

STATUTE INVOLVED

This case involves the following statute, set forth in the Appendix at 62a: 35 U.S.C. § 101.

STATEMENT OF THE CASE

I. Introduction: The Patent System Is in Crisis

"Patent law—and in particular the law governing patent eligibility—is in a state of crisis." David O. Taylor, Confusing Patent Eligibility, 84 TENN. L. REV. 157, 158 (2016) ("Taylor"). Since this Court's decisions in *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66 (2012) and *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014), the law of patent eligibility has been in a state of "chaos." *American Axle & Manf'g, Inc. v. Neapco Holdings LLC,* S. Ct. No. 20-891, Brief of *Amici* Senator Tillis *et al.* ("Tillis *Amicus*") at 22. Post-*Alice,* the Federal Circuit and the district courts have proven incapable of consistently applying the two-step *Alice/Mayo* test—particularly in the category of "abstract ideas." *Interval Licensing, LLC v. AOL, Inc.*, 896 F.3d 1335, 1349 (Fed. Cir. 2018) ("Of the[] three Court-created exceptions … the one … that causes the most trouble [is] 'abstract ideas.'") (Plager, J., concurring-in-part).

This chaos in the law led to an absurd result below. Petitioner's patents disclose and claim a novel computer file system that uses cryptographic hash functions to generate unique identifiers for each file in the system, based solely on each file's content. By ensuring that each file with the same content has the same identifier, and that each file with different content has a different

identifier, the new file system solved many of the problems in conventional file systems, including: (i) de-duplication: the new file system can immediately remove all duplicate copies of a file, simply by searching for the identifier, and deleting excess copies; (ii) retrieval: a user can locate a copy of a desired file, however it is named and wherever it is stored, simply by searching for the identifier; (iii) authorization: a system administrator can ensure that only authorized users have access to licensed content, however it is named and wherever it is stored, simply by searching for the identifier; and many others. *See* Section III.A. *infra*. Petitioner's new computer file system is clearly an "improvement in a technical field," and thus patent-eligible under *Alice*. Yet, in a precedential decision, the Federal Circuit held that Petitioner's ***computer file system*** invention was ***not*** "an improvement in computers as tools," but rather in "certain independently abstract ideas that use computers as tools." 16a. Thus, all claims were held ineligible as "abstract." 17a-19a.

Such results are hardly uncommon. For instance, in *Am. Axle & Mfg., Inc. v. Neapco Holdings, LLC*, 967 F.3d 1285 (Fed. Cir. 2020), a split panel of the Federal Circuit recently ruled that a patent for a ***method of manufacturing automotive driveshafts*** was ineligible as a "natural law." The full Federal Circuit denied rehearing of that decision, 6-6. The three opinions dissenting from that denial are a clear cry for help. Five judges stated that their own court's "rulings on patent eligibility have become so diverse and unpredictable as to have a serious effect on the innovation incentive in all fields of technology," and have "moved the system of patents from its once-reliable incentive to innovation and commerce, to a litigation gamble." *Am. Axle & Mfg., Inc. v. Neapco Holdings*

LLC, 966 F.3d 1347, 1358-61 (Fed. Cir. 2020). A different set of five judges stated that the Federal Circuit's cases have "strayed too far from the preemption concerns that motivate the judicial exception," and have "allow[ed] the judicial exception … to 'swallow all of patent law.'" *Id.* at 1361-65. And Judge Moore directly encouraged this Court to grant *certiorari*, stating: "***we are at a loss*** as to how to uniformly apply § 101." *Am. Axle,* 977 F.3d at 1382.

In December 2020, the *American Axle* patentee petitioned for *certiorari*. Sup. Ct. No. 20-891. Many *amici* filed briefs in support. On May 3, 2021, this Court invited the Solicitor General to file a brief—suggesting that this Court is considering granting *certiorari* in that case.

Even if it does, a decision there may not remove the "cloud of possible invalidity" that infects "[v]ast but unknowable numbers of issued patents, perhaps hundreds of thousands," in "computer technology" (*Intellectual Ventures I, LLC v. Symantec Corp.*, CAFC No. 15-1769, Dkt. 48 (*Amicus* Brief of Judge Michel) ("Michel *Amicus*") at 13-14)—just as this Court's opinion in *Diamond v. Diehr*, 450 U.S. 175 (1981) has not stopped the Federal Circuit from finding nearly all computer art patents "abstract." Without standards for "abstractness" to guide the lower courts, Section 101 challenges will remain hopelessly confused and unpredictable.

The computer industry is "the most pervasive and important one in our country today." Michel *Amicus* at 13; *see also Alice Corp. v. CLS Bank*, Sup. Ct. No. 13-298, Brief of *Amici* Microsoft *et al.* ("Microsoft *Amicus*") at 3 ("the importance of software to the progress of innovation and the economy cannot be overstated.") Stable patent

protection is essential to ensure adequate incentives to innovate in this critical industry. Michel *Amicus* at 13-14; *see also* Microsoft *Amicus* at 16 (stable protection for "computer-implemented inventions" is necessary "precisely because software innovations play such a critical role in this Nation's economy and progress.")

Unfortunately, the law on patent-eligibility of computer-implemented inventions after *Alice* has proved anything but "stable." In the words of the Federal Circuit judges themselves:

- **Judge Plager:** "The law renders it near impossible to know with any certainty whether [an] invention is or is not patent eligible" in the computing arts. *Interval Licensing,* 896 F.3d at 1348;

- **Judge Linn:** "The abstract idea exception is almost impossible to apply consistently and coherently," and "often leads to arbitrary results" in the computing arts. *Smart Sys. Innovations, LLC v. Chicago Transit Auth.,* 873 F.3d 1364, 1377 (Fed. Cir. 2017);

- **Judge Newman:** Current "abstract idea" jurisprudence "brings fresh uncertainty to an already strained innovation incentive," and "will import Section 101 invalidity into virtually all existing patents." *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1336-38 (Fed. Cir. 2020);

- **Former Chief Judge Michel:** "'Abstractness' is a vague and subjective notion that has proven entirely unworkable, and unavoidably yields

inconsistent and unpredictable results." Michel *Amicus* at 7-8.

The situation is so bad that Federal Circuit judges now admit that case outcomes turn on which panel of judges is assigned to the case on appeal. *Am. Axle*, 977 F.3d at 1382 (Judge Moore: Federal Circuit is "creating a ***panel-dependent body of law*** and destroying the ability of American businesses to invest with predictability"); *Am. Axle,* 966 F.3d at 1366 (Judge O'Malley: "One might ask why, if ***appellate judges will reach their desired result regardless of outside input*** … we should bother with the dog and pony show?"); *CLS Bank Int'l v. Alice Corp. Pty.*, 717 F.3d 1269, 1321 (Fed. Cir. 2013) (Judge Newman: "any successful innovation is likely to be challenged in opportunistic litigation, whose result will ***depend on the random selection of the panel***").

Enough is enough. "In the area of patents, it is especially important that the law remain stable and clear." *Bilski v. Kappos*, 561 U.S. 593, 613 (2010) (Stevens, J. concurring). The Federal Circuit has proven unwilling or unable to establish a stable body of law governing the patent-eligibility of computer-implemented inventions. It is time for this Court to step in. And this case presents an ideal vehicle for it to do so, because: (i) this case—with patents directed to a novel computer file system—is a perfect opportunity for this Court to delimit the scope of inventions that are patent-eligible as "improve[ments in] the functioning of the computer itself," or "improvement[s] in any other technology or technical field;" (ii) the Federal Circuit's errors below are the same errors it has consistently made in other computer cases, allowing this Court to correct an entire errant body of law in one

case; and (iii) this case also raises the recurring issue of whether the patent-eligibility inquiry involves questions of fact, which this Court did not decide in *Alice* or *Mayo*, and which has been a consistent source of controversy. *Certiorari* should be granted.

II. History of Patent-Eligibility for Computer-Implemented Inventions: 1952-2014

In intellectual property law, "a page of history is worth a volume of logic." *Eldred v. Ashcroft*, 537 U.S. 186, 188 (2003). Accordingly, before turning to the facts of this case, it is worth reviewing how the law of patent-eligibility for computer inventions arrived at its current state.

A. 1952–2010: The Pre-*Bilski* Era

35 U.S.C. § 101 defines patent-eligible subject matter as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." Congress intended the scope of eligibility to be broad: "anything under the sun that is made by man." S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952).

At the same time, this Court has long recognized an exception to the broad statutory language: "[a] principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented." *Le Roy v. Tatham,* 55 U.S. 156, 175 (1852). This Court has described that exception as being directed to the "building blocks of human ingenuity." *Alice,* 573 U.S. at 216.

This Court's first case on the patent-eligibility of computer inventions was *Gottschalk v. Benson,* 409 U.S. 63 (1972). There, the patent claimed a computation: a

method of converting a number from the "binary coded decimal (BCD)" number system to the "pure binary" number system. *Id.* at 73-74. The claims required that computation to be performed on a "general-purpose digital computer." *Id.* at 64. This Court began with the principle that "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable." *Id.* at 68. This Court held that the claimed "mathematical formula" was an unpatentable "idea," akin to a newly-discovered "phenomenon of nature." *Id.* at 68-72. The claims' requirement to perform the computation on a general-purpose computer did not save the patent, because "[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer;" thus, "the patent would wholly pre-empt the mathematical formula." *Id.* at 71-72. Accordingly, all claims were held patent-ineligible. *Id.* However, this Court explained that it was ***not*** excluding all software inventions from eligibility: "It is said that the decision precludes a patent for any program servicing a computer. ***We do not so hold***." *Id.* at 71.

This Court's next computer case was *Parker v. Flook*, 437 U.S. 584 (1978). There, the claim recited a "method of updating the value of at least one alarm limit." *Id.* at 596-597. The claim started with an initial alarm limit of "Bo + K," then performed four steps: (1) "determining" (measuring) a new value of a "process variable," such as a temperature; (2) computing a new value B_1; (3) computing a new alarm limit as $B_1 + K$; and (4) updating the value of the alarm limit in a computer to the new value. *Id.* The claim preamble also recited that the method should be performed "in a process comprising the catalytic chemical conversion of hydrocarbons." *Id.*

This Court held the claim ineligible in a 7-2 decision. 437 U.S. at 585-596. The majority held that the "claim [was] directed essentially to a method of calculating," which is "nonstatutory." *Id.* at 595. The "determining" step (step 1) did not save the claim, because it was simply a necessary data-gathering step to collect inputs for the computation. *Id.* at 585-586. The "updating" step (step 4) also did not save the claim, because it was insignificant "post-solution activity." *Id.* at 590-591. And the requirement to perform the step in a "catalytic chemical conversion" did not save the claim, because simply limiting an ineligible computation to a specific industry is also "post-solution activity." *Id.* Thus, the claim was held ineligible. However, this Court was again careful to state that it was ***not*** categorically excluding software patents: "Neither the dearth of precedent, ***nor this decision***, should therefore be interpreted as reflecting a judgment that patent protection of certain novel and useful computer programs will not" be allowed. *Id.* at 595.

This Court's final early computer case was *Diamond v. Diehr*, 450 U.S. 175 (1981). There, the claims recited a method of operating a rubber-molding press. *Id.* at 179, n. 5. The claims recited various mechanical steps, including "heating [a] mold," "installing prepared unmolded synthetic rubber," etc. *Id.* However, all of the mechanical steps were conventional in the industry. *Id.* at 180. The claims also recited using a "computer," "repetitively calculating in the computer … the Arrhenius equation," and "opening the press automatically" when the results of the computation indicated the cure was complete. *Id.* at 179, n.5. The Arrhenius equation was the standard equation used in the industry to compute cure time. *Id.* at 177-178. Although all of the elements of the claims

were individually known, the inventor alleged that the ***combination*** of these steps into a new automated process was a new, useful, and eligible invention. *Id.* at 177-180.

This Court agreed. *Id.* at 185-193. It distinguished *Benson* and *Flook* on the grounds that, in those cases, the inventor was "seek[ing] to patent a mathematical formula" *per se*, whereas in *Diehr*, the invention was an improved industrial process ***incorporating*** a mathematical formula. *Id.* at 187. This Court held that "[i]n determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be ***considered as a whole***."[2] *Id.* at 188. It further held that "[i]t is ***inappropriate*** to dissect the claims into old and new elements and then to ignore the presence of the old elements in the [§ 101] analysis." *Id.* at 188-189. "The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within § 101." *Id.* Applying that analysis, the majority held that the claims as a whole were directed to patentable subject matter, even though every element alone was known, and even though the claims recited a mathematical computation. *Id.* at 191-192. Notably, this Court did so in a single step analysis, not a "two-step" analysis. *Id.*

Justice Stevens—the author of *Flook*—dissented. His dissent argued that certain language in *Flook* required

2. That rule followed from the well-established principle that a "patent covers ***only the totality of the elements*** in the claim and that no element, separately viewed, is within the grant … there is no legally recognizable or protected 'essential' element, 'gist' or 'heart' of the invention." *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 344 (1961).

the Court to treat "the [computer-implemented] algorithm [the Arrhenius equation] as though it were a familiar part of the prior art," and then examine the *rest* of the claim "to determine whether it discloses 'some ***other*** inventive concept.'" *Id.* at 204. But the majority expressly rejected that analysis. *Id.* at 188-189, n. 12. It held that *Flook* did ***not*** endorse "the procedure of dissecting a claim into old and new elements … [in which] a mathematical algorithm must be assumed to be within the 'prior art.'" *Id.* It so held because: (i) "carried to its extreme, [this analysis would] make all inventions unpatentable;" and (ii) the dissent's analysis would improperly import novelty into the § 101 analysis. *Id.*

This Court did not take another patent-eligibility case for thirty years. In the meantime, in 1994, the *en banc* Federal Circuit decided *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994). There, the Federal Circuit held that "a general purpose computer programmed to carry out" software, by itself, was patent-eligible under § 101. *Id.* at 1545. This is generally recognized as the first case to affirm the eligibility of computer software *per se*. Adam Mossoff, *A Brief History of Software Patents (and Why They're Valid),* 56 Ariz. L. Rev. Syllabus 65, 68 (2014) ("Mossoff"). Four years later, in *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), the Federal Circuit ruled that computer-implemented business methods are also patent-eligible.

B. 2010-2014: *Bilski, Alice*

After *Diehr*, this Court's next Section 101 case was *Bilski v. Kappos*, 561 U.S. 593 (2010). There, the claims were for a pure business method: a method of hedging

commodity price risk. *Id.* at 599. The claims did not even require performing the method on a computer—human performance would have infringed. *Id.* At the Federal Circuit, the *en banc* court had held that the "sole test" for patent-eligibility for processes was the "machine-or-transformation" test. *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008). It then held the claims ineligible under that test. *Id.*

On *certiorari*, this Court affirmed the result, but rejected the Federal Circuit's reasoning. *Bilski*, 561 U.S. at 613. The "entire court" agreed that the machine-or-transformation test was ***not*** the "sole test" for patent-eligibility, but only a "useful and important clue." *Id.* at 605, 613. The entire court also agreed that the claims were patent-ineligible. *Id.* However, no majority of Justices agreed on why. Four justices would have held that business methods are categorically excluded from patent eligibility. *Id.* at 613-657. But Justice Kennedy, in the leading opinion, refused to go so far. *Id.* at 606-609. Instead, he held that the claimed business method was a "fundamental economic practice," and thus an "unpatentable abstract idea." *Id.* at 611-612.

This Court last addressed patent eligibility of "abstract ideas" in *Alice*, 573 U.S. 208. There, as in *Bilski,* the claims recited a pure business method: a "method of exchanging obligations between parties." *Id.* at 213. The Court called this method "intermediated settlement." *Id.* at 218-219. The method was long-known in the art. *Id.* at 219-220. The only claimed "advance" was to perform this "fundamental economic practice" on a "generic computer." *Id.* at 221-224. This Court held the claimed business method itself to be an "abstract idea" under *Bilski. Id.*

at 218-221. It then held that the claims' instruction to implement the method on a general-purpose computer did not "transform the claimed abstract idea into a patent-eligible application" of the abstract idea. *Id.* at 221-224. Thus, the claims were patent-ineligible. *Id.*

Taken on its facts, *Alice* is unremarkable. *Bilski* established that a pure business method is patent-ineligible (either categorically, or as an "abstract idea"). *Alice* simply took *Bilski* to the next logical step: if a pure business method is unpatentable, then a pure business method implemented on a general purpose computer is also patent-ineligible. *Id.* at 225. Indeed, in *Alice*, this Court was careful to state that it was ***not*** trying to "delimit the precise contours of the 'abstract ideas' category" in every case. *Id.* at 221. Rather, it simply held that "there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement." *Id.*

Yet that is not how lower courts have interpreted *Alice*. The lower courts have interpreted *Alice* as *carte blanche* to invalidate virtually any patent with any relation to computer technology. They do so by creating an ever-expanding list of technologies that they deem "abstract" in *Alice* step one, and then, in *Alice* step two[3], dividing

3. The two steps of the *Alice/Mayo* framework are: (i) in step one, "determine whether the claims at issue are directed to one of [the] patent-ineligible concepts;" and (ii) in step two, "ask, [w]hat else is there in the claims before us?" *Alice,* 573 U.S. at 217-218. This Court has described the second step as a search for "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 [concept] itself." *Id.*

the claim limitations into those that are inventive, those that are "abstract," and those that are conventional. This framework all but guarantees that computing-art inventions cannot overcome a Section 101 challenge. Indeed, in step one, lower courts easily distill computer-related inventions into various "abstract" statements. They then interpret this Court's statement that step two involves a search for "additional elements" that recite "significantly more than a patent upon the [ineligible concept] itself" (*Alice,* 573 U.S. at 217-218) to mean that, in step two, all elements "directed to" the ineligible concept are ***read out*** of the claim, and only the ***remaining*** elements are considered. *See BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). If the "remaining" elements, after the "ineligible" elements are read out of the claim, are "well-understood, routine, or conventional," then lower courts find the claims ineligible. *BSG*, 899 F.3d at 1291. This distillation of claims into "abstract" statements, followed by (i) ***dissecting*** claims into their "ineligible" and "eligible" elements; (ii) ***disregarding*** the "ineligible" elements, and determining whether the ***remaining*** elements recite an "inventive concept;" and (iii) in so doing, ***discounting*** any elements that were "well-understood, routine, and conventional" (*BSG*, 899 F.3d at 1290-91), is not what this Court's *Alice* decision intended.

It is also directly contrary to *Diehr*. As discussed above, the *Diehr* dissent wanted to establish a rule in which claims are "dissect[ed] … into old and new elements," and courts "ignore the presence of the old elements in the analysis." *Diehr*, 450 U.S. at 188. The dissent even had a name for this: the search for an "inventive concept." *Id.* at 204. But the majority ***rejected*** that rule, instead holding that "[i]n determining [§ 101] eligibility … claims must

considered ***as a whole***." *Id.* at 188. And *Alice* did not overrule *Diehr:* to the contrary, it expressly stated that it was "***consistent*** with [*Diehr's*] general rule that patent claims 'must be considered as a whole,'" because the *Alice/Mayo* two-step approach "considers all elements, both individually ***and in combination***." *Alice*, 573 U.S. at 218, n. 3 (emphasis added).

To sum up: in fifty years of jurisprudence, this Court has only ever held two types of inventions patent-ineligible as directed to an "abstract idea:" (i) business methods (*Bilski*, *Alice*); and (ii) mathematical algorithms (*Benson, Flook*). And this Court has consistently held that it is improper to "dissect" claims into new and old elements, and ignore the old elements, under § 101.

III. Petitioner's Invention Is Patent-Eligible Under this Court's Precedent

Had Petitioner's patents been challenged for eligibility the day after *Alice*, they would have easily survived. Petitioner's invention is a novel computer file system. A computer file system is neither a "business method" nor a "mathematical computation"—the only categories of inventions that this Court has ever held "abstract." Rather, it is an improvement in a "technical field." Thus, the day after *Alice*, Petitioner's claims were patent-eligible. It is only the accretion of the Federal Circuit's post-*Alice* precedent, creating an ever-expanding list of technologies effectively excluded from patent-eligibility, that led to the absurd result (and the "chaos") below.

A. Petitioner's Novel, Non-Obvious Computer File System

Petitioner owns a family of patents which it calls the "True Name" patents. Three patents are at issue: U.S. Pat. Nos. 6,415,280 (Appx204-259)[4] ("'280 patent"), 7,802,310 (Appx322-382) ("'310 patent"), and 7,949,662 (Appx383-442) ("'662 patent"). All three patents name the same inventors, all three claim priority to the same application filed on April 11, 1995, and all three have the same specification.

As the patents explain, in 1995—and even today—most computer file systems identify, save, and locate files by user-selected filenames and directories. Appx360-361, 1:49-3:47. For instance, an attorney might save a file at C:\PersonalWeb\Certiorari\Petition.doc. To perform operations on the file (e.g., "open"), a user must know its name, and know where it is saved. For a single computer with a single user, this is not a problem. However, in large, distributed computer systems with many users, it is a problem. *Id.* Users could save files in inconsistent directories or with inconsistent filenames, making it difficult for others to locate the file. *Id.* Indeed, users could save the same file with different filenames, or different files with the same filename, leading to unnecessary duplication, and confusion as to which files are actually in the system. *Id.* The inventors realized that, unless these limitations were surmounted, it would become infeasible to accurately identify, locate, retrieve, and synchronize data within large file systems. *Id.*

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4. Cites to "Appx__" are to the Joint Appendix in the Federal Circuit, CAFC No. 20-1543, Dkt. 49.

At around the same time, in 1991, Dr. Ronald Rivest invented and published the "MD4," or "message digest 4" algorithm. *See* Rivest, R., "The MD4 Message Digest Algorithm" (1991), available at https://link.springer.com/content/pdf/10.1007/3-540-38424-3_22.pdf. The MD4 algorithm "takes an input message of arbitrary length and produces an output 128-bit 'fingerprint' or 'message digest', in such a way that it is (hopefully) computationally infeasible to produce two messages having the same message digest." *Id.* at 1. Dr. Rivest developed the MD4 algorithm for use in "digital signature applications" in a "public-key cryptosystem." *Id.* That is: the MD4 algorithm was designed for use in cryptography, not computer file systems. *Id.* Dr. Rivest subsequently refined MD4 into the "MD5" algorithm in 1992 (https://datatracker.ietf.org/doc/html/rfc1321), and others refined it into an algorithm called "SHA" in 1993 (https://www.sciencedirect.com/topics/computer-science/secure-hash-algorithm).

The inventors learned about the MD4, MD5, and SHA message digest ("MD") algorithms (Appx365-366, 12:20-13:67), and had a breakthrough. Those algorithms convert any computer file, of any length, to a single number that is virtually guaranteed to uniquely identify the file. *Id.* The inventors realized that, by using the MD value of a file as its "name" or "identifier," a file system could uniquely identify each file within the system, solely by its content. *Id.* That would solve all of the above-listed problems: all files with the same content would be guaranteed to have the same "name" or identifier, and all users could be guaranteed to locate that file, wherever it was saved on the system, simply by querying the identifier. Appx361, 3:50-4:59. The inventors called their idea of identifying computer files by their MD values a "True Name." Then, they got to work.

The inventors developed a detailed "file system" to implement the True Name concept. Appx362, 6:25-32. This file system was designed to work on top of an "existing operating system," such as MS-DOS or Microsoft Windows. *Id.* The True Name system comprised a number of detailed data structures, including a "local directory extensions (LDE) table," a "True File registry," a "region table," a "license table," and others. Appx363, 8:2-63. The file system also comprised forty-eight separate "mechanisms" (operations), each of which took advantage of the True Name concept to improve file system functionality. Appx362-363, 6:38-7:44. At the heart of it all was the True Name itself. Each file added to the system was processed by one of the MD algorithms, and the resulting value was stored as that file's "True Name." Appx365-366, 12:20-14:48. That True Name was then saved, along with the file's conventional filename and directory path, in the "LDE table" and "True File registry." Appx363-364, 8:64-9:62.

By linking the file's filename/path with its "True Name," numerous advantages were achieved. Appx361, 3:63-4:52 (listing advantages). These include: (i) deduplication—the new file system can easily find and delete duplicate copies of files, simply by looking for files with the same True Name (Appx373, 27:20-34); (ii) retrieval—a user can easily retrieve a particular file by True Name, regardless of how other users named the file, or where it was stored (Appx367, 15:60-16:63); (iii) authorization—administrators can easily ensure users are not using unauthorized files by searching the system for the file's True Name (Appx375, 31:3-33); and many others.

B. Petitioner's Invention Is Eligible Under *Alice*, *Diehr, Flook* and *Benson*

Petitioner asserted infringement of '310 patent, claims 24, 32, 81, 82, and 86; '280 patent, claims 15, 16, 31, and 32; and '662 patent, claim 33. 3a. All asserted claims recite using True Names to perform functions in the True Name file system. 4a-6a. The '310 claims recite using True Names to control access to files, the '280 claims recite using True Names to retrieve files based on their content, and the '662 claims recite using True Names to de-duplicate files. *Id.*

'310 claim 24, which the Federal Circuit took as representative, is reproduced in the Appendix at 4a-5a. This claim recites a "computer-implemented method" comprising steps (a) and (b), where step (b) comprises sub-steps (i)-(iii). *Id.* In step (a), a "first computer" sends a "request" for a "data item" to a "second computer." *Id.* That "request" includes a "content-dependent name" for the data item. *Id.* The "content-dependent name" is computed by "a message digest function or a hash function," based on "the contents of the particular data item," such that "two identical data items will have the same content-dependent name." *Id.* Thus, the content-dependent name is the ***True Name***—the unique identifier computed by running the file through an MD function.

In step (b), the "second computer" performs three actions. First, it "compares" the content-dependent name of the requested file "to a plurality of values." 5a. The specification indicates that this takes place in the "license table." Appx365, 11:33-45; Appx375, 31:4-32. The license table stores, for each "licensable data item,"

the True Name of the data item, and a list of "licensees" authorized to access it. *Id.* Thus, the "comparison" in step (b)(i) is between True Name of the file requested by the first computer, and the list of True Names in the second computer's license table. In step (b)(ii), the second computer looks through the list of "licensees" for the given True Name, and determines whether the first computer is a licensee. Finally, in step (b)(iii), if the second computer determines that the first computer is not a licensee, it denies access to the file. 5a.

The technical improvement that this invention provided over conventional file systems is clear. In conventional systems—where files are identified by user-selected file names—a user could easily circumvent this authorization check simply by ***changing the file name***. By using True Names, however—which always ***uniquely*** identify each file—the system ensures that only authorized users can access the file. Appx375, 31:4-32. The '280 claims similarly recite technical improvements in using True Names to uniquely store and retrieve files (28a-29a), and the '662 claims recite technical improvements in using True Names to de-duplicate files (30a-32a).

Under this Court's precedent, these claims are patent-eligible. All asserted claims recite performing a mathematical computation—computing the "True Name" of a data file, via one of the MD functions. A claim directed to that computation itself—*e.g*, "A method of computing the MD4 value on a computer"—would be patent-ineligible under *Benson*. But Petitioner's claims recite "significantly more." Petitioner's claims incorporate the MD calculation into specific technical operations in a computer file system: determining file authorization in the '310 patent, storing

and retrieving files in the '280 patent, and de-duplicating files in the '662 patent. Thus, the claims are not a patent on the "algorithm itself," and do not run afoul of *Benson*.

Petitioner's claims also do not run afoul of *Flook*. Unlike *Flook*, Petitioner's claims do not simply recite the MD algorithms, and then recite "insignificant pre- or post-solution activity." *Flook*, 437 U.S. at 590-591. Rather, Petitioner's claims integrate the MD algorithms into specific technical operations that take advantage of their key feature: unique bitwise file identification. Moreover, Petitioner's claims do not "wholly preempt" the MD algorithms—all uses of those algorithms, outside the specific file system functions claimed, remain open. *Id.* at 589-590. That includes the uses Dr. Rivest originally had in mind—uses in cryptography. Finally, Petitioner's claims are not simply limited to computing the MD algorithms in a particular technical field. *Flook*, 437 U.S. at 590-591. Rather, they use the MD algorithms in specific, new ways, to perform specific file system operations. Thus, they do not run afoul of *Flook*.

Petitioner's claims also do not run afoul of *Alice*. First, unlike *Alice*, Petitioner's claims are not for a business method. They are for a computer file system—an improvement in a "technical field." *Alice*, 573 S. Ct. at 225. Second, unlike *Alice,* Petitioner's claims do not simply recite the "ineligible concept" (the MD algorithm), and then say, "apply it on a general purpose computer." Rather, they recite a detailed series of computer operations that "transform" the claims into something "significantly more." Thus, they are eligible under *Alice*.

Finally, Petitioner's claims are eligible under *Diehr*. As in *Diehr*—which recited the known Arrhenius

equation—Petitioner's claims recite a known mathematical algorithm, the MD functions. But, like *Diehr*, Petitioner's claims incorporate that algorithm into specific, useful computer operations that produce useful results. Thus, the claims are eligible under *Diehr*.

In sum: had this case been decided the day after *Alice*, Petitioner would have prevailed.

IV. The Federal Circuit's Inconsistent and Erroneous Post-*Alice* Precedent

Shortly after *Alice*, there were signs that the Federal Circuit would heed this Court's admonition that improvements in the "functioning of the computer itself" or in a "technical field" remain patent-eligible. *Alice*, 573 S. Ct. at 225. A few months after *Alice*, the Federal Circuit decided *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). There, the claims were for a software-based system of fusing the "look and feel" of a host's website with content from a third-party advertiser's website. *Id.* at 1249-1250. The claims were written at a high level of generality, and were arguably directed to a "business method"—a method of retaining viewers at a website through tailored advertising. *Id.* Nonetheless, the Federal Circuit held the claims eligible at step one, because "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id.* at 1255-59.

The Federal Circuit expanded upon *DDR* in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016). There, the claims were directed to pure software—a new

type of "relational database." *Id.* at 1331-36. The court stated that, at step one, the test for computer-implemented inventions is whether "the focus of the claims is on the specific asserted improvement in computer capabilities … or, instead, on a process that qualifies as an 'abstract idea' for which computers are invoked merely as a tool." *Id.* at 1335-36. The court then held that the relational database claims at issue were of the first type, and were patent-eligible. *Id.* at 1336-39.

Unfortunately, in the second clause of *Enfish*—"computers invoked merely as a tool"—the *Enfish* panel sowed the seeds of its own rule's destruction. The distinction between an "asserted improvement in computer capabilities" and computers being "invoked merely as a tool" has proven so subjective that different Federal Circuit judges are able to place virtually ***any*** computer-implemented invention on ***any*** side of the line they choose. The result has been, as Judge Moore admits, a "panel-dependent body of law." *Am. Axle,* 977 F.3d at 1382.

Due to this panel-dependence, the Federal Circuit's cases applying *DDR* and *Enfish* are hopelessly irreconcilable. For instance, in *Enfish*, the panel held a new type of database software patent-eligible. But in *Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315 (Fed. Cir. 2017), a different panel held a different type of database software—claimed at the same level of generality—patent-***ineligible***. There is no meaningful difference between the cases—except the composition of the panel. Similarly, in *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299 (Fed. Cir. 2018), the Federal Circuit found a new type of virus-scanning software eligible. But in *Intell. Ventures I LLC v. Symantec Corp.*, 838 F.3d

1307 (Fed. Cir. 2016), the Federal Circuit found a different type of virus-scanning software—claimed at the same level of generality—patent-***ineligible***. *Id.* There, Judge Stoll—in dissent—expressly stated that the holding was inconsistent with other Federal Circuit precedent. *Id.* at 1329-1331. And *in McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), the Federal Circuit held that software for generating ***animated*** facial features was patent-eligible. But in *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322 (Fed. Cir. 2017), the Federal Circuit held that software for generating ***static*** facial features was patent-***ineligible***. There was no meaningful distinction between the technology or the claims—merely the composition of the panel.

And this is just the tip of the iceberg. The indeterminacy below has led to absurd results. For instance, in *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019), the Federal Circuit held that a ***physical*** network of electric vehicle charging devices was ineligible as an "abstract idea." In *Chamberlain Group, Inc. v. Techtronic Industries Co.*, 935 F.3d 1341 (Fed. Cir. 2019), the Federal Circuit held that a ***garage door opener***—something that physically opens a door!—was ineligible as an "abstract idea." And in *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364 (Fed. Cir. 2017), the Federal Circuit held that a system for governing physical access to a mass transit system—physical access—was ineligible as an "abstract idea."

V. The Federal Circuit's Erroneous Decision in this Case

All of this leads to the Federal Circuit's erroneous decision in this case. In 2019—after these cases had

been pending for eight years—Defendants moved for judgment on the pleadings under Rule 12(c). In opposition, Petitioner submitted an 87-paragraph Declaration from its expert, Dr. Samuel Russ, explaining why the True Name inventions are "improvements in computer technology itself" or in a "technical field." Appx3789-3816. Because extrinsic evidence cannot be considered on a Rule 12(c) motion, Petitioner asked the district court to convert the motion to a summary judgment motion under Rule 12(d). 38a-40a. But the district court refused, and refused to consider the Russ Declaration. *Id.* Thus, even though the cases had been pending for eight years, Petitioner was denied any chance to submit evidence in defense of its patents.

Turning to the merits, the district court held all challenged claims ineligible as "abstract ideas." 41a-58a. Petitioner appealed. On appeal, the Federal Circuit applied this Court's two-step *Alice* framework in a way directly at odds with this Court's precedent, and affirmed. 3a-19a.

At *Alice* step one, the Federal Circuit found the asserted claims to be "directed to" three separate "abstract ideas:" "(1) using a content-based identifier generated from a 'hash or message digest function,' (2) comparing that content-based identifier against something else, [that is,] another content-based identifier or a request for data; and (3) providing access to, denying access to, or deleting data." 10a. The Federal Circuit held that each idea was individually "abstract," and that "[s]tringing together the claimed steps by … adding one abstract idea … to another" made them no less abstract. 10a-15a. Thus, the claims were held "abstract" at step one. *Id.*

This was wrong, and directly contrary to this Court's precedent, for at least four reasons.

First, it ignored this Court's direction that the claimed subject matter must be considered "as a whole." *Diehr*, 450 U.S. at 188. The Federal Circuit should have looked at the claims ***as a whole*** to see whether they recited an "abstract idea"—not broken them into individual steps, and analyzed whether each is separately "abstract." That alone would have changed the result.

Second, the Federal Circuit's identification of the "abstract ideas" was both too narrow and too broad. It was too broad because the Federal Circuit identified two concrete computer steps—"(2) comparing that content-based identifier against something else" (which requires processing in the CPU), and "(3) providing access to, denying access to, or deleting data" (which physically transports or modifies data) as "abstract." This Court has never held that such concrete computer steps are "abstract"—only "fundamental economic practices" and "mathematical computations."

Meanwhile, "abstract idea (1)" was too narrow, because the Federal Circuit never accounted for the key advantage of MD functions—that they ensure a virtually unique identifier for each file. To the contrary: the Federal Circuit deemed the claimed "content-based identifiers" to be essentially the same as a "library call system." 11a-12a. That analogy is absurd. A library call number is a ***human-assigned*** number, in which a human decides what a book is "about." Those subjectively-assigned numbers cannot ensure that two books in different libraries are the same, because different librarians might apply different

numbers. By contrast, the claimed "content-dependent names" are mathematically generated by the MD function, ensuring that two identical files will ***always*** have the same "name." That is the key feature the enables the benefits of the invention—yet the Federal Circuit ignored it completely. 11a-13a.

Third, *Benson, Flook*, and *Diehr* make clear that the "abstract idea" should have been identified as the claimed "message digest function or hash function." Like the BCD conversion algorithm in *Benson*, the alarm limit update algorithm in *Flook*, and the Arrhenius equation in *Diehr*, the "message digest function or hash function" is a specific class of mathematical algorithms—e.g., MD4, MD5, and SHA—which perform specific mathematical computations. Apart from business methods, ***only*** such mathematical algorithms have been held "abstract" by this Court. Thus, the "abstract idea" should have been defined as the message digest algorithm itself. With such a definition, it would have been clear that the claims were directed to "significantly more," because they recite new and useful processes that ***implement*** the algorithm.

Fourth, in summing up, the Federal Circuit came to a remarkable conclusion. Even though Petitioner's claims are directed to a novel ***computer file system***, it held: "the focus of the claims is not on … an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools." 16a. Let that sink in. It held that a new computer file system—something that goes to the very heart of how a computer works—is not an "improvement in computers as tools," but merely an abstract idea that incidentally uses "computers as tools." This would be inconceivable, were it not so common.

Indeed, this is the same conclusion that the Federal Circuit came to in *Erie*, *Symantec*, *RecogniCorp*, and countless other computer cases.

At *Alice* step two, the Federal Circuit did something else this Court has instructed it not to do—it read the elements it deemed "abstract ideas" out of the claims, and looked for an "inventive concept" only in the "remaining" elements. 17a-18a. Of course, it found none. At step one, the Federal Circuit defined the "abstract idea" as being essentially the entire claim. Accordingly, at step two, it found that there was "not much" remaining in the claims, after the abstract ideas were read out. *Id.* Thus, all claims were held ineligible. The Federal Circuit gave no weight to the critical advantage provided by MD functions—unique identification of files—despite its recognition that it was supposed to view all claim elements "as an ordered combination." 8a, 17a-18a.

The end result was that at ***neither*** step did the Federal Circuit do what it was supposed to do: consider the claim ***as a whole***, including the advantages of MD functions, to see whether they recited a patent-eligible application of those functions. This theme—failing to consider the claims as a whole—runs through virtually all of the Federal Circuit's post-*Alice* cases invalidating computer inventions, including *Erie*, *Symantec*, *RecogniCorp*, *ChargePoint*, *Chamberlain*, and *Smart Sys.* *Certiorari* is needed to correct the Federal Circuit's runaway case law.

ARGUMENT

Certiorari is proper where a "court of appeals has decided an important question of federal law that has not been, but should be, settled by this Court," or "has decided an important federal question in a way that conflicts with relevant decisions of this Court." S.Ct. R. 10. Both factors are present here, making *certiorari* proper. *See* Sections I-II *infra*.

The question presented is also important—indeed, critical. According to one study, in the first five years after *Alice*, the Federal Circuit found 52 of the 65 computer or software patents that reached it—***80%***--patent-ineligible. *See* Gibson Dunn, Chart of Post-*Alice* Cases (March 1, 2019), https://www.gibsondunn.com/wp-content/uploads/2019/03/Overview-of-Section-101-Patent-Cases-Decided-After-Alice-v-CLS-as-of-03-01-19.pdf. While not quite a *per se* rule of ineligibility for computer patents, the current situation is arguably worse: everyone knows that most computer patents are now likely ineligible, but no one knows ***which ones***. *See RecogniCorp, LLC v. Nintendo Co., Ltd.*, Sup. Ct. No. 17-645, *Amicus* Brief of Intellectual Property Law Professors ("*RecogniCorp Amicus*") at 2. That crippling uncertainty has cast a "devastating" pall over the "high tech" industries. https://www.ipwatchdog.com/2017/09/19/judge-paul-michel-presents-supplemental-testimony-ptab-reforms/id=88047/ (testimony of Chief Judge Michel). *Certiorari* should be granted to remove that pall, and restore order to the patent system.

I. The Petition Raises an Important Question of Unsettled Federal Law

In *Alice*, this Court stated that inventions that "improve the functioning of the computer itself" or "effect an improvement in any other technology or technical field" should be patent-eligible. 573 U.S. at 225. However, the *Alice* Court had no occasion to provide guidance on which inventions qualify as such technical "improvements," because the *Alice* claims did not improve ***any*** technology (computer or otherwise): they were for a pure business method. *Id.* Thus, this Court has not articulated the legal standards that govern when an invention is patent-eligible as an improvement in "the computer itself" or in "any other technology or technical field."

In the absence of guidance from this Court, the Federal Circuit attempted to set such standards itself in *DDR Holdings* and *Enfish*. There, the Federal Circuit articulated two tests: (i) a computer invention is eligible if "the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks" (*DDR*, 773 F.3d at 1255-59); and (ii) a computer invention is eligible if "the focus of the claims is on [a] specific asserted improvement in computer capabilities," rather than "an 'abstract idea' for which computers are invoked merely as a tool" (*Enfish*, 822 F.3d at 1335-36). But those tests have proven hopelessly subjective, and incapable of providing consistent results. Applying those tests, the Federal Circuit has held that: (i) new database software is both eligible (*Enfish*, 822 F.3d at 1335-36) and ineligible (*Erie,* 850 F.3d at 1325-32); (ii) new virus-scanning software is both eligible (*Finjan,* 879 F.3d at 1303-06) and ineligible

(*Symantec*, 838 F.3d at 1319-22); (iii) new software for generating facial features on a computer is both eligible (*McRo*, 837 F.3d at 1311-16) and ineligible (*RecogniCorp*, 855 F.3d at 1326-28); (iv) a new graphical user interface is both eligible (*Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1361-63 (Fed. Cir. 2018)) and ineligible *(Internet Pats. Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1344–49 (Fed. Cir. 2015)); and (v) new improvements in a computer "file system" are both eligible (*SRI Int'l, Inc. v. Cisco Sys., Inc.*, 930 F.3d 1295, 1302-07 (Fed. Cir. 2019)) and ineligible (this case).

The result is that no one—not attorneys, not companies, not inventors, and not investors—has any idea which computer patents are, and are not, patent-eligible. As Professor Mossof and others explain, the Federal Circuit's post-*Alice* case law on "abstract ideas" has had the dual problem of being both "indeterminate" and "overly restrictive." *RecogniCorp Amicus* at 2. It is "indeterminate" in that the Federal Circuit's inconsistent results have left "little predictability for inventors or patent attorneys" as to what inventions are, and are not, eligible. *Id.* And it is "overly restrictive" in that the Federal Circuit's muddled analysis has repeatedly invalidated "computer-mediated processes that are exactly the kind of innovation that the patent system is designed to promote." *Id.* Former Chief Judge Michel put it starkly: "recent [abstract idea] cases are unclear, inconsistent with one another and confusing. I myself cannot reconcile the cases … Nor can I predict outcomes in individual cases with any confidence … If I, as a judge with 22 years of experience deciding patent cases on the Federal Circuit's bench, cannot predict outcomes … how can we expect patent examiners, trial judges, inventors and investors to do so?" Tillis *Amicus* at 9.

Given the crippling inconsistency below, this Court should grant *certiorari* to provide guidance on which computer-implemented inventions are, and are not, eligible. In particular, this Court should clarify standards for when an invention qualifies as an "improvement in computer technology itself," or an "improvement in another technical field." That guidance should include, at least: (i) affirming that the analysis must look at the claims "as a whole;" (ii) affirming that the claims must not be "dissected" into new and old (or eligible and ineligible) elements, and that no elements are "read out" of the claims in the analysis; and (iii) affirming that the judicial exceptions are only intended to exclude ***fundamental*** building blocks of human ingenuity (such as a pure mathematical computation)—not new developments in computer (or other) technology.

Certiorari will also give this Court an opportunity to address a subsidiary question that has caused substantial confusion below: the extent to which patent eligibility involves underlying questions of fact. That question was ***not*** answered in *Alice, Mayo,* or any other case of this Court.

In *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018) and *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018), the Federal Circuit acknowledged that *Alice* step two involves underlying questions of fact. Since all factual inferences must be drawn in favor of the non-movant on a Rule 12(c) motion, that alone should have precluded dismissal of Petitioner's complaint. However, the district court and Federal Circuit dismissed Petitioner's "fact question" arguments out of hand, deeming any disputes of fact not "genuine."

19a, 55a-58a. This is common: even after *Aatrix* and *Berkheimer*, courts have still been dismissing patent cases on Section 101 grounds on the pleadings at a rate of 40%. Eric M. Acker, *Business As Usual After Berkheimer?*, Fed. Law., May/June 2019, at 52-53. This suggests that courts have not truly credited the significant factual questions underlying patent-eligibility. *Certiorari* would give this Court an opportunity to weigh in on this critical recurring question—a question that implicates all patent owners' due process and Seventh Amendment rights.

II. The Federal Circuit's Opinion Conflicts with Decisions of this Court

Certiorari should also be granted because the Federal Circuit's decision below—like its decisions in *RecogniCorp*, *ChargePoint*, *Chamberlain*, *Smart Sys.*, *Symantec, Erie*, and many other computer cases—is directly inconsistent with *Diehr* and *Alice*, in at least five ways:

1. At step one, the Federal Circuit improperly failed to look at the claimed invention "as a whole," but instead broke the claims down into individual steps, and looked at whether the steps were ***individually*** abstract—in contravention of *Diehr*, 450 U.S. at 188-189[5];

2. At step one, the Federal Circuit defined the alleged "abstract idea" too broadly, sweeping in concrete computer operations that this Court has never held to be "abstract ideas;"

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5. Indeed, this is the primary error that has led the Federal Circuit astray in most of its post-*Alice* computer cases. *See RecogniCorp Amicus* at 2-3.

3. At step one, it also defined the alleged "abstract idea" too narrowly, by failing to credit the technical benefits of the invention—in violation of *Alice*, 573 U.S. at 218-221, 225-226;

4. At step two, it improperly read the claim elements that it deemed "abstract ideas" out of the claim, in violation of *Diehr's* instruction that claims are ***not*** to be "dissected" into eligible and ineligible elements (*Diehr,* 450 U.S. at 188-189); and

5. At step two, it failed to consider the claim as an "ordered combination," but instead looked only at individual elements, in violation of *Alice*, 573 U.S. at 221-226.

These violations of precedent are not new or uncommon—they are the same errors the Federal Circuit has made in virtually every case improperly invalidating computer-based inventions as "abstract ideas." Thus, *certiorari* should be granted, both to correct the violation of precedent in this case, and to correct the Federal Circuit's entire errant jurisprudence in this field.

Finally, the question presented is important. According to former USPTO Director Iancu, "101 remains the most important substantive patent law issue in the United States today. And it's not even close." https://www.law360.com/articles/1149185/courts-can-resolve-patent-eligibility-problems-iancu-says?copied=1. Nowhere is that truer than in the area of computer inventions and "abstract ideas"—the area of § 101 law that "causes the most trouble." *Interval Licensing,* 896 F.3d at 1349. In order to restore the critical incentive to innovate in the

computing arts, *certiorari* should be granted, and this Court should set clear standards for eligibility.

CONCLUSION

For the foregoing reasons, *certiorari* should be granted.

Dated: February 3, 2022

Respectfully submitted,

LAWRENCE M. HADLEY
Counsel of Record
STEPHEN UNDERWOOD
GLASER WEIL FINK HOWARD
AVCHEN & SHAPIRO LLP
10250 Constellation Boulevard,
19th Floor
Los Angeles, California 90067
(310) 553-3000
lhadley@glaserweil.com

Counsel for Petitioners

APPENDIX

APPENDIX A — OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED AUGUST 12, 2021

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

2020-1543, 2020-1553, 2020-1554

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant,

v.

GOOGLE LLC, YOUTUBE, LLC,

Defendants-Appellees.

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01317-EJD, Judge Edward J. Davila.

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant,

v.

FACEBOOK, INC.,

Defendant-Appellee.

Appendix A

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01356-EJD, Judge Edward J. Davila.

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant,

LEVEL 3 COMMUNICATIONS LLC,

Plaintiff,

v.

EMC CORPORATION, VMWARE, INC.,

Defendants-Appellees.

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01358-EJD, Judge Edward J. Davila.

August 12, 2021, Decided

Before LOURIE, PROST*, and REYNA, *Circuit Judges.*

PROST, *Circuit Judge.*

* Circuit Judge Sharon Prost vacated the position of Chief Judge on May 21, 2021.

Appendix A

PersonalWeb Technologies appeals a decision by the United States District Court for the Northern District of California granting judgment on the pleadings for appellees Google LLC, YouTube, LLC, Facebook Inc., EMC Corporation, and VMware, Inc. That decision held various claims of U.S. Patent Nos. 7,802,310 ("the '310 patent"), 6,415,280 ("the '280 patent"), and 7,949,662 ("the '662 patent") ineligible for patenting, and therefore invalid, under 35 U.S.C. § 101.[1] *PersonalWeb Techs. LLC v. Google LLC*, No. 5:13-CV-01317, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *14 (N.D. Cal. Jan. 31, 2020). We affirm.

Background

I

PersonalWeb's asserted patents, which share a specification and drawings, claim priority from an application filed in 1995. We assume general familiarity with the patented subject matter, as we have discussed the '310 patent in prior opinions.[2] *See Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987 (Fed. Cir. 2017); *PersonalWeb Techs., LLC v. Apple, Inc.*, 917 F.3d 1376 (Fed. Cir. 2019). In brief, the patents relate to data-processing systems that assign each data item a substantially unique name that depends on the item's content—a content-based identifier.

1. The claims are: '310 patent claims 24, 32, 81, 82, and 86; '280 patent claims 15, 16, 31, and 32; and '662 patent claim 33.

2. For simplicity, all citations to the shared specification are to the '310 patent.

'310 patent col. 1 l. 44-col. 2 l. 5, col. 3 ll. 50-58, col. 6 ll. 20-24. These identifiers are generated by a mathematical algorithm, such as a cryptographic hash or "message digest" function. *Id.* at col. 12 l. 21-col. 13 l. 9. The identifier changes when the data item's content changes. *Id.* at col. 35 ll. 55-63. The patents claim using such identifiers to perform various data-management functions. Claim 24 of the '310 patent, for example, sets forth a method for using content-based identifiers to control access to data. The method generally proceeds in three steps: (1) receiving a request containing a content-based identifier for a data item, (2) comparing the content-based identifier to a plurality of values, and (3) granting or disallowing access to the data item based on the comparison:

> 24. A computer-implemented method implemented at least in part by hardware comprising one or more processors, the method comprising:
>
> (a) using a processor, receiving at a first computer from a second computer, a request regarding a particular data item, said request including at least a content-dependent name for the particular data item, the content-dependent name being based, at least in part, on at least a function of the data in the particular data item, wherein the data used by the function to determine the content-dependent name comprises at least some of the contents of the particular data item, wherein the function that was used comprises a message digest

> function or a hash function, and wherein two identical data items will have the same content-dependent name; and
>
> (b) in response to said request:
>
> > (i) causing the content-dependent name of the particular data item to be compared to a plurality of values;
> >
> > (ii) hardware in combination with software determining whether or not access to the particular data item is unauthorized based on whether the content-dependent name of the particular data item corresponds to at least one of said plurality of values, and
> >
> > (iii) based on said determining in step (ii), not allowing the particular data item to be provided to or accessed by the second computer if it is determined that access to the particular data item is not authorized.

'310 patent claim 24.

The relevant '280 and '662 patent claims reflect a similar pattern but are geared toward different data-management functions. Specifically, the '280 patent claims use content-based identifiers to retrieve data items, and

the '662 patent claims use content-based identifiers to mark duplicate data items for deletion. *E.g.*, '280 patent claim 31; '662 patent claim 33. The disclosed systems are "intended to work with an existing operating system.'"310 patent col. 6 ll. 25-32.

II

PersonalWeb sued the appellees for patent infringement in the Eastern District of Texas. After claim construction, the cases were transferred to the Northern District of California. That court stayed the cases pending resolution of several inter partes reviews ("IPRs") at the Patent Trial and Appeal Board ("Board"), which challenged various claims. In six IPRs filed by EMC and VMware, the Board held all challenged claims unpatentable (including '280 patent claims 26 and 38, as well as '662 patent claim 30). In doing so, the Board found that using hash-based identifiers for data management was disclosed in the prior art. J.A. 3426 (addressing '280 patent); J.A. 3462-63 (addressing '662 patent). We affirmed all six Board decisions. *Pers. Web Techs., LLC v. EMC Corp.*, 612 F. App'x 611 (Fed. Cir. 2015). The Board also held various '310 patent claims unpatentable in a separate IPR filed by Apple Inc. On appeal, we affirmed the Board's claim construction but remanded for it to reassess obviousness under proper procedural constraints. *PersonalWeb Techs.*, 848 F.3d at 994. Along the way, we noted that a prior-art reference "discloses a system for using content-based identifiers in performing file-management functions, such as backing up files." *Id.* at 989. On review of the Board's remand decision, we reversed the Board's finding that a particular

limitation was inherently disclosed in the prior art, but we did not disturb our earlier observation that content-based identifiers were known. *PersonalWeb*, 917 F.3d at 1380-83 (reiterating that "none of the parties disagreed" that the prior-art identifier "corresponded to the claimed content-based identifier").

After the stay was lifted, the appellees moved for judgment on the pleadings that the remaining asserted claims were ineligible under 35 U.S.C. § 101. The district court granted the motion. *PersonalWeb*, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *14.[3] PersonalWeb appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

Discussion

The Patent Act defines patent-eligible subject matter as "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101. The Supreme Court has held that "this provision contains an important implicit exception: [l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216, 134 S. Ct. 2347, 189 L. Ed. 2d 296 (2014) (quoting *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589, 133 S. Ct. 2107, 186 L. Ed. 2d 124 (2013)). This exception reflects the "'concern that patent law not

3. The district court also declined to convert the motion into one for summary judgment. *PersonalWeb*, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *7. PersonalWeb does not challenge that aspect of the district court's decision.

inhibit further discovery by improperly tying up the future use of' these building blocks of human ingenuity." *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 85, 132 S. Ct. 1289, 182 L. Ed. 2d 321 (2012)). To assess patent eligibility, we apply the two-step framework set forth in *Mayo* and further detailed in *Alice*. At step one, we "determine whether the claims at issue are directed to a patent-ineligible concept" such as an abstract idea. *Alice*, 573 U.S. at 218 . At step two, "we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application." *Id.* at 217 (cleaned up).

Patent eligibility is a question of law that may involve underlying questions of fact. *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1358-59 (Fed. Cir. 2020). But "not every § 101 determination contains genuine disputes over the underlying facts material to the § 101 inquiry." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018). Indeed, that inquiry "may be, and frequently has been, resolved on a Rule 12(b)(6) or (c) motion where the undisputed facts, considered under the standards required by that Rule, require a holding of ineligibility under the substantive standards of law." *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018) (collecting cases). We apply the procedural law of the regional circuit, here the Ninth Circuit, which reviews Rule 12(c) motions de novo. *Allergan, Inc. v. Athena Cosms., Inc.*, 640 F.3d 1377, 1380 (Fed. Cir. 2011) (citing *Or. Nat. Desert Ass'n v. U.S. Forest Serv.*, 550 F.3d 778, 782 (9th Cir. 2008)). The governing standard is "functionally identical" to that for

a motion to dismiss. *Dworkin v. Hustler Mag. Inc.*, 867 F.2d 1188, 1192 (9th Cir. 1989). The standard is "whether the complaint at issue contains 'sufficient factual matter, accepted as true, to state a claim of relief that is plausible on its face.'" *Harris v. Cnty. of Orange*, 682 F.3d 1126, 1131 (9th Cir. 2012) (quoting *Ashcroft v. Iqbal*, 556 U.S. 662, 678, 129 S. Ct. 1937, 173 L. Ed. 2d 868 (2009)). We review the district court's ultimate patent-eligibility conclusion de novo. *Simio*, 983 F.3d at 1359.

I

We start at step one. Because "all inventions embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas," *Alice*, 573 U.S. at 217 (cleaned up), we must decide "whether that patent-ineligible concept is what the claim is 'directed to,'" *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 765 (Fed. Cir. 2019) (quoting *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017)). To do so, we evaluate "the 'focus of the claimed advance over the prior art' to determine if the claim's 'character as a whole' is directed to excluded subject matter." *Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017) (quoting *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016)). Here, the answer is yes. The claims are directed to an abstract idea.

PersonalWeb contends that the claims are directed to "a substantially unique, algorithm-derived, content-based identifier for all data items in a networked computer, which allows a computer within a network containing

diverse computing and storage systems to locate and distribute data without knowing either the file system of any device within the network or the conventional name of any data item." Appellant's Br. 23. The district court, on the other hand, concluded that the patents are directed to a three-step process: "(1) using a content-based identifier generated from a 'hash or message digest function,' (2) comparing that content-based identifier against something else, [that is,] another content-based identifier or a request for data; and (3) providing access to, denying access to, or deleting data." *PersonalWeb*, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *10. We adopt the district court's view, which closely tracks the claim language. *See ChargePoint*, 920 F.3d at 769 ("[T]he § 101 inquiry must focus on the language of the Asserted Claims themselves . . . ." (quoting *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016)); *Alice*, 573 U.S. at 219 ("*On their face*, the claims before us are drawn to the concept of intermediated settlement . . . ." (emphasis added)). The district court's description, for example, mirrors the progression of '310 patent claim 24 (reproduced above), on which PersonalWeb relies, Appellant's Br. 24.

Although PersonalWeb criticizes the district court's "summary of the asserted claims into a three-step process," Appellant's Br. 31 (internal quotation marks omitted), this formulation is not meaningfully distinguishable from what PersonalWeb said in opposing the § 101 motion:

> The asserted claims all recite (1) dividing the data into sequences of bits, (2) calculating

> content-based identifiers using the data in the data items, . . . (3) comparing the identifiers against a plurality of other identifiers in the network, and (4) using the results to identify, access, authorize access, or manage the number of copies of data items within the network.
>
> . . .
>
> Each asserted claim recites using content-based values as a name or identifier for a data item: in the '310 patent, to control access to data items; in the '280 patent, to retrieve and deliver copies of data items; and in the '662 patent, to mark copies of data items for deletion.

J.A. 6572, 6581. Because we must "focus here on whether the *claims* of the asserted patents fall within the excluded category of abstract ideas," we agree with the district court. *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1346 (Fed. Cir. 2014) (emphasis added). We therefore conclude that the claims are directed to the use of an algorithm-generated content-based identifier to perform the claimed data-management functions, which across the three patents include controlling access to data items (the '310 patent), retrieving and delivering copies of data items (the '280 patent), and marking copies of data items for deletion (the '662 patent).

These functions are mental processes that "can be performed in the human mind" or "using a pencil and

paper." *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371-72 (Fed. Cir. 2011) (cleaned up) (quoting *Parker v. Flook*, 437 U.S. 584, 586, 98 S. Ct. 2522, 57 L. Ed. 2d 451 (1978))—a telltale sign of abstraction. Appellees' "library" example is instructive: "Librarians often locate books based on a 'call system' where they assign books unique identifiers based on call numbers, which change dependent on a book's volume, etc." *PersonalWeb*, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *12. Such content-based identifiers may be used to control access to books (e.g., authorize borrowing depending on book content), retrieve books (e.g., locate books on shelves based on their content), or purge duplicate books (e.g., discard duplicates identified by their content). The claims do this in a computer environment, but that doesn't transfigure an idea out of the realm of abstraction. *See BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1348 (Fed. Cir. 2016) ("An abstract idea on 'an Internet computer network' . . . is still an abstract idea."). The claims' focus, therefore, is abstract. And our cases confirm this. As explained below, each component of the claims' three-step progression reflects a concept we have already described as abstract.

First is the use of a content-based identifier. We said that was abstract in *Erie*. There, we addressed claims to "search [a] database using an index," in which "every record in the database is associated with one or more descriptive terms" organized using "category tags" for "grouping of similar terms" and "domain tags" for "grouping of similar categories." *Erie*, 850 F.3d at 1326. We noted the same pen-and-paper analogue: "a hardcopy-

based classification system (such as library-indexing system)" in which "classifiers organize and cross-reference information and resources (such as books, magazines, or the like) by certain identifiable tags, e.g., title, author, subject." *Id.* at 1327. We similarly described content-based identifiers as abstract in *Secured Mail Solutions LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 910-11 (Fed. Cir. 2017) (abstract idea of using a "unique identifier . . . to communicate information about the mail object, i.e., the sender, recipient, and contents of the mail object"), and *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1313 (Fed. Cir. 2016) (abstract idea of "receiving e-mail (and other data file) identifiers, characterizing e-mail based on the identifiers, and communicating the characterization"). The claims' use of content-based identifiers, therefore, is abstract.

Generating such identifiers via a known algorithm is no less abstract. "[W]e have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (collecting cases)). For instance, the identifiers claimed in *Symantec* were created "using a mathematical algorithm." 838 F.3d at 1313. And in *RecogniCorp, LLC v. Nintendo Co.*, we explained that "[a] process that started with data, added an algorithm, and ended with a new form of data was directed to an abstract idea." 855 F.3d 1322, 1327 (Fed. Cir. 2017). That, too, holds true here.

Second is the step of comparing the content-based identifier against other values. That is also abstract. For example, the *Symantec* claims required "determining . . . whether each received content identifier matches a characteristic of other identifiers." 838 F.3d at 1313. There, as here, this is the "abstract idea of 1) collecting data[] [and] 2) recognizing certain data within the collected data set." *Id.* at 1314-15 (quoting *Content Extraction*, 776 F.3d at 1347). That's a mental process.

Third is the data-management function, which varies across the three patents. Each such function is abstract. Controlling access to data items (the '310 patent) is abstract, as "[c]ontrolling access to resources is exactly the sort of process that 'can be performed in the human mind, or by a human using a pen and paper,' which we have repeatedly found unpatentable." *Ericsson Inc. v. TCL Commc'n Tech. Holdings Ltd.*, 955 F.3d 1317, 1327 (Fed. Cir. 2020) (quoting *CyberSource*, 654 F.3d at 1372)); *id.* (noting that "[t]he idea . . . is pervasive in human activity," for example, "in libraries (loaning materials only to card-holding members)"). So is retrieving data items (the '280 patent). *E.g., Erie*, 850 F.3d at 1327 ("abstract idea of creating an index and using that index to search for and retrieve data" (internal quotation marks omitted)); *Content Extraction*, 776 F.3d at 1347 ("abstract idea of . . . collecting data"). So too is marking data for deletion (the '662 patent), which is just another way to "classify[] data." *Erie*, 850 F.3d at 1327; *e.g., Symantec*, 838 F.3d at 1314 ("[I]t was [a] long-prevalent practice for people . . . to look at an envelope and discard certain letters . . . based on characteristics of the mail."). These are all mental processes and are all abstract.

True, the step-one inquiry "looks to the claim[s'] 'character as a whole' rather than evaluating each claim limitation in a vacuum." *Ericsson*, 955 F.3d at 1326 (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016)). But these claims "are clearly focused on the combination of those abstract-idea processes." *Elec. Power*, 830 F.3d at 1354. Stringing together the claimed steps by "[a]dding one abstract idea . . . to another," *RecogniCorp*, 855 F.3d at 1327, amounts merely to the abstract idea of using a content-based identifier to perform an abstract data-management function—whether controlling access to data, retrieving data, or marking data for deletion. *See, e.g., Secured Mail*, 873 F.3d at 911 ("[E]ach step of the process uses an identifier . . . to communicate information about a mail object.").

Some of our cases are particularly analogous and instructive. One of the *Symantec* claims included three steps like the claims here (and in the same order): (1) "creating file content IDs using a mathematical algorithm," (2) "determining . . . whether each received content identifier matches a characteristic of other identifiers," and (3) "outputting . . . an indication of the characteristic of the data file based on said step of determining." 838 F.3d at 1313. Likewise, one of the *Erie* claims required (1) "identifying a first XML tag that is associated with the first term," followed by (2) "determining whether a first metafile corresponds to the first XML tag," followed by (3) several data-management functions, including "combining the first set of XML tags into a key" used to "locate records" and "deliver[] the records." 850 F.3d at 1327. There's no relevant difference in the claims here.

The claims as a whole, then, are directed to a medley of mental processes that, taken together, amount only to a multistep mental process.

PersonalWeb asserts that the claims are not abstract because they offer a solution "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." Appellant's Br. 24 (quoting *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014)). Not so. Both the solution (names based on content) and the problems (access to, retrieval of, and redundancy control of information) have long predated computers. PersonalWeb contends that the claims are not abstract because they claim "a new way of locating and distributing data in a computer network" that promises efficiency benefits, Appellant's Br. 24, but "[t]he fact that an identifier can be used to make a process more efficient . . . does not necessarily render an abstract idea less abstract," *Secured Mail*, 873 F.3d at 910. Here, the asserted efficiency improvements are not different in kind from those that would accrue in the library analogue—for example, using content-based identifiers to purge duplicate books.

Ultimately, "the focus of the claims is not on . . . an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools." *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017). In other words, the claims focus on "mere automation of manual processes using generic computers." *Id.* That fails step one.

II

Onward to step two. Here we undertake "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*, 573 U.S. at 217-18 (cleaned up). According to PersonalWeb, the claims contain an inventive concept because they "recite an application that makes inventive use of cryptographic hashes—a use that was neither conventional nor routine prior to the patents." Appellant's Br. 12; *see also id.* at 38-39 (describing "using content-dependent cryptographic hashes in place of conventional names"). But that's not something "more," let alone anything "significantly more," than the abstract idea itself. *Alice*, 573 U.S. at 218.

Indeed, the purported improvements that PersonalWeb sets forth just restate the abstract ideas discussed above. *See* Appellant's Br. 43 ("[T]he claims of the '310 patent capture the improvement of using the content-based identifier to 'enforce[] use of valid licenses . . . by refusing to provide access to a file without authorization.'" (third alteration in original) (quoting '310 patent col. 31 ll. 9-12)); *id.* ("The claims of the '280 patent capture the improvements of 'provid[ing] transparent access to any data item by reference only to its identity' and 'verify[ing] that data retrieved from another location is the desired or requested data, using only the data identifier.'" (alterations in original) (quoting '280 patent col. 4 ll. 10-45)); *id.* ("The claims of the '662 patent capture the improvements of 'stor[ing] at most one copy of the data

item' and 'maintain[ing] a desired level of redundancy of data items.'" (alterations in original) (quoting '662 patent col. 4 ll. 4-21)). That is all abstract. And even accepting PersonalWeb's view that these particular uses are not well-known, routine, or conventional, "[a] claim for a *new* abstract idea is still an abstract idea." *SAP*, 898 F.3d at 1163 (quoting *Synopsys*, 839 F.3d at 1151).

So, "[w]hat else is there in the claims before us?" *Mayo*, 566 U.S. at 78. As to the subject-matter question, not much. The district court had it right: there is "nothing 'inventive' about any claim details, individually or in combination, that are not themselves abstract ideas." *PersonalWeb*, 2020 U.S. Dist. LEXIS 20015, 2020 WL 520618, at *13. The district court was also right that "[u]sing a generic hash function, a server system, or a computer does not render these claims non-abstract." *Id.* "[O]ur precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea." *Intell. Ventures I LLC v. Cap. One Bank (USA)*, 792 F.3d 1363, 1370 (Fed. Cir. 2015); *e.g.*, *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) ("[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible."). PersonalWeb's claims merely "automate or otherwise make more efficient traditional . . . methods." *OIP*, 788 F.3d at 1363. "[T]heir innovation is an innovation in ineligible subject matter." *SAP*, 898 F.3d at 1163. That fails step two.

Last, PersonalWeb argues also that "fact questions created by the specification's disclosure" made judgment on the pleadings "improper." Appellant's Br. 51 (quoting *Berkheimer*, 881 F.3d at 1370). While we agree that "the most relevant and dispositive evidence before the district court was the set of patents themselves," Appellant's Br. 50, we disagree that this could have precluded judgment on the pleadings here. "What is needed is an inventive concept in the non-abstract application realm." *SAP*, 898 F.3d at 1168. None of PersonalWeb's "improvements in the specification" fit that bill. Appellant's Br. 51. Instead, they "lie[] entirely in the realm of abstract ideas, with no plausibly alleged innovation in the non-abstract application realm." *SAP*, 898 F.3d at 1163. Judgment on the pleadings, therefore, was appropriate.

Conclusion

We have considered PersonalWeb's remaining arguments and find them unpersuasive. The claims are ineligible for patenting. We therefore affirm the judgment of invalidity.

AFFIRMED

APPENDIX B — ORDER OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION, FILED JANUARY 29, 2020

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA,
SAN JOSE DIVISION

January 29, 2020, Decided;
January 29, 2020, Filed

Case No. 5:13-cv-01317-EJD

Re: Dkt. No. 361

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff,

v.

GOOGLE LLC, *et al.*,

Defendants.

Case No. 5:13-cv-01356-EJD

Re: Dkt. No. 85

Appendix B

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff,

v.

FACEBOOK INC.,

Defendant.

Case No. 5:13-cv-01358-EJD

Re: Dkt. No. 78

PERSONALWEB TECHNOLOGIES LLC, *et al.*,

Plaintiffs,

v.

EMC CORPORATION, *et al.*,

Defendants.

ORDER GRANTING DEFENDANTS' MOTION FOR JUDGMENT ON THE PLEADINGS

Plaintiff PersonalWeb Technologies LLC owns a family of patents that claim methods for reliably identifying, locating, and processing data in a computer network. Plaintiff alleges that Defendants infringed

three of these patents. Defendants argue that Plaintiff's patents are invalid pursuant to 35 U.S.C. § 101. The Court finds this motion suitable for consideration without oral argument. *See* N.D. Cal. Civ. L.R. 7-1(b). Having considered the Parties' papers, the Court **GRANTS** Defendant's motion for judgment on the pleadings.

I. BACKGROUND

A. Factual Background

Plaintiff argues that Defendants (collectively or separately) infringed U.S. Patent No. 7,802,310 ("the '310 patent"), No. 6,415,280 ("the '280 patent"), and No. 7,949,662 ("the '662 patent"). The three patents at issue are part of a larger family of patents that Plaintiff calls the "True Name" patents. The patents are aimed at combatting the problems of data storage on larger networks. As computer networking and storage systems evolve, files can be divided and stored across different devices in dispersed locations. This created problems—different users can unknowingly give identical names to identical files. The inventors of the "True Name" patents patented a solution; they developed a system that replaces conventional file names with unique content-based identifiers. This is done by applying a "hash function" (a mathematical algorithm) to the data in each file. For instance, as described in the '310 patent, an item's unique content creates a unique identifier. A myriad of data items can be used to create the unique identifier, which ensures duplicate copies are not created. *See, e.g.*, '310 patent, (2:18-21) ("[A] data item may be the contents of a file, a portion of a file, a page in memory, an object in an object-oriented program, a digital message, a digital scanned image, a part of a video or

audio signal, or any other entity which can be represented by a sequence of bits."). The three patents acknowledge that the "True Name," *i.e.* the assigned identifier, is intended for use with "existing" operating systems and "standard" data-management processes. *Id.* (6:26).

The '310 Patent. The '310 patent explains a method and apparatus for creating a unique data-identifier for each file based on the content of the data item. The identifier is independent of the data item's user-defined name/location, which helps ensure duplicate copies are not created. The identifier for a particular data item is created by applying a cryptographic hash function to the data claim. The output of the hash function is the content-based identifier or "True Name," which is "virtually guaranteed" to be unique to the data item. *PersonalWeb Techs., LLC v. Apple, Inc.*, 917 F.3d 1376, 1377-78 (Fed. Cir. 2019). The system uses the content-based identifier to determine whether a particular data item is present on the system. And, when the data item's contents are changed, the content-based identifier is also changed. The identifiers are then used to determine if access to a data item is licensed or authorized. *See, e.g.*, '310 patent (claims 24, 81, 86).

Five claims of the '310 patent are at issue. Plaintiff contends Defendant EMC/VMware infringed claims 24 and 31 of the patent. Plaintiff alleges Defendants Google/YouTube, Facebook, and EMC/VMware infringed claims 81, 82, and 86 of the patent. The relevant claims of the '310 patent are as follows:

> **24**. A computer-implemented method implemented at least in part by hardware comprising one or more processors, the method comprising:

(a) using a processor, receiving at a first computer from a second computer, a request regarding a particular data item, said request including at least a content-dependent name for the particular data item, the content-dependent name being based, at least in part, on at least a function of the data in the particular data item, wherein the data used by the function to determine the content-dependent name comprises at least some of the contents of the particular data item, wherein the function that was used comprises a message digest function or a hash function, and wherein two identical data items will have the same content-dependent name; and

(b) in response to said request:

(i) causing the content-dependent name of the particular data item to be compared to a plurality of values;

(ii) hardware in combination with software determining whether or not access to the particular data item is unauthorized based on whether the content-dependent name of the particular data item corresponds to at least one of said plurality of values, and

(iii) based on said determining in step (ii), not allowing the particular data item to be provided to or accessed by

the second computer if it is determined that access to the particular data item is not authorized.

31. The method of claim **21**[1] wherein, for each particular data item of the plurality of data items, the corresponding content-dependent

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1. Claim 21 claims:

A computer-implemented method implemented at least in part by hardware comprising one or more processors, the method comprising:

(a) obtaining a list of content-dependent names, one for each of a plurality of data items, wherein, for each particular data item of the plurality of data items, the corresponding content-dependent name for that particular data item is based at least in part on a function of at least Some of the contents of the particular data item, wherein the function comprises a message digest function or a hash function, and wherein two identical data items have the same content-dependent name on the list of content dependent names;

(b) receiving at a first location, and from a second location distinct from said first location, a content-dependent identifier corresponding to a particular data item, said content-dependent identifier being based at least in part on at least some of the contents of the particular data item;

(c) at said first location, by a processor, in combination with software, determining, based at least in part on said content-dependent identifier for said particular data item, and using said list of content-dependent names, whether a requestor may access the particular data item; and

(d) based on said determining in (c), if it is determined that the requestor may not access the particular data item, causing access to the particular data item to be denied.

name for that particular data item was based on a function of all of the contents of that particular data item.

81. A device operable in a network of computers, the device comprising hardware including at least one processor and memory, to:

(a) receive, at said device, from another device in the network, a content-based identifier for a particular sequence of bits, the content-based identifier being based at least in part on a function of at least some of the particular sequence of bits, wherein the function comprises a message digest function or a hash function, and wherein two identical sequences of bits will have the same content-based identifier, and to

(b) compare the content-based identifier of the particular sequence of bits to a plurality of values; and to

(c) selectively allow said particular sequence of bits to be provided to or accessed by other devices depending on whether or not said content-dependent identifier corresponds to one of the plurality of values.

82. The device of claim 81 wherein the particular sequence of bits represent data selected from the group comprising: a file, a portion of a file, a page in memory, a digital message, a portion of a digital message, a digital image, a portion

of a digital image, a video signal, a portion of a video signal, an audio signal, a portion of an audio signal, a Software product, and a portion of a software product.

86. A device operable in a network of computers, the device comprising hardware, including at least one processor and memory, to:

(a) receive at said device, from another device in the network, a digital identifier for a particular sequence of bits, the digital identifier being based, at least in part, on a given function of at least some of the bits in the particular sequence of bits, wherein the given function comprises a message digest function or a hash function, and wherein two identical sequences of bits will have the same digital identifier; and

(b) selectively allow the particular sequence of bits to be provided to or accessed by other devices in the system, based at least in part on whether or not the digital identifier for the particular sequence of bits corresponds to a value in a plurality of values, each of the plurality of values being based, at least in part, on the given function of at least some of the bits in a corresponding sequence of bits.

The '280 Patent. The '280 patent addresses a method of identifying and requesting data in a network using content-based identifiers. Specifically, it covers a situation where data items are distributed across a network of

servers and some of the data items are cached (stored) versions from a source server. The content delivery network ("CDN") determines a "True Name," *i.e.* a content-dependent identifier, for a particular data item (as in the '310 patent). In response to a request for a particular data item, the CDN provides the particular data item from one of the servers in the network of servers.

Four claims of the '280 patent are at issue. Plaintiff contends Defendants Facebook, Google, and YouTube infringed claims 15 and 16. Plaintiff alleges Defendant Facebook infringed claims 31 and 31. The relevant claims of the '280 patent are as follows:

> **15**. A method as in claim **10**[2] further comprising:
>
> resolving the request for the particular data file based on a measure of availability of at least one of the servers.

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2. Claim 10 claims:

A content delivery method, comprising:

distributing a set of data files across a network of servers;

determining a data identifier for a particular data file, the data identifier being determined using a given function of the data, wherein said data used by the given function to determine the data identifier comprises the contents of the particular data file; and

in response to a request for the particular data file, the request including at least the data identifier of the particular data file, providing the particular data file from a given one of the servers of the network of servers, said providing being based on the data identifier of the particular data file.

Appendix B

16. A method as in claim **15** wherein the measure of availability is based on one or more of:

(a) a measurement of bandwidth to the Server;

(b) a measurement of a cost of a connection to the server, and

(c) a measurement of a reliability of a connection to the SCWC.

31. A content delivery method, comprising:

distributing a set of data files across a network of servers,

determining an **MD5** hash of the contents of a particular data file; and

in response to a request for the particular data file, the request including at least the **MD5** hash of the particular data file, providing the particular data file from a given one of the Servers of the network of Servers, Said providing being based on the **MD5** hash of the particular data file.

32. A method as in claim **31** further comprising: resolving the request for the particular data file based on a measure of availability of at least one of the servers.

Appendix B

The '662 Patent. The '662 patent addresses the de-duplication of data in a data-processing system. The invention describes systems and methods for deleting a particular copy of a data item when at least one other copy of the copy of the data item is available. The presence of another copy of the data item is determined based on a content-dependent identifier for the data item, which is calculated using the methods described in the '310 and '280 patents. A duplicate copy may be deleted if it is determined another copy exists elsewhere on another processor in the system. Plaintiff contends that Defendant Google/YouTube infringed claim 33 of the '662 patent. The relevant claim is:

> **33**. A file system comprising:
>
> (i) a plurality of servers to store file data as segments; and
>
> (ii) first data that includes file identifiers for files for which the file data are stored as segments; and
>
> (iii) second data that maps the file identifiers to the segments to which the file identifiers correspond; and
>
> (iv) location data that identifies which of the plurality of servers stores which of the segments; and
>
> (v) a table including file identifiers for files in the file system, said table including a corresponding

status for at least some of the files in the file system,

(vi) at least one computer comprising hardware in combi nation with software and connected to the plurality of servers, the at least one computer programmed:

(A) to receive a request to delete a particular data item in the file system;

(B) to ascertain, in response to said request, a digital data item identifier corresponding to said particular data item, said particular data item consisting of an arbitrary sequence of bits consisting of a sequence of non-overlapping segments, each of said segments in said sequence being stored on multiple servers of the plurality of servers in the file system, said digital data item identifier being based at least in part on a given function of the data comprising the particular data item, said given function comprising a hash function;

(C) to update an entry in said table corresponding to said particular data item to reflect deletion of said particular data item in the file system, said entry including at least said

> digital data item identifier of said particular data item.

B. Procedural History

In late 2013, after Plaintiff filed actions against Defendants in the Eastern District of Texas, Judge Davis issued a claim construction order. Dkt. 178 (5:13-cv-01317-EJD). In the order, Judge Davis construed terms in the claims at issue as follows:

1. *Data items*: "sequence of bits"

2. *Data files*: "a named data item(s)"

3. *Substantially unique identifier*, *Data identifier*, *True Name*, *Digital identifier*, *Data item identifier*: "an identity for a data item generated by processing all of the data in the data item, and only the data in the data item, through an algorithm that makes the identifier substantially unique"

Id. at 47.

The cases were subsequently transferred to the Northern District of California. Before transfer, EMC and VMware filed a series of petitions for *inter partes* review ("IPR") with the Patent Trial and Appeal Board ("PTAB") challenging the validity of the '280 and '662 patents. The IPRs also challenged the validity of the '791, '539, '544, and '096 patents, which are relevant to this case because these

patents have identical specifications and priority dates to the three True Name patents at issue. The PTAB found in six separate decisions that it was known in the prior art to use content-based identifiers, based on "hashes" of data items, for the kinds of data-management tasks that Plaintiff claims. The PTAB determined many claims in the "True Name" patents were not novel and were thus invalid under 35 U.S.C. § 102. The PTAB determined:

1. Claims 1-4, 29-33, and 41 of the '791 patent were invalid because the prior art (Woodhill's backup procedures) already disclosed a method for detecting and avoiding duplicate binary object identifiers. *See* Declaration of Marissa A. Lalli in Support of Defendants' Motion for Judgment on the Pleadings ("Lalli Decl."), Ex. A at 39. The PTAB thus invalidated the claims in the'791 patent that patented a method of using content-based identifiers to identify and access data items because Woodhill already outlined a method of using a binary hash[3] algorithm to calculate a binary object identifier from the "content of the data" instead of "from an external or arbitrary source." *Id.* at 15. Like Plaintiff's claimed method, the identifier "changes when the contents of the binary object changes." *Id.* at 16.

3. The True Name patents use the terms "hash" and "message digest" interchangeably. '310 (40:12). "Message digest" functions (like MD5) are a type of hash function. 12:43-46).

2. Claims 36 and 38 of the '280 patent were invalid because the prior art (Woodhill's self-auditing procedure) disclosed a method of using content-based identifiers to identify and request a data item based on the "hash of contents" of the data item. *Id.*, Ex. B at 17. As noted by Defendants' expert, Dr. Clark, such an "operation was routine because it was old and well-known to identify and request objects using their identifiers." *Id.*

3. Claim 30 of the '662 patent was invalid because the prior art (Kantor's method of identifying duplicate files) disclosed a method of using content-based identifiers, based on hash functions, to identify duplicate files. *Id.*, Ex. C at 9, 11, 15.

4. Claims 10 and 21 of the '539 patent were invalid because prior art (Langer) already disclosed a method of accessing files in a network of computers. *Id.*, Ex. D at 20. Langer already disclosed a method of calculating a unique identifier for a file using an MD5 hash function on the contents of the component file, rather than the file's location. *Id.*

5. Claim 1 of the '544 patent was invalid because prior art (Woodhill) already disclosed a system for distributed storage management on a computer network system

> using binary object identifiers. *Id.*, Ex. E at 14. Claim 1 was invalid because it claimed a method of using content-based identifiers to compare files, which was already anticipated by Woodhill. *Id.* at 22.

The Federal Circuit affirmed these PTAB decisions. *Id.*, Ex. G. Accordingly, there is no dispute that it was known in the art to use content-based identifiers, based on "hashes" of data items, for data-management in multi-server computer networks.

Apple (who is not a Defendant in this action) filed a separate IPR challenging the '310 patent. The PTAB held the asserted claims unpatentable as not novel. The Federal Circuit, however, reversed the PTAB's findings and accepted Plaintiff's argument that the prior art (the Woodhill system) did not inherently disclose comparing one content-based identifier with a plurality of identifiers. *PersonalWeb*, 917 F.3d at 1382-83. Rather, the prior art only disclosed a one-to-one comparison. *Id.* at 1382. Thus, Plaintiff could claim a method of comparing one content-based identifier with multiple identifiers without violating 35 U.S.C. § 102.

While the Federal Circuit held that the claims in the '310 patent were novel, the court acknowledged that many claims in Plaintiff's True Name patents were invalid since the prior art disclosed a system for (1) using content-based identifiers, (2) calculated using the contents of a data item,[4]

4. Dr. Clark explained that content-based identifiers are created by "hashing" the contents of a data item so that identical items have the same identifier. Dr. Robert Dewar conceded in his

(3) which are stored with certain other information, in a binary object identification record, (4) to perform file-management functions, like backing-up files or restoring systems, (5) which check to see if binary objects have changed since the system's most recent backup, and (6) control access to data items stored in a repository by granting authorization to digital works via a "digital ticket" that identifies whether a user is entitled access to a file. *PersonalWeb Techs. v. Apple, Inc.*, 848 F.3d 987, 989 (Fed. Cir. 2017).

Defendants now argue that the asserted claims of the '310, '280, and '662 "True Name" patents are abstract and not eligible for patent protection under 35 U.S.C. § 101. Defendants' Motion for Judgment on the Pleadings ("Mot."), Dkt. 361; *see also* Reply in Support of Defendants' Motion for Judgment on the Pleadings ("Reply"), Dkt. 364. Plaintiff argues in opposition that the asserted claims are not abstract and are protected under Section 101. Plaintiff's Opposition to Defendants' Motion for Judgment on the Pleadings ("Opp."), Dkt. 362. Because Section 101 challenges are not available in IPRs, the True Patents' eligibility on this ground has not yet been decided. *Neptune Generics, LLC v. Eli Lilly & Co.*, 921 F.3d 1372, 1378 (Fed. Cir. 2019); 35 U.S.C. § 311(b) (stating that in an IPR, a petitioner is limited to grounds that "could be raised under section 102 or 103"). The Court now decides whether the asserted claims are protected by Section 101.

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deposition that this concept was disclosed in the prior art that was the focus of the IPRs. Declaration of Marissa A. Lalli in Support of Reply ("Lalli Reply Decl."), Ex. H at 136.

II. LEGAL STANDARD

A. Motion for Judgment on the Pleadings

A motion for judgment on the pleadings under Federal Rule of Civil Procedure 12(c) is a "means to challenge the sufficiency of the complaint after an answer has been filed." *New.Net, Inc. v. Lavasoft*, 356 F.Supp.2d 1090, 1115 (C.D. Cal.2004). The standard is functionally identical to a motion to dismiss. *Dworkin v. Hustler Magazine, Inc.*, 867 F.2d 1188, 1192 (9th Cir. 1989). On a Rule 12(c) motion, disputed material facts preclude judgment. *Hal Roach Studios, Inc. v. Richard Feiner and Co., Inc.*, 896 F.2d 1542, 1550 (9th Cir.1990) ("Judgment on the pleadings is proper when the moving party clearly establishes on the face of the pleadings that no material issue of fact remains to be resolved and that it is entitled to judgment as a matter of law."). In deciding such a motion, the Court may consider the pleadings, documents incorporated by reference in the pleadings, and matters of judicial notice. *Heliotrope Gen., Inc. v. Ford Motor Co.*, 189 F.3d 971, 981 n.18 (9th Cir. 1999) ("When considering a motion for judgment on the pleadings, this court may consider facts that 'are contained in materials of which the court may take judicial notice.'" (citation omitted)).[5]

5. The IPR materials cited by Defendants and Plaintiff are subject to judicial notice. *See Atlas IP LLC v. Pac. Gas & Elec. Co.*, 2016 U.S. Dist. LEXIS 60211, 2016 WL 1719545, at *1 n.1.

B. Conversion

Plaintiff argues the Court should convert Defendants' motion for judgment on the pleadings into one for summary judgment. This would allow the Court to consider the concurrently filed Declaration of Dr. Samuel Russ, Ph.D. Defendants object and argue, in the alternative, that if the Court converts the motion into one for summary judgment, it should defer deciding the motion until Defendants can depose Plaintiff's expert, present their own evidence, and brief an argument under the summary judgment standard. Reply at 15 n.11.

Federal Rule of Civil Procedure 12(c) provides that a motion for judgment on the pleadings may be filed "[a]fter the pleadings are closed—but early enough not to delay trial[.]" "Conversion to summary judgment is generally not appropriate where . . . only the nonmoving party has introduced evidentiary exhibits in response to . . . a motion for judgment on the pleadings." *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 2016 U.S. Dist. LEXIS 107478, 2016 WL 4373698, at *4 (D. Del. Aug. 15, 2016) (collecting cases). Generally, a district court should give parties notice of its intent to convert a motion for judgment on the pleadings into a motion for summary judgment. *James v. Poole*, 2013 U.S. Dist. LEXIS 3440, 2013 WL 132492, at *2 (W.D.N.Y. Jan. 9, 2013).

Plaintiff argues that, in the interest of fairness and timing, the lengthy duration of the litigation and the fact that discovery is nearly closed support converting Defendants' motion into one for summary judgment. Opp.

at 9. In Plaintiff's view, the Court should not sanction Defendants' "tactical" use of a Rule 12(c) motion. Opp. at 10-11. Plaintiff also argues that because genuine issues of material fact exist, judgment on the pleadings is improper.

Defendants object to conversion and contend that Plaintiff's use Dr. Russ to "manufacture a factual dispute." Reply at 14, 15. They point to the fact that despite the length of litigation, Dr. Russ has never been involved in the case. Defendants also argue Dr. Russ's declaration does not create a genuine issue of material fact because the declaration is directly contrary to multiple PTAB findings and Federal Circuit rulings. Hence, the purported disputes are not genuine and do not preclude a Rule 12(c) motion.

The Court declines to convert the motion into one for summary judgment. Conversion to summary judgment is generally not appropriate when, as here, only the nonmoving party has introduced evidentiary exhibits in response to a motion for judgment on the pleadings. *See Two-Way Media Ltd.*, 2016 U.S. Dist. LEXIS 107478, 2016 WL 4373698 at *4. Only Plaintiff, the nonmovant, has introduced evidence not subject to judicial notice. Furthermore, conversion is only appropriate where a party has notice. *See James*, 2013 U.S. Dist. LEXIS 3440, 2013 WL 132492 at *2. Here, Defendants did not have notice of conversion. At a joint conference, the Court instructed Defendants to file a joint motion for judgment on the pleadings. Plaintiff neither objected to this nor indicated it intended to convert the motion into one for summary judgment. *See* Transcript of Proceedings, Dkt.

133 (parties only discussed a Rule 12(c) motion with the Court). Reneging on this discussion and converting the motion into one for summary judgment would produce waste—the Court would have wasted its time in discussing a Rule 12(c) motion with the Parties and Defendants would have wasted their time preparing Rule 12(c) briefing. *See* Reply at 15 n.11.

Plaintiff's timeliness argument is unconvincing. The fact that these cases have been pending for nearly six years is obviated by the multiple IPRs and Federal Circuit appeals. Indeed, once these IPRs and appeals concluded, Defendants immediately filed their Rule 12(c) motion. *See Richter*, 2018 U.S. Dist. LEXIS 215431, 2018 WL 6728515 at *6. Given this timeline and the fact that no trial date is set, the motion was filed "early enough not to delay trial." Fed. R. Civ. P. 12(c). The motion is thus timely. The Court thus fails to see how Rule 12(c) is being "tactically used" when Defendants brought the motion at the earliest opportunity.

Finally, to the extent factual disputes exist, neither the summary judgment nor motion for judgment on the pleadings standard allow this Court to find for Defendants. Accordingly, Plaintiff's request for conversion is **DENIED** and Dr. Russ's declaration will not be used.

III. DISCUSSION

Patent eligibility under 35 U.S.C. § 101 is a question of law that may contain underlying issues of fact. *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362

(Fed. Cir. 2015); *see also Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1342 (Fed. Cir. 2018). Hence, when the "basic character of the claimed subject matter is readily ascertainable from the face of the patent," courts may determine patent eligibility at the motion for judgment on the pleadings stage. *See Internet Patents Corp. v. Gen. Auto. Ins. Servs., Inc.*, 29 F. Supp. 3d 1264, 1268 (N.D. Cal. 2013).

Under 35 U.S.C. § 101, the scope of patentable subject matter includes "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." The Supreme Court has "long held that this provision contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216, 134 S. Ct. 2347, 189 L. Ed. 2d 296 (2014) (quotation marks and citation omitted). These three exceptions are "the basic tools of scientific and technological work" and monopolization of these tools "might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws." *Id.* (quotation marks and citation omitted).

In three recent cases, the Supreme Court has established a legal framework for determining if an exception applies. *See Bilski v. Kappos*, 561 U.S. 593, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010); *Mayo Collaborative Servs. v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 132 S. Ct. 1289, 182 L. Ed. 2d 321 (2012); *Alice Corp.*, 573 U.S. 208, 134 S. Ct. 2347, 189 L. Ed. 2d 296. As elaborated in

Alice, the § 101 eligibility inquiry proceeds in two steps. *Alice Corp.*, 573 U.S. at 217-18. First, the court determines whether the patent(s) at issue are directed to an abstract idea, law of nature, or natural phenomenon. *Id.* at 217. If the court determines the patent(s) do not cover an excepted subject matter, the inquiry ends. *Id.* If, however, the patent(s) *do* focus on one of these categories, the court proceeds to the second step, where it determines if "the elements of each claim both individually and 'as an ordered combination' . . . 'transform the nature of the claim' into a patent-eligible application." Id. (quoting *Mayo Collaborative Servs.*, 566 U.S. at 78). If the claims fail to provide this "inventive concept," the patent is ineligible. *Id.* at 217-18.

Accordingly, the Court must first decide whether the three True Name patents at issue cover an excepted subject-matter, *i.e.* an abstract concept, and, if yes, whether an "inventive concept" exists.

A. *Alice*/*Mayo* Step One

1. Foundational Background

At step one of the *Alice* framework, the Court "look[s] at the focus of the claimed advance over the prior art to determine if the claim's character as a whole is directed to excluded subject matter." *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016). Courts must be careful not to overgeneralize claims otherwise "all inventions can be reduced to underlying principles of nature." *Diamond v. Diehr*, 450 U.S. 175,

189 n.12, 101 S. Ct. 1048, 67 L. Ed. 2d 155 (1981). On the other hand, the judicial inquiry should root out "creative drafting efforts" designed to "monopolize" the abstract idea. *See Alice*, 573 U.S. at 221. "In cases involving software innovations, this inquiry often turns on whether the claims focus on 'the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an abstract idea for which computers are invoked merely as a tool.'" *Finjan, Inc. v. Blue Coat System, Inc.*, 879 F.3d 1299, 1303 (Fed. Cir. 2018) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016)). Merely stating an "improved result" to an otherwise abstract idea is insufficient; the patent must recite a "specific means or method that solves a problem in an existing technological process." *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019). Accordingly, the relevant inquiry is *what* problem the patent claims to solve and whether the patent *specifically* asserts a method to make improvements.

Four recent Federal Circuit cases, which Plaintiff relies on, illustrate the *Alice* step one inquiry. In *Enfish*, the court held that a software patent covering a "self-referential database" did not constitute an abstract idea. 822 F.3d at 1337-38. There, unlike the prior model of "relational databases," which generated multiple and separate data-tables for each entity, the plaintiff's patents claimed a self-referential model that allowed all of the information in a database to be contained and displayed in a single table. *Id.* at 1330, 1337. Thus, the patents sought to improve a concrete software-specific inefficiency that had existed in referential databases. This made the patents

different from cases like *Alice* where a patent-holder simply wanted to add conventional computer components to well-known business practices. *Id.* at 1338. Because the self-referential table was a *specific type of data structure* distinct from the abstract idea of improving the way a computer stores and retrieves data in memory, the patent was not so sweeping that "general-purpose computer components" could be added "post-hoc to a fundamental economic practice or mathematical equation." *Id.* at 1339; *cf. Alice*, 573 U.S. at 221 (noting that the judicial inquiry should root out creative drafting designed to monopolize an abstract idea).

In *McRO, Inc. v. Bandai Namco Games America, Inc.*, the court held that the patent was not abstract because the claims were limited to rules with specific characteristics. 837 F.3d 1299, 1313 (Fed. Cir. 2016). There, the patent at issue claimed a method of using a computer to automate conventional activity. Specifically, the patent covered a method of accurately and realistically syncing lip and facial expressions in animated characters. *Id.*at 1314. Previously, this could only be produced by human animators. *Id.* It did this through an "ordered combination of claimed steps, using unconventional rules that relate subsequences of phonemes, timings, and morph weight sets." *Id.* at 1302-03. The court focused its analysis on the specific rules claimed in the patent—as in *Enfish*, the claimed process used a combined order of *specific* rules to resolve a specific ineffiency, thereby obviating the fear that the patent covered an "entire abstract idea" and could preempt all innovation in the field. *See id.* at 1314-15 (noting patent's rules ensured "future alternative discoveries were not foreclosed").

In *Finjan*, the court held the patent was not abstract because the patent addressed a software-based innovation prescribed by specific steps. 879 F.3d at 1303-06. There, the patent at issue was directed to a method of providing computer security by scanning a downloadable program and attaching results of that scan to the downloadable in the form of a "security profile." *Id.* at 1303. This operation is distinguished from traditional, "code-matching" virus scans that are limited to recognizing the presence of previously-identified viruses. *Id.* at 1304. The claimed method thus "constitute[d] an improvement in computer functionality." *Id.* Much like in *Enfish*, the virus improvement constituted a "non-abstract improvement to computer technology" because it addressed a specific inefficiency, namely it "employ[ed] a new kind of file that enable[d] a computer security system to do things it could not do before." *Id.* at 1305. And, much like *McRO*, the claims recited specific steps and thus claimed more than "a mere result." *Id.*; *see also Koninklijke KPN N.V v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019) (holding, like in *Finjan*, claimed invention not abstract because it "employ[ed] a *new way* of generating check data" (emphasis added)).

Contrast these cases with *In re TLI Communications LLC Patent Litigation*, 823 F.3d 607 (Fed. Cir. 2016). There, the patent at issue related to an "apparatus for recording of a digital image, communicating the digital image from the recording device to a storage device, and [] administering the digital image in the storage device." *Id.* at 609. The claims were directed to storing and organizing digital photos. *Id.* The court determined that the patent

covered an abstract idea because it did not claim any new technology or use of such technology. *Id.* at 612. Instead, it "describe[d] the system and methods in purely functional terms" and failed to provide "any technical details for the tangible components." *Id.* The claims were "simply directed to the abstract idea of classifying and storing digital images in an organized manner." *Id.* at 613. Thus, the patent, unlike the aforementioned cases, was abstract because the patent covered the conventional application of known ideas. Indeed, the patent failed to describe any type of method for improving software functionality or solving a specific technological problem. *Id.* at 613.

These cases stand for four principles: first, when claims recite purely functional language and use conventional technology in a typical manner, the claims are not patent eligible. *See Elec. Power Grp., LLC v. Alstom S.A.*,830 F.3d 1350, 1356 (Fed. Cir. 2016) (affirming district court's holding that patent was abstract because claims only focused on the combination of "abstract-idea processes" without adding any "particular assertedly inventive technology" or processes). Second, and relatedly, claims that merely recite steps people go through in their minds, or by mathematical algorithms, without more, are abstract mental processes. *See TLI*, 823 F.3d at 613 (holding that claims were abstract because they simply recited the abstract ideas of "classifying and storing digital images in an organized manner"). Third, as *Finjan* and *Enfish* show, eligibility requires some fixed subject-matter with fixed parameters. *See Finjan*, 879 F.3d at 1305-06 (holding patent was not abstract because it claimed a specific way to accomplish specific result). Finally, a result, even if

innovative, is not patentable. *Id.* at 1305 (collecting cases). Only the specific steps that accomplish an innovative result are patentable. *Id.* These four principles reaffirm that preemption is at the heart of the *Mayo/Alice* analysis. By constraining patentability, courts aim to balance innovation and monopolization.

Accordingly, at step one, the inquiry must be: what a patent is "directed to?" This ensures that the patent seeks to resolve a specific problem through specific means, thus ensuring the field is not completely occupied and creativity is not preempted.

2. The '380, '280, and '662 Patents Are Directed to an Abstract Idea

The claims in the True Name patents at issue are directed to:

1. '310 patent: using a known, content-based identifier to control access to data.

2. '280 patent: retrieving and delivering copies of data items across a network of servers.

3. '662 patent: identifying copies of identical data items in a network of servers based on the data's unique content-based identifier and deleting one of the duplicate data copies.

The Parties do not dispute this. *See* Opp. at 14, 24. Hence, the True Name patents, broadly construed, focus

on the idea of using content-based identifiers to manage data in a computer system.

Even accepting this, Plaintiff argues that the True Name patents are not abstract. First, Plaintiff contends the claims are not abstract because "[n]othing like this existed at the time." Opp. at 14. Alternatively, Plaintiff contends the patents cover a specific improvement in data-management, namely a method that identifies any variable sequence of bits within a network, based on the data file's content, to more efficiently locate, access, and de-duplicate data in a network . *Id.* Finally, Plaintiff argues the claims do not simply recite a desired result, they "explain how [it] is done." *Id.* at 15.

The Court disagrees with Plaintiff's assessment. The three patents are all directed to the same abstract three-step process: (1) using a content-based identifier generated from a "hash or message digest function," (2) comparing that content-based identifier against something else, *i.e.* another content-based identifier or a request for data; and (3) providing access to, denying access to, or deleting data. Collection, comparison, and access to information are abstract concepts. *See Elec. Power Grp.*, 830 F.3d at 1353-54; *see also Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (holding claims ineligible under Section 101 because they were drawn to abstract and well-known ideas of "1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory"). As *Enfish*, *Finjan*, and *McRO*, show above, fundamental concepts may not be claimed; only the steps which go beyond the abstract concept are patent eligible.

Here, the patents claim the fundamental concept itself—they claim a method of accessing, storing, and deleting data in a multi-computer network system. And, the patents are not aimed at addressing a specific problem within data-management. Rather, they are aimed at generally making data-management more efficient. As an example, in *Enfish* the Federal Circuit held that the claim at issue was patentable under Section 101 because it focused on a specific improvement—the self-referential table—that helped computers better store and retrieve data. *Enfish*, 822 F.3d at 1335. The patent thus did not cover general data storage improvements; it covered the specific method claimed to create a self-referential table. This helped ensure the entire field of data storage and retrieval was not preempted, therefore maintaining the balance between monopolization and innovation.

Likewise, in *KPN*, the Federal Circuit held that the asserted claims were patent eligible because they were focused on clear, specific improvements to existing computer functions. 942 F.3d at 1153. There, the claimed invention was a system to "check data" to ensure that there were not "systematic errors" with data transmission. *Id.* at 1145. The patent proposed adding variability to the calculation of the check data by switching around bits in the data block or using different algorithms. *Id.* at 1146. This, the court determined, was patentable because the patent claimed only the specific steps of using a new "check data" system and thus only sought to solve a specific problem within the check-data field. *Id.* at 1153. Hence, the patent was not directed at data processing and transmission generally.

At step one, the Court broadly construes a patent's purpose and asks what problem does the patent seek to resolve? Using broad brushes, a commonality can be gleaned from each patent discussed in the aforementioned cases. In each case, the patent-holder patented a new and specific method to resolve a problem. For example: (1) in *Enfish*, a new type of table was claimed; (2) In *KPN*, a new "check data" method was claimed; (3) in *McRO*, a new way to sync an anima character's facial expressions and speech was claimed; and (4) in *Finjan*, a new file-scanning system was claimed. In contrast, here, no "new" system is claimed. The patents are generally aimed at making data-storage in multi-computer networks easier and more efficient. Unlike Enfish, McRO, KPN, and Finjan, the True Name patents do not claim a "new way" of storing, accessing, or naming files. Indeed, the True Name patents cannot, and do not, claim the process for generating a data-based identifier.[6] Rather, they claim the process of "applying" such identifiers to perform "particularly-recited data management operations." Opp. at 15. But, claiming the "application" of a well-known hashing technique to the abstract concept of data management does not render the idea non-abstract. *See Bilski*, 561 U.S. at 612 ("[L]imiting an abstract idea to one field of use or adding token postsolution components [does] not make the concept unpatentable."); *see also Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App'x 1014, 1017 (Fed. Cir. 2017) (holding claims directed to "(1) receiving identity data from a device with a request for access to resources; (2) confirming the authenticity of the identity

6. As noted above, this is prior art. *See supra* I.B.

data associated with that device; (3) determining whether the device identified is authorized to access the resources requested; and (4) if authorized, permitting access to the requested resources" abstract because claimed abstract idea of "providing restricted access to resources").

For instance, in *Bridge & Post, Inc. v. Verizon Communications, Inc.*, the court held that the claims "determining user information for a user" and "generating a user identifier from the determined user information" were unpatentable. 319 F. Supp. 3d. 818, 822 (E.D. Va. 2018). The disputed claims in *Bridge & Post* covered "swapping a changeable identifier with an unchangeable one" and using the identifier to implement targeted marketing. *Id.* at 824-25. But targeted marketing and using "an unchangeable identifier" are abstract ideas. *Id.* at 825; *see also Secured Mail Sols. LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 910 (Fed. Cir. 2017) ("There is no description of how the unique identifier is generated . . . ."). Hence, applying abstract ideas to a specific concept does not render them non-abstract. *Bridge & Post, Inc.*, 319 F. Supp. 3d at 825.

Here, as in *Bridge & Post*, Plaintiff neither claims they invented the content-based identifier nor that their invention is computer-specific. Indeed, Plaintiff cannot argue either of these things—the content-based identifier is prior art and Plaintiff has sought to broadly enforce the True Name patents. *See supra* I.B.; Mot. at 4 n.4. As shown in Defendants' briefing, the True Name patents have been asserted across a wide array of technologies like content-delivery networks, peer-to-peer music

swapping, cloud storage and web applications. *Id.* This confirms that, broadly construed, the claims are directed at "generating, transmitting, receiving, and storing" data and are not directed at improving computer functionality in some concrete way. *See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1258 (Fed. Cir. 2017) ("[W]e must . . . ask whether the claims are directed to an improvement to computer functionality versus being directed to an abstract idea."). Therefore, the claims are directed to the "basic concept" of data management, which is sufficient to fall under *Alice* step 1. *See TLI*, 823 F.3d at 613 (holding claims directed to collecting data, recognizing certain data within the collected set, and storing the recognized data in memory were a "well-established basic concept").

Finally, the Court notes Defendants' argument that Plaintiff is "computerizing" a conventional process known in the art. Opp. at 15. Defendants argue that the concept claimed in the True Name patents is derivative of other data-management systems like the Dewey Decimal and Library of Congress Classification systems. Reply at 10. For example, librarians often locate books based on a "call system" where they assign books unique identifiers based on call numbers, which change dependent on a book's volume, etc. Using a "master call list," a librarian can compare the call numbers to see if multiple copies of the same text exist and purge books accordingly. Hence, Defendants argue that the True Name patents cover this well-known concept, except applied to computers. *See OIP Techs.*, 788 F.3d at 1362-63 (limiting abstract ideas to a particular environment does not make the claims less abstract in *Alice* step one).

In *OpenTV, Inc. v. Apple, Inc.*, the court held that the patent was abstract because it could not pass the "pen and paper test." 2015 U.S. Dist. LEXIS 44856, 2015 WL 1535328, at *4 (N.D. Cal. Apr. 6, 2015). There, one could use a pen, paper, and her own brain to perform the claimed steps of the patent. *Id.* The fact that the claims could be done without modern technology showed the patents were directed at "abstract ideas." *Id.* Failing the "pen and paper test" indicates that a patent applies to an abstract concept, which means the patent-holder can monopolize entire fields of thought, thus hampering innovation. Here, as in *OpenTV*, the problem of how to store, organize, and access data is not new (see Dewey Decimal system). Hence, the purported solutions claimed in the True Name patents are not a uniquely technological problem and thus do not create solutions to computer-centric problems like the patents in *Enfish, McRO, KPN*, and *Finjan*. Accordingly, the Court holds the three True Name patents abstract under Alice step 1 and proceeds to step 2.

B. *Alice*/*Mayo* Step Two

At step two, the court examines the elements of the claims, both individually and "as an ordered combination" to determine if they contain an "inventive step" sufficient to "transform" the claimed abstract idea into a patent-eligible application. *Alice*, 573 U.S. at 221 (citing *Mayo*, 556 U.S. at 78-79). Step two is satisfied when the claim limitations "involve more than performance of 'well-understood, routine, [and] conventional activities previously known to the industry.'" *Content Extraction*, 77 F.3d at 1347-48 (quoting *Alice*, 573 U.S. at 225). "If a

claim's only 'inventive concept' is the application of an abstract idea using conventional and well-understood techniques, the claim has not been transformed into a patent-eligible application of an abstract idea." *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290-91 (Fed. Cir. 2018). After identifying an ineligible concept at step one, the court asks at step two: "What else is there in the claims?" *Mayo*, 566 U.S. at 78.

The question of whether a claim element or combination is well-understood, routine, and conventional to a skilled artisan in the relevant field is a question of fact and thus any fact that is pertinent to the invalidity conclusion must be proven by clear and convincing evidence. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018). Notably, "[t]he mere fact that something is disclosed in a piece of prior art . . . does not mean it was well-understood, routine, and conventional." *Id.* at 1369; *but see Va. Innovation Scis. Inc. v. Amazon.com, Inc.*, 227 F. Supp. 3d 582, 599 (E.D. Va. 2017) ("That is not to say that the §§ 102 and 103 analyses are completely irrelevant to the eligibility question."); Reply at 10-11 (arguing that PTAB decisions invalidating claims based on novelty are persuasive); *see also supra* I.B. at 9 (discussing prior art).

The '310 patent teaches the use of a "processor," "network of servers," data transfer, data "comparison," and data access/restriction, based on a data item's "content-based digital identifier," which comprises a "message digest function or a hash function." '310 patent (claims 24, 31, 81, 82, and 86); *see id.* (claim 81) (discussing the use of a device comprising a "processor and memory" in a network of computers and data comparison). The

'280 patent teaches the use "requesting" a data file based on a network's availability, which is determined by "measurement of" either the server, the cost of a connection to the server, or the reliability of a connection to the server, whereby data is delivered based on an "MD5 hash of the contents of a particular data file." '280 patent (claims 15, 16, 31, and 32); *see id.* (claim 31) (discussing a content delivery method where files are distributed across a network of servers where the request and receipt of a data file is based on the file's MD5 hash). Finally, the '662 patent teaches the use marking duplicate files for deletion across a "plurality of servers" whereby location data, *i.e.* a data item's unique content-based identifier, is used to determine duplicate files. '662 patent (claim 33).

Plaintiff argues that the Court cannot decide patent eligibility at this stage because a factual dispute exists about what is routine and conventional in the art. Opp. at 20-21. Plaintiff further argues that Defendants have not shown by clear and convincing evidence that a person of ordinary skill in the art ("POSITA") would have deemed the "ordered combinations" of elements in each claim to be "well-understood, routine, or conventional." *Id.* at 21. Specifically, Plaintiff argues that the specifications disclose numerous "improvements" over the prior art like: (1) ensuring a system only stores one copy of any data item; (2) using data-identifiers to provide access to data while simultaneously using the identifier to ensure only appropriate persons access the data file; and (3) verifying that requested data is the correct data using only the data identifier. Opp. at 25-27. This, Plaintiff's argue, shows that the patents claim an inventive use of hash functions and thus recite unconventional features that provide benefits

over conventional prior art. *Id.* at 25 (citing *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1378 (Fed. Cir. 2005) ("New uses of old products or processes are indeed patentable subject matter.")).

The Court disagrees with Plaintiff; the asserted claims fail to provide an inventive concept. The relevant inquiry is "not whether the claimed invention as a whole is unconventional or non-routine." *BSG*, 899 F.3d at 1290. Rather, the court assesses "whether the claim limitations *other than the invention's use of the ineligible concept to which it was directed* were well-understood, routine, and conventional." *Id.* (emphasis added). No "inventive concept" exists when an abstract idea is used in a conventional way. *Id.* at 1290-91.

A "hash identifier" uses extracted data to identify a specific data-file—it is a "generic and routine concept that does not transform the claims to a patent eligible application of the abstract idea." *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1375 n.9 (Fed. Cir. 2017). Concepts like "comparing," "restricting access," and "de-duplicating" data are well-known and conventional functions of computers and data-management systems, as are "processors" and "computer networks." *See, e.g., Alice*, 573 U.S. at 226 ("But what petitioner characterizes as specific hardware—a 'data processing system' with a 'communications controller' and 'data storage unit,' . . . is purely functional and generic. Nearly every computer will include a 'communications controller' and 'data storage unit' capable of performing the basic calculation, storage, and transmission functions."); *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324-25 (Fed.

Cir. 2016) (holding generic computer components like "interface," "network," and "database" do not satisfy the inventive concept requirement); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) ("That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive."); *TLI*, 823 F.3d at 611, 614-15 (holding that when claims use functional language and conventional technology, like a phone receiving data, extracting information from that data, and storing images, claims are not patent eligible); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1371 (Fed. Cir. 2015) ("Requiring the use of a 'software' 'brain' 'tasked with tailoring information and providing it to the user' provides no additional limitation beyond applying an abstract idea, restricted to the Internet, on a generic computer."); *see also SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018) ("We may assume that the techniques claimed are groundbreaking, innovative, or even brilliant, but that is not enough for eligibility." (quotation marks and citation omitted)).

There is, in short, nothing "inventive" about any claim details, individually or in combination, that are not themselves abstract ideas. The claims are directed at "standard file management" functions. '310 (6:28). Using a generic hash function, a server system, or a computer does not render these claims non-abstract; the claims are still directed to the abstract ideas of receiving, storing, deleting, and controlling access to data. *See BSG*, 899 F.3d at 1290-91. Hence, none of the hardware recited by the claims "offers a meaningful limitation beyond generally linking 'the use of the [method] to a particular

technological environment.'" *Alice*, 573 U.S. at 226 (quoting *Bilski*, 561 U.S. at 610-11). Allowing the three True Name patents to survive Section 101 would allow Plaintiff to monopolize the entire field of data-storage. *Cf. id.* at 226-27 ("The concept of patentable subject matter under § 101 is not like a nose of wax which may be turned and twisted in any direction." (quotation marks and citation omitted)). Accordingly, because the asserted claims' steps do nothing more than apply a well-known hashing concept to data-storage, the '310, '280, and '662 patents are directed to patent-ineligible subject matter and fail under Section 101.

IV. CONCLUSION

For the foregoing reasons, the Court **GRANTS** Defendants' motion for judgment on the pleadings and holds the '310, '280, and '662 patents invalid for failure to satisfy 35 U.S.C. § 101. Since this is a legal issue and amendment would be futile, leave to amend would be denied. In any event, such leave was not requested. The Clerk shall close the file and a judgment in favor of Defendants shall follow.

IT IS SO ORDERED.

Dated: January 29, 2020

/s/ Edward J. Davila
EDWARD J. DAVILA
United States District Judge

APPENDIX C — DENIAL OF REHEARING OF THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT, FILED NOVEMBER 5, 2021

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

2020-1543

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant

v.

GOOGLE LLC, YOUTUBE, LLC,

Defendants-Appellees

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01317-EJD, Judge Edward J. Davila.

2020-1553

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant

v.

FACEBOOK, INC.,

Defendant-Appellee

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01356-EJD, Judge Edward J. Davila.

Appendix C

2020-1554

PERSONALWEB TECHNOLOGIES LLC,

Plaintiff-Appellant

LEVEL 3 COMMUNICATIONS LLC,

Plaintiff

v.

EMC CORPORATION, VMWARE, INC.,

Defendants-Appellees

Appeal from the United States District Court for the Northern District of California in No. 5:13-cv-01358-EJD, Judge Edward J. Davila.

ON PETITION FOR REHEARING EN BANC

Before MOORE, *Chief Judge*, NEWMAN, LOURIE, DYK, PROST, O'MALLEY, REYNA, TARANTO, CHEN, HUGHES, and STOLL, *Circuit Judges*.[*]

PER CURIAM.

O R D E R

PersonalWeb Technologies, LLC filed a petition for rehearing en banc. The petition was first referred as a petition for rehearing to the panel that heard the appeal,

[*] Circuit Judge Cunningham did not participate.

and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will issue on November 12, 2021.

November 5, 2021
Date

FOR THE COURT

/s/ Peter R. Marksteiner
Peter R. Marksteiner
Clerk of Court

APPENDIX D — STATUTORY PROVISION

35 U.S.C.A. § 101

§ 101. Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.