

No. 16-

IN THE
Supreme Court of the United States

SYNOPSIS, INC.,

Petitioner,

v.

MENTOR GRAPHICS CORPORATION,

Respondent.

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

PETITION FOR A WRIT OF CERTIORARI

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April 27, 2017

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QUESTIONS PRESENTED

In *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347 (2014), the Court reaffirmed the two-part test for determining whether an invention is patent-eligible under 35 U.S.C. § 101: (1) whether the patent claims are directed to a patent ineligible concept, such as laws of nature, natural phenomena, or abstract ideas, and (2), if so, whether the elements of the claim contain an “inventive concept” that transforms the ineligible concept into an invention that is patent-eligible. Here, a panel of the Federal Circuit held that in determining whether a patent is directed to an abstract idea, a court must ignore the specification and evaluate only the express limitations in the claims. The panel further held that the accused patents failed the second step of *Alice* because the claims do not explicitly call for involvement of a computer and therefore could not be characterized as an improvement to computers.

The questions presented are:

1. Whether the § 101 inquiry requires courts to ignore the specification, as the Federal Circuit held, or whether courts should ascertain the true scope of the claims in light of the specification and intrinsic record in determining whether they are drawn to a patent-ineligible concept.

2. Whether an otherwise revolutionary technological breakthrough is not an “inventive concept” under the second step of *Alice* merely because the court believed the breakthrough could theoretically be implemented without a computer.

PARTIES TO THE PROCEEDING

Petitioner (plaintiff-appellant below) is Synopsys, Inc. Respondent (defendant-appellee below) is Mentor Graphics Corporation.

RULE 29.6 STATEMENT

Petitioner Synopsys, Inc. has no parent corporation, and no publicly held corporation owns 10% or more of its stock.

TABLE OF CONTENTS

	Page
QUESTIONS PRESENTED.....	i
PARTIES TO THE PROCEEDING	ii
RULE 29.6 STATEMENT	ii
TABLE OF AUTHORITIES.....	v
OPINIONS BELOW	1
JURISDICTION	1
STATUTE INVOLVED.....	1
INTRODUCTION	1
STATEMENT OF THE CASE.....	4
I. STATUTORY BACKGROUND.....	4
II. PROCEEDINGS BELOW	6
A. The Invention.....	6
B. Procedural Background	8
REASONS FOR GRANTING THE PETITION...	11
I. CERTIORARI IS NEEDED TO RESOLVE THE CONFLICTS CREATED BY THE DECISION BELOW AND RE-ESTABLISH THAT PATENT CLAIMS MUST BE READ AS A WHOLE.....	11
II. THE FEDERAL CIRCUIT'S RULE FOR PROCESS PATENTS INVOLVING MEN- TAL STEPS SHOULD BE REJECTED	19
CONCLUSION	24
APPENDICES	
APPENDIX A: <i>Synopsys, Inc. v. Mentor Graph- ics Corp.</i> , 839 F.3d 1138 (Fed. Cir. 2016)	1a

TABLE OF CONTENTS—continued

	Page
APPENDIX B: <i>Synopsys, Inc. v. Mentor Graphics Corp.</i> , 78 F. Supp. 3d 958 (N.D. Cal. 2015).....	28a
APPENDIX C: <i>Synopsys, Inc. v. Mentor Graphics Corp.</i> , No. 15-1599 (Fed. Cir. Dec. 28, 2016).....	43a

TABLE OF AUTHORITIES

CASES	Page
<i>Alice Corp. Pty. Ltd. v. CLS Bank Int'l</i> , 134 S. Ct. 2347 (2014).....	<i>passim</i>
<i>Bilski v. Kappos</i> , 130 S. Ct. 3218 (2010) ..	<i>passim</i>
<i>Brooks v. Fiske</i> , 56 U.S. (15 How.) 212 (1854).....	13, 15
<i>CLS Bank Int'l v. Alice Corp. Pty. Ltd.</i> , 768 F. Supp. 2d 221 (D.D.C. 2011), <i>rev'd on other grounds</i> , 685 F.3d 1341 (Fed. Cir.), <i>vacated en banc</i> , 484 F. App'x 559 (Fed. Cir. 2012).....	16
<i>Diamond v. Chakrabarty</i> , 447 U.S. 303 (1980).....	5
<i>Eon-Net LP v. Flagstar Bancorp</i> , 653 F.3d 1314 (Fed. Cir. 2011).....	18
<i>Exxon Mobil Corp. v. Allapattah Servs., Inc.</i> , 545 U.S. 546 (2005).....	11
<i>Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.</i> , 535 U.S. 722 (2002).....	13
<i>Gen. Dynamics Land Sys., Inc. v. Cline</i> , 540 U.S. 581 (2004).....	17
<i>Gottschalk v. Benson</i> , 409 U.S. 63 (1972)....	20, 21
<i>Graver Tank & Mfg. Co. v. Linde Air Prods. Co.</i> , 336 U.S. 271 (1949), <i>adhered to on reh'g</i> , 339 U.S. 605 (1950).....	4, 13
<i>Markman v. Westview Instruments, Inc.</i> , 517 U.S. 370 (1996).....	12, 17
<i>Mayo Collab. Servs. v. Prometheus Labs., Inc.</i> , 132 S. Ct. 1289 (2012).....	5, 17
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 134 S. Ct. 2120 (2014).....	12, 13
<i>Parker v. Flook</i> , 437 U.S. 584 (1978).....	2, 14, 15, 18
<i>Philips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	4, 13, 17

TABLE OF AUTHORITIES—continued

	Page
<i>Synopsys, Inc. v. Mentor Graphics Corp.</i> , No. C 12-6467, 2013 WL 5957866 (N.D. Cal. Nov. 7, 2013).....	10
<i>Teva Pharm. USA, Inc. v. Sandoz Inc.</i> , 135 S. Ct. 831 (2015).....	13, 17
<i>In re TLI Commc'ns LLC Patent Litig.</i> , 823 F.3d 607 (Fed. Cir. 2016)	16
<i>Ultramercial, Inc. v. Hulu, LLC</i> , 772 F.3d 709 (Fed. Cir. 2014), <i>cert. denied</i> , 135 S. Ct. 2907 (2015)	16
<i>United States v. Adams</i> , 383 U.S. 39 (1966).....	4, 13, 14

STATUTES

28 U.S.C. § 1295(a)(1)	19
35 U.S.C. § 100(b).....	5, 23
§§ 101–103	4
§ 101	1, 5
§ 102	5
§ 103	5
§ 112	2, 4, 12, 13
§ 113	4
§ 114	4

PETITION FOR A WRIT OF CERTIORARI

Synopsys, Inc. respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit.

OPINIONS BELOW

The Federal Circuit's opinion is reported at 839 F.3d 1138 and reproduced at Pet. App. 1a–27a. The district court's opinion granting summary judgment for respondent is reported at 78 F. Supp. 3d 958 and reproduced at Pet. App. 28a–42a.

JURISDICTION

The court of appeals entered judgment on October 17, 2016. Pet. App. 1a. On December 28, 2016, the court of appeals denied Synopsys's petition for panel rehearing and rehearing en banc. *Id.* at 44a. On March 15, 2017 the Chief Justice granted Synopsys's application for an extension of time to file this petition until April 27, 2017. This Court has jurisdiction under 28 U.S.C. § 1254(1).

STATUTE INVOLVED

Section 101 of the Patent Act provides: "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." 35 U.S.C. § 101.

INTRODUCTION

In this case, the Federal Circuit invalidated, as unpatentable, patents that revolutionized the microchip design industry by allowing computers to

undertake the most complex aspects of microchip design for the first time. The Federal Circuit did not dispute that the patents substantially improved computer functionality, enabling them to design microchips as they had never done before. Nevertheless, the Federal Circuit invalidated the patents because it found that the claims could theoretically also cover carrying out the patented operations by pencil and paper.

En route to its holding, the Federal Circuit ignored language in the patents' specification—a part of the patent in which Congress has required “a written description of the invention,” 35 U.S.C. § 112(a)—that expressly limited the patents to implementation on a computer. The Federal Circuit refused to consult the specification, notwithstanding over a century of this Court's contrary precedent, which instructs that the § 101 inquiry must focus on whether the patent “application, *considered as a whole*, contains no patentable invention.” *Parker v. Flook*, 437 U.S. 584, 594 (1978) (emphasis added). The conflict created by the decision in this case will sow confusion in the already chaotic § 101 jurisprudence and warrants this Court's immediate intervention.

Even as so interpreted, the Federal Circuit did not dispute that the patents “add[ed] ... to the abstract idea” that the court believed was at issue in this case, Pet. App. 26a—the hallmark of patentable subject matter under *Alice Corp. Pty. Ltd. v. CLS Bank International*, 134 S. Ct. 2347 (2014). Nevertheless, the court of appeals held the patents to be unpatentable because, in the court's view, they could cover performance of the process using pencil and paper, rather than only on a computer. The Federal Circuit did not explain how that *per se* rule was consistent with this Court's decision in *Alice* or *Bilski*

v. *Kappos*, 130 S. Ct. 3218 (2010), which rejected the argument that processes are patentable only if implemented on a machine.

If allowed to stand, the Federal Circuit's decision will gut this Court's longstanding precedent requiring that a patent be interpreted as a whole. Instead, validity will depend on whether a clever draftsman placed all relevant descriptions in the claims themselves rather than the specification. Such a result is especially unfair to the owners of the millions of patents drafted without the benefit of the rule announced in the decision below. Under the Federal Circuit's rule, parties can avoid this atextual approach to patent interpretation only by seeking explicit construction of every aspect of the patent—even aspects that have no underlying factual dispute and are entirely clear from the specification—during a formal *Markman* proceeding. That simply erects a trap for the unwary.

The Federal Circuit's attempted replacement of *Alice*'s framework for assessing validity with the machine-or-transformation test rejected in *Bilski* will likewise distort patent law by bringing about precisely the effects that prompted the Court's intervention in *Alice* and *Bilski*. The machine-or-transformation test is particularly ill-suited to analyzing computer programs, as demonstrated by this case's rejection of patents claiming an undeniably useful invention that vastly improved how computers operate.

This Court's review is needed now to correct the standard under which thousands of patents are evaluated, and thousands of patent cases are litigated, across the nation every year.

STATEMENT OF THE CASE

I. STATUTORY BACKGROUND

Congress has carefully specified the various elements that patents must contain. Each patent must contain one or more claims, which must “particularly point[] out and distinctly claim[] the subject matter which the inventor ... regards as the invention.” 35 U.S.C. § 112(b). The claims define the scope of the patent grant. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 277 (1949).

Congress has also required that each patent include a specification, which must “contain a written description of the invention ... in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same.” 35 U.S.C. § 112(a). The specification provides critical context for the claims, and the “claims are to be construed in the light of the specification[].” *United States v. Adams*, 383 U.S. 39, 49 (1966). As the Federal Circuit has explained, “the specification is always highly relevant” to the claims’ meaning; “[u]sually it is dispositive.” *Philips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc).

In addition to these two core elements of the patent itself, an inventor may also submit a drawing “where necessary for the understanding of the subject matter sought to be patented.” 35 U.S.C. § 113. And the Director of the Patent and Trademark Office has authority to require an inventor to furnish a model of his or her invention where needed for analysis, as well as “specimens or ingredients for the purpose of inspection or experiment” in certain cases. *Id.* § 114.

The substantive requirements for a patent are set forth in 35 U.S.C. §§ 101–103. Sections 102 and 103 impose rigorous demands of novelty and non-

obviousness that require detailed assessments of a patent's contribution to the state of knowledge in the relevant scientific field. See 35 U.S.C. §§ 102, 103.

By contrast, Section 101 imposes a “threshold test” for patent eligibility. *Bilski*, 130 S. Ct. at 3225. Section 101 allows a patent for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101.¹ The “expansive terms” of Section 101 were intended to give “the patent laws ... wide scope.” *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980). However, this Court has crafted “an important implicit exception” to § 101's broad conferral of patentability: “Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice*, 134 S. Ct. at 2354. These concepts are “the basic tools of scientific and technological work”; because “monopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it,” the Court has held that they are “free to all men and reserved exclusively to none.” *Mayo Collab. Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). As this Court recently warned in *Alice*, courts must “tread carefully in construing this exclusionary principle lest it swallow all of patent law.” 134 S. Ct. at 2354.

In *Alice*, the Court confirmed the two-part inquiry for determining whether a patent inappropriately claims a building block of human ingenuity or instead integrates one of those building blocks into a patent-eligible invention. *Id.* at 2355. Courts must first determine whether a patent is drawn to a patent-

¹ The term “process” is defined as a “process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.” 35 U.S.C § 100(b).

ineligible concept, such as a law of nature, natural phenomena, or abstract idea. *Id.* And if so, the invention is not patent-eligible unless “it contains an “inventive concept” sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 2357.

II. PROCEEDINGS BELOW

A. The Invention

Microchips, or integrated circuits, are found in practically every modern electronic device. Microchips contain millions or even billions of hardware components, which are interconnected to form logic circuits that carry out the chip’s functions. In the early days of the logic circuit design industry, designers would draw the circuit design by hand for each chip. Pet. App. 2a–3a. But designing circuitry by hand became less feasible as microchips became more complex, *id.* at 3a; indeed, a modern microchip would take years to design by hand. The need for a way to design chips by computer thus became evident.

Logic synthesis tools, or “logic synthesizers,” met that need. A logic synthesizer is a computer program that allows an engineer to describe a logic circuit at a functional level using computer languages (known as hardware description languages or HDLs); the synthesizer then designs, or “synthesizes,” the circuitry that would achieve the requested functionality. Pet. App. 3a–4a. Early logic synthesizers were severely limited: While they could design simple logic circuits, more complex logic circuit elements—in particular, high impedance drivers, level sensitive latches, and edge sensitive flip-flops—exceeded their abilities. *Id.* Because of this limitation, as the district court found, microchips containing these common but complex elements still had to be designed partly by

hand. *Id.* at 29a–30a. Thus, designing microchips continued to require “a detailed knowledge of the characteristics and operations of complex logic elements.” JA60 (col. 9, ll. 32–33).

The invention claimed in the asserted patents (the “Gregory patents”) changed that. The Gregory patents claim a process for converting functional descriptions (in HDL) into circuit designs using assignment conditions—an innovation that allowed the computerized synthesis of high impedance drivers, level sensitive latches, and edge sensitive flip-flops from functional descriptions of those elements. Pet. App. 4a. The Gregory patents thus enabled computers for the first time to be used to design the entirety of complex microchips. By doing so, the patents allowed the design of microchips with “only a knowledge of the desired operation of the resulting logic network” on the part of the engineer, JA60 (col. 9, ll. 35–36), thus revolutionizing the microchip industry.

The Gregory patents issued in 1996. From the beginning, their text left no doubt that they were designed for implementation on a computer. For instance, the very first drawing in the representative ’841 patent, a “diagram of the ... synthesizer ... of this invention,” JA59 (col. 7, ll. 44–45), features a “Computer System,” JA31 (fig. 1), and the specification states that the logic synthesizer “is loaded in [a] computer system ... using techniques known to those skilled in the art,” JA60 (col. 10, ll. 10–11). The specification further states that the “system and method of this invention are operable in a computer system,” and explained that, while the inventors used a particular computer and program, the “particular computer language and the computer system used are not an essential aspect of this invention,” because “those skilled in the art can implement the invention

using a different computer language and/or a different computer system.” *Id.* (col. 9, ll. 42–43, col. 10, ll. 35–39). The patents even included 200 pages of computer code attached to the specification that illustrated how the patents could be implemented on a computer. Pet. App. 20a.

B. Procedural Background

Synopsys filed suit alleging that certain of respondent Mentor’s logic synthesis tools infringe the Gregory patents. In response, Mentor asserted that, among other things, the Gregory patents are directed to an abstract idea and hence unpatentable under § 101.

1. The district court analyzed the Gregory patents under the two-step framework established in *Alice*. At step one, the district court found that the patents were directed to a mental process (i.e., an abstract idea) because they claimed a way to design the circuitry of a microchip “from a user’s description of what the user needs the chip to do,” which the district court found “can be performed by a skilled designer either mentally or with the aid of a pencil and paper.” Pet. App. 35a, 37a. The district court acknowledged that the patented method “is primarily intended for use with a computer,” that the “patents append source code for a computer program implementing the claimed inventions,” and that the text of the patents themselves states that “[t]he system and method of this invention are operable in a computer system.” *Id.* at 31a–32a. But the court nevertheless found that the patents included practicing the invention mentally or with pen and paper because no computer “is specifically mentioned” in the claims themselves. *Id.* at 36a; see also *id.* at 31a (“the claims themselves do

not expressly call for a computer”).² Likewise, the district court concluded that the Gregory patents failed *Alice* Step 2 because they “add nothing other than a way to implement [a] mental process on a computer.” *Id.* at 40a.

2. The Federal Circuit affirmed. At the first step of the *Alice* framework, the court of appeals held that the Gregory patents are drawn to an unpatentable mental process because it is possible for them to be “performed mentally or with pencil and paper.” Pet. App. 17a. The Federal Circuit did not dispute Synopsys’s showing that the patents’ specification demonstrated that the patents were limited to implementation on a computer. *Id.* at 20a & n.12. Indeed, the court admitted that “the written description of the Gregory Patents” “supported” claims “directed to a computerized design tool.” *Id.* at 27a. And the court did not disagree with Synopsys’s argument that the Gregory patents were intended to be, and would in fact be, performed on a computer. *Id.* at 19a–20a; see also *id.* at 22a (accepting Synopsys’s argument that “a human circuit designer may not use the specific method claimed”). Nonetheless, the Federal Circuit, like the district court, held that the Gregory patents were drawn to a mental process because “the language of the Asserted Claims themselves” did not expressly limit them to computer implementation. *Id.* at 20a. For

² Alternatively, the district court concluded that, “even if the claims are read to require implementation with a computer,” such implementation is merely “generic” and thus “will not serve to transform the nature of the instant claims from an abstract idea into something else.” Pet. App. 36a. The Court reached this conclusion notwithstanding its finding that the Gregory patents had changed the microchip industry, obviating the need for microchip engineers to have “detailed logic knowledge for most practical circuits,” *id.* at 30a, by allowing computers to design the entirety of complex microchips for the first time.

this reason, despite the undisputed advance in automated microchip design that the Gregory patents brought about, the Federal Circuit held that “[b]y their terms ... the Asserted Claims do not involve the use of a computer in any way” and “cannot be characterized as an improvement in computer technology.” *Id.* at 22a.

The only reason the Federal Circuit advanced for declining to evaluate the claims in light of the specification is that “Synopsys stops short of arguing that the Asserted Claims must be *construed* as requiring a computer to perform the recited steps.” Pet. App. 20a. The Federal Circuit did not fault Synopsys for failing to argue that the claims should be *interpreted*, in light of the specification, as implemented on a computer; to the contrary, the court noted that Synopsys made precisely this argument. See, *e.g.*, *id.* at 20a n.12 (acknowledging that Synopsys, relying on the specification, “repeatedly describe[d] the claimed methods as implemented on a computer”). The Federal Circuit objected, rather, that Synopsys should have sought a formal claim construction—i.e., at a *Markman* evidentiary hearing—that limited the claims to computer implementation. *Id.* at 20a.³

Moving to the second step of *Alice*, the Federal Circuit held that, because the claims were drawn to a mental process, the Gregory patents necessarily failed to include an “inventive concept” and thus were

³ The parties here participated in a *Markman* hearing before the district court, but neither party sought construction there on the question of whether the patents are limited to computer implementation. See *Synopsys, Inc. v. Mentor Graphics Corp.*, No. C 12-6467, 2013 WL 5957866 (N.D. Cal. Nov. 7, 2013). That fact alone suggests that both parties understood the invention would be implemented on a computer.

invalid. Pet. App. 26a. The Federal Circuit did not disagree with Synopsys that the patents “add ... to the abstract idea” at issue “the use of assignment conditions as an intermediate step in the translation process.” *Id.* But this innovation was, in the court of appeals’ view, irrelevant: Because “the claims are for a mental process” and adding assignment conditions simply assists with that mental process, the Gregory patents necessarily do not include “an inventive concept.” *Id.*

REASONS FOR GRANTING THE PETITION

I. CERTIORARI IS NEEDED TO RESOLVE THE CONFLICTS CREATED BY THE DECISION BELOW AND RE-ESTABLISH THAT PATENT CLAIMS MUST BE READ AS A WHOLE.

Viewed as a whole, the Gregory patents limit the invention—and are directed—to implementation on a computer. The Federal Circuit refused to look at that limitation on the grounds that it appeared in the wrong part of the patent. But with patents as with statutes, this Court has forbidden “looking over a crowd and picking out your friends.” *Exxon Mobil Corp. v. Allapattah Servs., Inc.*, 545 U.S. 546, 568 (2005). Instead, courts must evaluate the limitations on a patent’s claims in light of its specification. That obligation does not, as the court of appeals believed, depend on whether the parties previously sought to have the patent construed to contain a particular limitation at a formal *Markman* hearing. Such a procedural step is simply not needed to decide the purely legal question of whether the claims are directed to an abstract idea, at least where, as here, there is no underlying factual dispute and the specification is clear.

This Court has long held that a patent’s validity may be judged only after reading the claims “in light of the specification delineating the patent.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). By holding that the specification may not be consulted outside a formal *Markman* hearing, the Federal Circuit fundamentally misunderstood the role of the specification and imposed a procedural hurdle that Congress has not authorized. The Federal Circuit’s decision is inconsistent with this Court’s pronouncements on interpreting patents generally and with the Court’s cases governing invalidity and § 101 specifically.

a. The Federal Circuit’s refusal to view the claims in light of the specification is inconsistent with the longstanding approach to ascertaining the meaning of patent claims. Congress has required that each patent application include a specification, which “shall contain a written description of the invention ... in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same.” 35 U.S.C. § 112(a). The requirement of a detailed specification dates back to the early days of the Republic. “[W]hen Congress enacted the first Patent Act in 1790, it directed that patent grantees file a written specification ‘containing a description ... of the thing or things ... invented or discovered,’ which ‘shall be so particular’ as to ‘distinguish the invention or discovery from other things before known and used.’” *Nautilus*, 134 S. Ct. at 2124–25 (omissions in original). In these early days, “it was *the specification* ... that represented the key to the patent.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 379 (1996) (emphasis added). Even as the patent laws evolved to require distinct claims,

Congress continued to demand a detailed specification. *Nautilus*, 134 S. Ct. at 2125; see also 35 U.S.C. § 112.

Today the specification continues to play a critical role. While “it is the claim which measures the grant to the patentee,” *Graver Tank*, 336 U.S. at 277, “it is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention,” *Adams*, 383 U.S. at 49. That principle dates from at least the mid-nineteenth century. See *Brooks v. Fiske*, 56 U.S. (15 How.) 212, 215 (1854) (“The claim ... is not to be taken alone, but in connection with the specification and drawings; the whole instrument is to be construed together.”). As the Federal Circuit has explained, “the specification is always highly relevant to the claim construction analysis” and “is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315 (en banc). 35 U.S.C. § 112’s demand for a detailed specification makes clear the precise boundaries of an inventor’s monopoly in his invention and is thus “essential to promote progress, because it enables efficient investment in innovation.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002). The Federal Circuit’s determination that courts should ascertain the invention’s subject matter without consulting the specification is inconsistent with this longstanding approach to patent interpretation.

The Federal Circuit’s approach is also inconsistent with the approach to other invalidity doctrines. This Court’s cases leave no doubt that courts must consult the specification in determining a patent’s validity. For instance, just a few Terms ago, the Court explained that “in assessing definiteness, claims are to be read in light of the patent’s specification.” *Nautilus*, 134 S. Ct. at 2128; see also *Teva Pharm. USA, Inc. v.*

Sandoz Inc., 135 S. Ct. 831, 842–44 (2015) (resolving challenge to validity based on claim of indefiniteness by consulting drawing in specification). Likewise, the specification must be consulted in assessing novelty under 35 U.S.C. § 102. See *Adams*, 383 U.S. at 48–49.

The same is true of the Court’s cases addressing patent eligibility under § 101. The framework for assessing whether a patent is directed to an abstract idea that this Court articulated in *Mayo* and again in *Alice* requires that the patent “must be considered as a whole.” *Alice*, 134 S. Ct. at 2355 n.3. As the Court explained in *Parker v. Flook*, the inquiry focuses on whether the patent “application, *considered as a whole*, contains no patentable invention.” 437 U.S. at 594 (emphasis added). And that can only be achieved by interpreting the claims in light of the specification which gives them shape. *Adams*, 383 U.S. at 49. It is thus unsurprising that this Court has looked to the specification to assess whether a patent is impermissibly drawn to an abstract idea under § 101. See *Alice*, 134 S. Ct. at 2352 (consulting specification to determine scope of invention for abstractness inquiry).

The Federal Circuit’s wooden approach in this case conflicts with this precedent. Here, the Federal Circuit refused to consult the specification to determine whether the patents are directed to an abstract idea. See Pet. App. 20a (relating argument by Synopsys that specification and attachments showed that patents were limited to computerized implementation). Instead, while admitting that the patents may well be “intended to be used in conjunction with computer-based design tools,” the lower court held that the “§ 101 inquiry must focus on the language of the Asserted Claims themselves.” *Id.* Because “the claims do not call for any form of computer implementation of

the claimed methods,” the Federal Circuit held that they contained no limitation that saved them from being drawn to an abstract idea. *Id.*

The Federal Circuit’s flat refusal to consult the specification directly contradicts this Court’s longstanding instruction that “[t]he claim ... is not to be taken alone, but in connection with the specification and drawings; the whole instrument is to be construed together.” *Brooks*, 56 U.S. (15 How.) at 215. Courts must determine that the patent “application, *considered as a whole*, contains no patentable invention.” *Flook*, 437 U.S. at 594 (emphasis added).

b. Had the Federal Circuit consulted the specification, as this Court has instructed, it would have readily seen that the invention in the Gregory patents is limited to implementation on a computer. The specification explicitly instructs that the synthesizer “is loaded in [a] computer system ... using techniques known to those skilled in the art,” JA60 (col. 10, ll. 10–12). It explains further that the “system and method of this invention are operable in a computer system” and that, while the inventors used a particular computer and program, the “particular computer language and the computer system used are not an essential aspect of this invention,” because “those skilled in the art can implement the invention using a different computer language and/or a different computer system.” *Id.* (col. 10, ll. 35–39). The very first drawing in the patent is a diagram featuring a “Computer System.” JA31 (fig.1). And the patents featured 200 pages of computer code appended to the specification that illustrated how the invention can be implemented on a computer. Pet. App. 20a. Indeed, as the Federal Circuit itself recognized, *id.* at 5a, the specification made clear that “flow control statements” and “directive statements”—terms expressly recited in

the claims themselves, JA86 (col. 62, ll. 61–65)—are computer coding concepts and are thus necessarily implemented on a computer. JA61 (col. 11, ll. 1–39).

c. The Federal Circuit acknowledged Synopsys’s argument that the claims should be interpreted as limited to implementation on a computer. See, *e.g.*, Pet. App. 20a n.12 (acknowledging that “Synopsys repeatedly describes the claimed methods as implemented on a computer”). But it believed its refusal to consult the specification was justified because, in the court’s view, Synopsys did not “argu[e] that the Asserted Claims must be *construed*”—i.e., at a formal *Markman* hearing—“as requiring a computer to perform the recited steps.” *Id.* at 20a. Requiring that a particular limitation—entirely clear in light of the specification, and devoid of any underlying factual dispute—cannot be considered unless sought at a formal *Markman* construction hearing is inconsistent with this Court’s and the Federal Circuit’s cases.

The Federal Circuit has approved interpreting a patent’s claims in light of its specification under § 101 without first considering that interpretation at a formal *Markman* hearing. See, *e.g.*, *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 713 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 2907 (2015). So has this Court: In *Alice* the Court relied on a specification to interpret a patent notwithstanding the fact that a *Markman* hearing had not yet occurred. See 134 S. Ct. at 2352; see also *CLS Bank Int’l v. Alice Corp. Pty. Ltd.*, 768 F. Supp. 2d 221, 236 n.6 (D.D.C. 2011) (no *Markman* hearing had occurred in *Alice*). The requirement of a specific *Markman* construction of limitations completely clear in light of the specification, and lacking any underlying factual dispute, is inconsistent with this precedent.

Moreover, such a formal procedural requirement is entirely unnecessary. As the Court recently explained, the interpretation of a patent’s text—including the specification—“presents a ‘question solely of law.’” *Teva*, 135 S. Ct. at 837. When a court merely “examine[s] and ... construe[s] the document’s words without ... resolv[ing] any underlying factual disput[e],” no extrinsic evidence need be consulted and hence no evidentiary hearing under *Markman* is necessary. *Id.* at 841; see also generally *Markman*, 517 U.S. 370 (*Markman* hearing exists to gather evidence of patent’s meaning). While a *Markman* hearing is certainly warranted in some cases—such as when extrinsic evidence is needed to interpret the specification itself—the Federal Circuit erred by adopting a *per se* rule that the specification may not be consulted in the absence of a *Markman* hearing.

d. The Federal Circuit’s anomalous approach to ascertaining the invention under § 101 would create a host of problems. For one, it would result in interpreting claims divorced from the written context in which they appear. As the Federal Circuit itself has acknowledged, a patent’s claims “are part of ‘a fully integrated written instrument’ consisting principally of a specification.” *Phillips*, 415 F.3d at 1315 (citation omitted). But in the decision below, the court of appeals ignored much of this “integrated written instrument.” That disregards the “cardinal rule” of textual interpretation: words must be read in context. See, e.g., *Gen. Dynamics Land Sys., Inc. v. Cline*, 540 U.S. 581, 596 (2004).

Furthermore, the Federal Circuit’s approach “interpret[s] § 101 in ways that make patent eligibility depend simply on the draftsman’s art”—precisely the error against which this Court has repeatedly warned. *Alice*, 134 S. Ct. at 2360; see also *Mayo*, 132 S. Ct. at

1294. Under the decision below, patentees whose lawyers insert a particular limitation in the claims are rewarded, while patentees, like Synopsys, who make clear precisely the same limitation in the specification are punished. Such a formalistic distinction “would ill serve the principles underlying the prohibition against patents for” abstract ideas. *Flook*, 437 U.S. at 593. Indeed, the Federal Circuit’s rule here is entirely divorced from the purpose of the § 101 inquiry—i.e., determining whether the *subject matter* of the invention is patentable—and focuses instead on the form of the patent. Section 101 is not, and has never been, about the form of the patent. As a consequence, millions of patent holders may find that their patents were drafted incorrectly, jeopardizing numerous inventions that fall within the subject matter of § 101, but fail the Federal Circuit’s unsupportable drafting rules.

To avoid the Federal Circuit’s new interpretive rule, parties will be forced to undergo a *Markman* hearing and raise numerous arguments to preserve interpretations that are otherwise clear from the specification and without factual dispute. Such hearings, and the time and expense they involve, will be entirely futile. The hearings only effect will be to run up the cost of litigation for the parties and to consume judicial resources. See, e.g., *Eon-Net LP v. Flagstar Bancorp*, 653 F.3d 1314, 1327 (Fed. Cir. 2011) (accused infringer had “expended over \$600,000 in attorney fees and costs to litigate th[e] case through claim construction,” even without full discovery).

Certiorari is urgently needed to correct the Federal Circuit’s departure from this Court’s case law and sound judicial procedure. The unjustified procedural requirements created by the decision below will affect patent litigation in every federal district court in

America, see 28 U.S.C. § 1295(a)(1), and countless patents granted before the court's draftsmanship requirements may be endangered. Nor will the Federal Circuit correct this error on its own: Synopsys sought rehearing en banc, raising precisely this issue, but the court of appeals denied Synopsys's petition. See Pet. Reh'g at 10–13, No. 15-1599 (ECF No. 79); Pet. App. 44a. Only this Court's intervention can reinstate the correct methodology for interpreting the thousands of patents that are litigated throughout the country every year.⁴

II. THE FEDERAL CIRCUIT'S RULE FOR PROCESS PATENTS INVOLVING MENTAL STEPS SHOULD BE REJECTED.

Certiorari is warranted for another reason: The Federal Circuit departed from this Court's decisions in *Alice* and *Bilski*, fabricating a *per se* rule of invalidity under § 101 for certain types of patents without regard to whether they disclose an “inventive concept.” *Alice*, 134 S. Ct. at 2354–55. The Federal Circuit's break with this Court's precedents threatens all the harms which *Alice* and *Bilski* were designed to prevent. Certiorari is necessary to avoid these harms and resolve the conflict with this Court's cases created by the decision below.

In *Alice*, this Court explained that, if the challenged claims “are directed to ... patent-ineligible concepts”

⁴ The Federal Circuit did not opine on whether the Gregory patents would be patentable if implementable solely on a computer. Pet. App. 21a. That fact in no way detracts from the urgent need for this Court's review. That the Federal Circuit could someday find the Gregory patents invalid under the proper standard does not prevent this Court from clarifying what the standard should be—clarification that is desperately needed in light of the decision below.

under step one, a court must proceed to the second step, 134 S. Ct. at 2355, by asking whether the claims nonetheless contain an “inventive concept”—i.e. “additional features” beyond the abstract idea that “ensure that the [claim] is more than a drafting effort designed to monopolize” that idea, *id.* at 2357 (alteration in original). The Court took pains to emphasize the importance of step two. After all, “[a]t some level, ‘all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’” *Id.* at 2354 (omission in original) (quoting *Mayo*, 132 S. Ct. at 1293). That is why “an invention is not rendered ineligible for patent simply because it involves an abstract concept.” *Id.* The search for an “inventive concept” in step two beyond the abstract idea is designed to preserve patents that may involve an abstract idea but achieve “a new and useful end.” *Id.*

The importance of this search for an “inventive concept” explains why, under this Court’s cases, a court may not simply stop after deciding at step one that a patent is drawn to a particular abstract idea—here, a mental process. *Benson* illustrates the proper treatment of abstract ideas, such as mental processes, under the second step of *Alice*. *Id.* at 2357 (drawing on *Benson* to inform step two analysis). There, the Court determined under step one that the challenged patent was drawn to a mental process for using an algorithm to convert one type of numeral into another. *Gottschalk v. Benson*, 409 U.S. 63, 66–67 (1972). The Court then analyzed under step two whether the patent nonetheless applied the algorithm “to a new and useful end.” *Id.* at 67; see also *id.* at 71–72; *Alice*, 134 S. Ct. at 2357. Because the algorithm could be applied on “existing computers long in use,” the Court concluded that the patent “did not supply the

necessary inventive concept” to save it from unpatentability. *Alice*, 134 S. Ct. at 2357; see also *Benson*, 409 U.S. at 67, 71–72.

The Federal Circuit’s approach “differ[ed]” from this Court’s § 101 framework in *Alice* and its forebears. Pet. App. 26a n.15. After determining (erroneously, as explained *supra* at 11–19) that the Gregory patents are directed to a mental process under step one, Pet. App. 15a–24a, the court of appeals decided that being drawn to this particular type of abstract idea *also* meant that the patents did not include an inventive concept under step two, *id.* at 24a–26a. The Federal Circuit did not dispute that the Gregory patents “add ... to the abstract idea [of] translating a functional description of a logic circuit into a hardware component description of the logic circuit.” *Id.* at 26a. The patents do this by disclosing “the use of assignment conditions”—which enable computers to design the most complex aspects of microchip circuitry for the first time—“as an intermediate step in the translation process.” *Id.* But achieving this “new and useful end,” *Alice*, 134 S. Ct. at 2354, was not enough for the Federal Circuit; the court held that the Gregory patents were invalid simply because they “are for a mental process” rather than restricted exclusively to implementation on a computer. Pet. App. 26a. By holding that merely being drawn to a mental process is enough to invalidate a patent, no matter the “new and useful end” it may obtain, the Federal Circuit adopted a *per se* rule that is flatly inconsistent with this Court’s approach in *Alice*.

As this case illustrates, the Federal Circuit’s decision to jettison step two for patents drawn to mental processes threatens precisely the harms that this second step was designed to prevent. As this Court explained in *Alice*, courts must “tread carefully in

construing [the] exclusionary principle” implicit in § 101 “lest it swallow all of patent law” by rendering invalid patents that achieve “new and useful end[s].” 134 S. Ct. at 2354. Here, the Federal Circuit invalidated patents that, the undisputed record shows, revolutionized an industry by allowing engineers to use computers to design breathtakingly complex microchip circuitry for the first time. “[I]mprov[ing] the functioning of the computer” by allowing it to design microchips better is a prime example of an invention the patent laws should protect. *Id.* at 2359. But the Federal Circuit’s *per se* rule strips the Gregory patents of that protection.

That *per se* rule also violates this Court’s decision in *Bilski*. In that case, the Court rejected another Federal Circuit *per se* rule that maintained a process patent was patentable under § 101 only if it was implementable on a machine or transformed an article. 130 S. Ct. at 3227. This Court dismissed this “machine-or-transformation” test, explaining that nothing in the statutory text limited a patentable process to implementation on a machine or transformation of an article. *Id.* at 3226. And a plurality of the Court emphasized the dangers of applying the rigid machine-or-transformation test to inventions of the Information Age, such as computer programs. *Id.* at 3227 (plurality opinion). The Federal Circuit’s machine-or-transformation test, the plurality explained, risked distracting from the fundamental question in § 101 cases: whether the challenged patent protects a “valuable invention[] without transgressing the public domain.” *Id.*

By conditioning patentability on whether the Gregory patents are implementable exclusively on a computer—regardless of the “new and useful” ends the invention achieved—the Federal Circuit’s decision

below effectively revives the “machine-or-transformation” test this Court rejected in *Bilski*. The Federal Circuit expressly based its holding of invalidity solely on its belief that the Gregory patents were not exclusively computer-implementable. It held that the patents failed the first step of *Alice* because they were drawn to mental processes rather than implementable on a computer. *See* Pet. App. 15a–24a. And, as the Federal Circuit explained, the claims failed *Alice*’s second step for the same reason, *id.* at 24a–26a, regardless of the patents’ revolutionary effect on the microchip design industry.

The Federal Circuit’s rule in this case, like the one struck down in *Bilski*, has no basis in the statutory text. The term “process” in § 101 is defined as a “process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.” 35 U.S.C. § 100(b). No “ordinary, contemporary, common meaning of the definitional terms ‘process, art or method’ ... require[s] these terms to be tied to a machine.” *Bilski*, 130 S. Ct. at 3226 (internal citation omitted). And the courts are not permitted to impose atextual *per se* limits on the type of process that may be patentable. *Id.* at 3226–27.

Furthermore, the latest version of the *per se* rule threatens precisely the same dangers as the machine-or-transformation test that was discarded in *Bilski*. The plurality in that case cautioned that the machine-or-transformation test was unsuitable for Information Age inventions such as computer programs, because “[i]n the course of applying the ... test to emerging technologies, courts may pose questions of such intricacy and refinement that they risk obscuring the larger object” of the patent laws. *Id.* at 3227 (plurality opinion). That is precisely what happened here: The Federal Circuit spent an entire opinion discussing

whether the Gregory patents are implementable exclusively on a computer without stepping back to ask the larger question: do the Gregory patents protect a “valuable invention[] without transgressing the public domain.” *Id.* For the reasons given *supra* at 19–23, they clearly do.

This Court’s review is needed to vindicate the principles laid down in *Alice* and *Bilski* and protect the thousands of patents that “improve the functioning of the computer,” *Alice*, 134 S. Ct. at 2359, “without transgressing the public domain,” *Bilski*, 130 S. Ct. at 3227 (plurality opinion).

CONCLUSION

For the foregoing reasons, the petition should be granted.

Respectfully submitted,

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April 27, 2017

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APPENDIX

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APPENDIX A

UNITED STATES COURT OF APPEALS,
FEDERAL CIRCUIT

2015-1599

SYNOPSYS, INC., A DELAWARE CORPORATION,

Plaintiff-Appellant,

v.

MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,

Defendant-Appellee.

Decided: October 17, 2016

OPINION

Before LOURIE, MOORE, AND CHEN, *Circuit Judges.*

CHEN, *Circuit Judge.*

Synopsys, Inc. appeals the District Court for the Northern District of California's grant of summary judgment invalidating certain claims of U.S. Patent Nos. 5,530,841; 5,680,318; and 5,748,488 (collectively, the Gregory Patents) under 35 U.S.C. § 101. *See Synopsys, Inc. v. Mentor Graphics Corp.*, 78 F.Supp.3d 958 (N.D. Cal. 2015) (*Summary Judgment Order*). Synopsys argues that, contrary to the district court's holding, the Gregory Patents are not directed to ineligible subject matter because they relate to complex algorithms used in computer-based synthesis of logic circuits. We disagree. A review of the actual claims at issue shows that they are directed to the abstract idea