

# United States Court of Appeals for the Federal Circuit

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SAS INSTITUTE, INC.,  
*Appellant*

v.

COMPLEMENTSOF, LLC.,  
*Cross-Appellant*

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2015-1346, 2015-1347

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Appeals from the United States Patent and Trade-  
mark Office, Patent Trial and Appeal Board in No.  
IPR2013-00226.

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Decided: June 10, 2016

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JOHN MARLOTT, Jones Day, Chicago, IL, argued for  
appellant. Also represented by GREGORY A. CASTANIAS,  
Washington, DC; DAVID B. COCHRAN, Cleveland, OH;  
MATTHEW JOHNSON, Pittsburgh, PA.

MATTHEW TOPIC, Loevy & Loevy Attorney at Law,  
Chicago, IL, argued for cross-appellant.

JOSEPH GERARD PICCOLO, Office of the Solicitor, Unit-  
ed States Patent and Trademark Office, Alexandria, VA,  
argued for intervenor. Also represented by THOMAS W.  
KRAUSE, SCOTT WEIDENFELLER, STACY BETH MARGOLIES.

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Before NEWMAN, CHEN, and STOLL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* STOLL.

Opinion concurring-in-part and dissenting-in-part filed by  
*Circuit Judge* NEWMAN.

STOLL, *Circuit Judge*.

SAS Institute, Inc. filed an inter partes review (“IPR”) petition with the Patent Trial and Appeal Board (“Board”) to review the patentability of ComplementSoft’s U.S. Patent No. 7,110,936. The Board instituted an IPR proceeding on some, but not all, of the ’936 patent claims challenged in SAS’s petition. The Board ultimately found all of the instituted claims, except for claim 4, unpatentable in view of the prior art. SAS argues on appeal that the Board misconstrued a claim term and that the Board erred by not addressing in the final written decision claims SAS petitioned against, but that the Board did not institute as part of the proceeding. ComplementSoft cross-appeals two of the Board’s claim constructions. For the reasons below, we agree with the Board on all of the challenged constructions and determine that the Board did not need to address in its final written decision claims it did not institute. We also vacate the Board’s determination that claim 4 is patentable and remand so that the parties may address a new construction that the Board adopted in its final written decision after interpreting the claim differently before.

## BACKGROUND

### I.

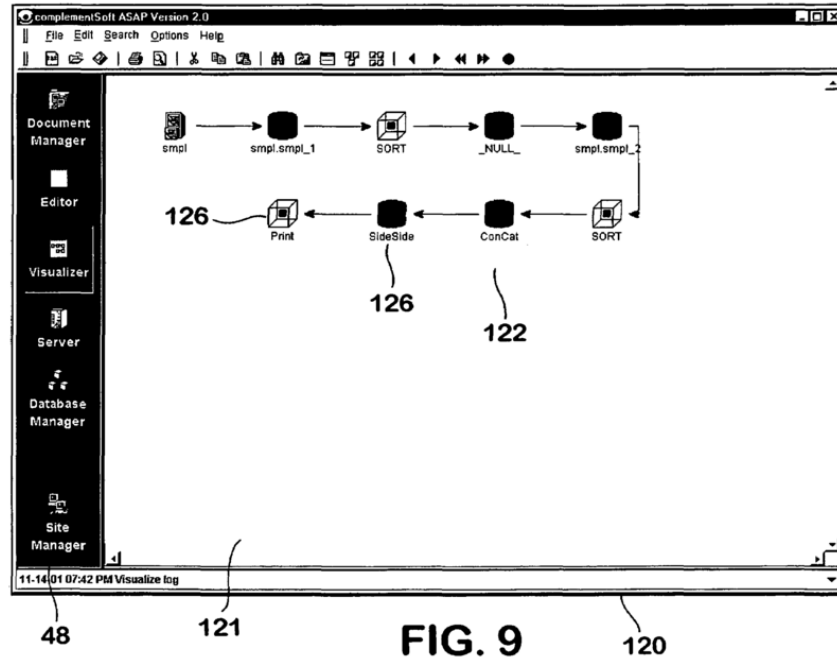
ComplementSoft is the assignee of the ’936 patent, issued September 19, 2006, and directed to an “Integrated Development Environment for generating and maintaining source code . . . in particular, programmed in data

manipulation languages.” ’936 patent col. 2 ll. 8–11. The patent characterizes a development environment as comprising a set of software tools allowing users to develop, edit, and debug software for a particular programming language or set of programming languages. *Id.* col. 1 ll. 32–48. The development environment contemplated by the ’936 patent utilizes a graphical user interface and is particularly designed for data manipulation languages, including SAS®, which is developed by the appellant. *Id.* col. 1 l. 64 – col. 2 l. 3, col. 2 l. 11. The specification describes that the development environment of the ’936 patent serves three primary functions: (1) it allows users to locally edit code stored on a central server; (2) it detects a user’s programming language and parses code accordingly; and (3) it generates representative visualization of such code, which can be directly edited to effect a change to the underlying code. *Id.* col. 2 l. 8 – col. 3 l. 20.

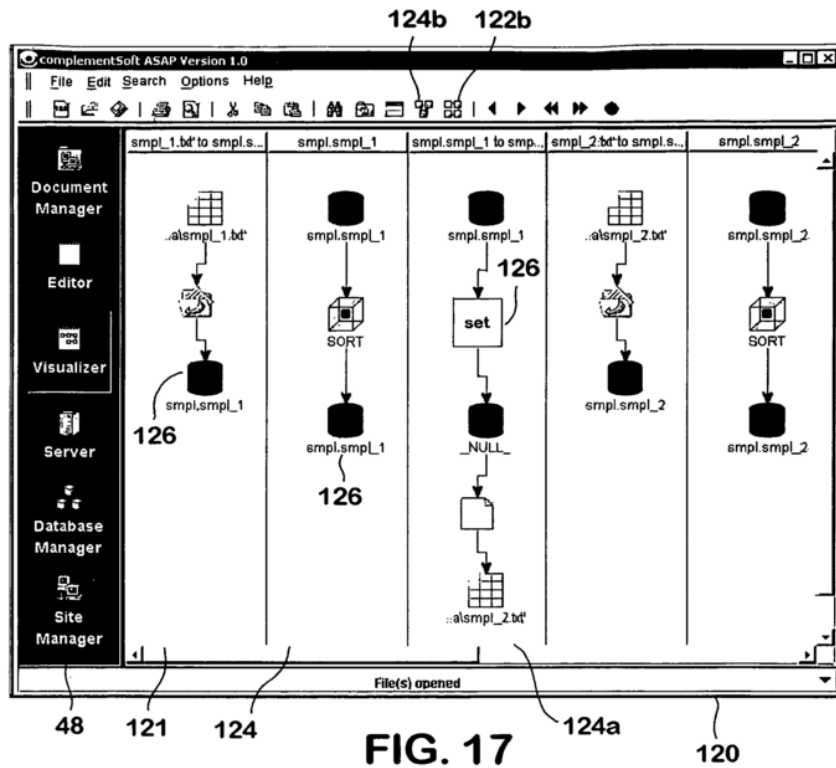
The specification describes that four major components of the ’936 patent design environment are a document manager, an editor, a parser layer, and a visualizer. The document manager is a program that performs enhanced file management functions. *Id.* col. 6 ll. 22–42. The editor allows a user to edit and debug source code using standard text-editing functions. *Id.* col. 7 l. 3 – col. 8 l. 7. The parser layer examines source code, detects which programming language is being used in the code, and applies rules and logic corresponding to that programming language. *Id.* col. 9 ll. 38–53, col. 17 ll. 30–45. Finally, the visualizer works in conjunction with the parser layer to parse the code and display it graphically using icons connected with arrows. *Id.* col. 8 ll. 8–12.

The ’936 patent discloses two types of visualizations, those for program flows and those for data flows. Program flow diagrams contain programming block icons, which represent sections of source code, linked with arrows that depict the overall flow of the program. *Id.*

col. 2 ll. 38–40, col. 15 ll. 56–59. Figure 9 of the '936 patent depicts a program flow.



Data flow diagrams, the other visualization disclosed by the '936 patent, “are comprised of icons depicting data processing steps and arrows to depict the flow of the data through the program.” *Id.* col. 2 ll. 40–42. Figure 17 of the '936 patent depicts a data flow.



During prosecution, the patentee added the “data manipulation languages” limitation to the claims in response to a prior art rejection based on U.S. Patent No. 6,851,107 to Coad (“the Coad patent”). The Coad patent generally describes a design environment for purely object-oriented programming languages, such as Java and C++. In response to the patentee’s amendment, the examiner allowed the claims to issue, stating that the Coad patent does not disclose “that the detected language is a data manipulation language.” J.A. 528.<sup>1</sup>

<sup>1</sup> Citations to “J.A. \_\_\_” refer to the Joint Appendix filed by the parties.

The claims at issue in this appeal are independent claim 1 and dependent claim 4. They recite:

1. An integrated development environment, comprising:

a document manager for retrieving source code programmed using one of a plurality of types of *data manipulation languages*;

an editor for displaying the retrieved source code and providing a means for a user to edit the retrieved source code;

a parser layer which detects the one of the plurality of types of *data manipulation languages* in which the retrieved source code is programmed and which activates rules and logic applicable to the detected one of the plurality of types of *data manipulation languages*; and

a visualizer dynamically linked to the editor for displaying *graphical representations of flows* within the retrieved source code using the rules and logic applicable to the detected one of the plurality of types of *data manipulation languages* and activated by the parser, wherein the editor, parser layer and visualizer cooperate such that edits made to the source code using the editor are automatically reflected in the *graphical representations of flows* displayed by the visualizer and edits made to the *graphical representations of flows* in the visualizer are automatically reflected in the source code displayed by the editor.

4. The integrated development environment as recited in claim 1, wherein the *graphical representations of data flows* are expandable and collapsible.

*Id.* col. 18 ll. 19–43, 50–52 (emphases added).

## II.

SAS petitioned for IPR of the '936 patent, alleging that all sixteen of the patent's claims were unpatentable as anticipated under 35 U.S.C. § 102 or as obvious under 35 U.S.C. § 103.<sup>2</sup> The Board instituted IPR for claims 1 and 3–10 on obviousness grounds, but did not institute IPR for claims 2 and 11–16. Relevant to this appeal, the Board's institution decision construed "data manipulation language" as "a programming language used to access data in a database, such as to retrieve, insert, delete, or modify data in the database," and "graphical representations of flows within the retrieved source code" as "a diagram that depicts a map of the progression (or path) through the source code." *SAS Inst., Inc. v. ComplementSoft, LLC*, IPR2013-00226, 2013 WL 8595939, at \*4–6 (PTAB Aug. 12, 2013) (*Institution Decision*). The institution decision also interpreted "graphical representations of data flows" to mean "a depiction of a map of the path of data through the executing source code." *Id.* at \*12.

The Board's final written decision concluded that claims 1, 3, and 5–10 of the '936 patent were unpatentable as obvious in view of the prior art. At the same time, the Board found claim 4 patentable over the prior art. Particularly, the Board found that the prior art did not satisfy the "graphical representations of data flows" limitation in claim 4, which it newly construed to mean "a graphical representation comprised of icons depicting data processing steps and arrows to depict the movement

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<sup>2</sup> The versions of 35 U.S.C. §§ 102 and 103 that apply here are those in force preceding the changes made by the America Invents Act, given the effective filing dates of the claims of the '936 patent. See Leahy–Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 293 (2011).

of data through source code.”<sup>3</sup> The Board’s construction of this purportedly unmet claim limitation differed from the interpretation the Board gave in its institution decision: “a depiction of a map of the path of data through the executing source code.” *Institution Decision*, 2013 WL 8595939, at \*12. The final written decision did not review patentability of claims 2 and 11–16 for which the Board did not institute IPR. *See SAS Inst., Inc. v. ComplementSoft, LLC*, IPR2013-00226, 2014 WL 3885937, at \*24 & n.3 (PTAB Aug. 6, 2014) (*Final Written Decision*) (“Claims 2 and 11–16 are not at issue in this trial.”).

SAS sought rehearing before the Board, which the Board denied. SAS then timely appealed to this court, and ComplementSoft timely cross-appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 141(c) to review the Board’s final written decision.

#### DISCUSSION

On appeal, SAS argues that the Board erred by construing “graphical representations of data flows” in claim 4 as “a graphical representation comprised of icons depicting data processing steps and arrows to depict the movement of data through source code.” SAS also argues that it was improper for the Board to change its interpretation of this claim term in the final written decision without

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<sup>3</sup> The final written decision actually construed the shorter term “data flows.” The Board, however, in its denial of SAS’s request for rehearing, clarified that the construction applies equally to the longer claim term “graphical representations of data flows,” else the construction would repeat the “graphical representations” language found in the claim. *SAS Inst., Inc. v. ComplementSoft, LLC*, IPR2013-00226, Paper No. 40, at \*3–4 (PTAB Nov. 10, 2014) (*Rehearing Denial*).



affording the parties an opportunity to respond. SAS lastly argues that the Board’s final written decision is deficient for failing to address the patentability of all claims SAS included in its IPR petition, including those for which the Board did not institute IPR. ComplementSoft cross-appeals, arguing that the Board erred in construing two terms in claim 1: “data manipulation language” as “a programming language used to access data in a database, such as to retrieve, insert, delete, or modify data in the database”; and “graphical representations of flows within the retrieved source code” as “a diagram that depicts a map of the progression (or path) through the source code.” We first address the parties’ claim construction arguments and then move to SAS’s remaining arguments.

## I.

“The ultimate construction of the claim is a legal question and, therefore, is reviewed de novo.” *Info-Hold, Inc. v. Applied Media Techs. Corp.*, 783 F.3d 1262, 1265 (Fed. Cir. 2015). Further, claim construction based solely upon intrinsic evidence—meaning the patent claims, the patent specification, and the prosecution history—is a matter of law reviewed de novo. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). On the other hand, when extrinsic evidence is relied upon, we review the Board’s “underlying factual determinations involving extrinsic evidence for substantial evidence.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015) (citing *Teva*, 135 S. Ct. at 841–42).

Claim construction seeks to ascribe the meaning to claim terms as a person of ordinary skill in the art at the time of invention would have understood them. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In an IPR proceeding, claims are given their broadest reasonable interpretation

in light of the specification. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1279 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, No. 15-446, 2016 WL 205946 (U.S. Jan. 15, 2015). In construing terms, “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. Indeed, the specification is “the single best guide to the meaning of a disputed term” and “[u]sually, it is dispositive.” *Id.* Thus, “claims ‘must be read in view of the specification, of which they are a part.’” *Id.* at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)).

A.

The Board ultimately construed “graphical representations of data flows” as “a graphical representation comprised of icons depicting data processing steps and arrows to depict the movement of data through source code.” *Final Written Decision*, 2014 WL 3885937, at \*10. In construing this term, the Board recognized that the specification did not use the claim term at all. The Board also recognized, however, that the specification spoke extensively about “data flow diagrams” and, in fact, defined them as comprising “icons depicting data processing steps and arrows to depict the movement of data through source code.” ’936 patent col. 2 ll. 40–42. After determining that there was no reason to conclude that the patentee meant something different between the terms “graphical representations of data flows” and “data flow diagrams,” the Board used the specification’s definition of data flow diagrams to construe graphical representations of data flows.

We agree with the Board’s construction. SAS argues that because the Board’s construction is narrow, it cannot

be the broadest reasonable interpretation of the claim term. This is not so. While we have endorsed the Board's use of the broadest reasonable interpretation standard in IPR proceedings, we also take care to not read "reasonable" out of the standard. This is to say that "[e]ven under the broadest reasonable interpretation, the Board's construction cannot be divorced from the specification and the record evidence, and must be consistent with the one that those skilled in the art would reach." *Proxycorr*, 789 F.3d at 1298 (internal quotation marks omitted) (first quoting *In re NTP, Inc.*, 654 F.3d 1279, 1288 (Fed. Cir. 2011); and then quoting *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999)). The broadest reasonable interpretation here is that the claimed "graphical representation of a data flow" is commensurate with the "data flow diagram" described in the specification. The Board noted this, concluding that the specification suggests that the terms "data flow diagram" and "graphical representation of data flow" are interchangeable. *Final Written Decision*, 2014 WL 3885937, at \*10; *Rehearing Denial*, IPR2013-00226, Paper No. 40, at \*4. The only difference between these two phrases is the word "diagram" in the first phrase and the word "graphical representation" in the other. And a diagram is, in fact, a graphical representation. Because the specification explicitly defines data flow diagram, one of skill in the art having read the specification would apply this definition to graphical representations of data flows as well.

What the specification also makes clear is that program flows differ from data flows. The Board correctly noted that the specification consistently distinguishes these flows. *See Rehearing Denial*, IPR2013-00226, Paper No. 40, at \*5 (citing '936 patent col. 2 ll. 38–42, col. 8 ll. 8–14, col. 16 ll. 6–30); *see also* '936 patent abstract, col. 2 ll. 33–38, col. 3 ll. 3–5. The specification crystallizes this distinction when it describes a user having to "toggle between the program flow and the data flow display" in

the visualizer. '936 patent col. 15 ll. 50–56. The figures also show that program flows differ from data flows. *Compare id.* Fig. 9, *with id.* Fig. 17. To the extent that SAS argues that the specification describes a representation of a program flow as depicting the flow of data, we disagree that one of skill in the art would equate this with a graphical representation of a data flow, given the specification's consistent disjunction of the two flows. Thus, it is not in error for the Board's construction of "graphical representation of data flow" in claim 4 to exclude program flows.

The structure of the claims also lends support to the Board's construction. *See Phillips*, 415 F.3d at 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term."). Independent claim 1 recites broadly "graphical representations of flows," and dependent claims 2 and 3 recite more specifically that the flows are "data flows" or "program flows," respectively. '936 patent col. 18 ll. 19–49. This structure is consistent with the specification, which first discloses visualizations generally and then immediately defines program flow diagrams and data flow diagrams as distinct things. *See id.* col. 2 ll. 33–42. We therefore reject SAS's argument that the Board construed the term "graphical representations of data flows" too narrowly.

## B.

On cross-appeal, ComplementSoft first challenges the Board's construction of "data manipulation language" as "a programming language used to access data in a database, such as to retrieve, insert, delete, or modify data in the database." ComplementSoft argues that this construction should limit the claim term to program languages that are solely purposed for creating datacentric programs and which provide direct access to a database. Particularly, ComplementSoft would have us exclude

object-oriented languages altogether—even when implemented with embedded data manipulation code using Structured Query Language (“SQL”)—because the prior art Coad patent the patentee distinguished during prosecution discussed object-oriented languages. ComplementSoft makes this argument under a theory of prosecution history disclaimer.

The prosecution history of a patent, though “less useful for claim construction purposes” than the claim language and written description, plays various roles in resolving uncertainties about claim scope. *Phillips*, 415 F.3d at 1317. “[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable.” *Omega Eng’g, Inc., v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed. Cir. 2003). “Where the alleged disavowal is ambiguous, or even ‘amenable to multiple reasonable interpretations,’ *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1359 (Fed. Cir. 2003), we have declined to find prosecution disclaimer.” *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1045 (Fed. Cir. 2016) (citing *Omega Eng’g*, 334 F.3d at 1325 (“[W]e have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope.”); *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1327 (Fed. Cir. 2002)).

Prosecution history disclaimer does not apply in this case, at least not as ComplementSoft would have it. There is simply nothing in the prosecution history to suggest that SQL, which the ’936 patent specification specifically identifies as a data manipulation language, embedded within another programming language does not satisfy the “data manipulation language” limitation. It is true that ComplementSoft added the “data manipulation language” limitation to avoid the Coad patent, but the Coad patent never discloses or suggests embedded data manipulation coding. At most, the patentee dis-

claimed object-oriented programming languages without any data manipulation components. There is no clear and unmistakable evidence that the patentee disclaimed anything more.

The Board also examined the specification and found that it did not limit data manipulation languages to those providing direct access to a database. In other words, the Board found that the specification does not exclude embedding database access within object-oriented language code. We agree. And because the specification and prosecution history did not conclusively resolve construction, we also agree that it was appropriate for the Board to rely on dictionaries and expert testimony to aid its construction. Those sources lend support to the Board's construction.

ComplementSoft lastly argues that "access" to data in a database is not enough to make a programming language a "data manipulation language." As the Board noted, ComplementSoft's own expert and a named inventor on the '936 patent provided testimony that contradicts this argument. Thus, we agree with the Board that this argument is not compelling. For these reasons, we agree with the Board's construction of "data manipulation languages."

ComplementSoft's second construction challenge relates somewhat to its first. ComplementSoft argues that when the Board construed "graphical representations of flows within the retrieved source code" to mean "a diagram that depicts a map of the progression (or path) through the source code," it failed to limit the graphical representations to only depicting segments of source code that manipulate data.

Because we have already determined that a "data manipulation language" is not limited to languages that only perform data manipulation, we likewise do not inject a similar limitation into claim 1. Doing so would run

counter to the disclosure in the specification. Figures 9, 19, and 20, for instance, are graphical representations of flows. Included within these representations is an icon for a “Print” operation, which is not a data manipulation step. Thus, we agree with the Board’s construction and do not insert an additional limitation that all depicted steps must relate to data manipulation.

## II.

As noted above, we agree with the Board’s ultimate construction of the “graphical representations of data flows” claim term. The Board’s procedure for arriving at this construction, however, gives us pause.

In its institution decision, the Board’s claim construction section indicated that “data flow diagram” means “a map of the path of data through the executing source code.” *Institution Decision*, 2013 WL 8595939, at \*5. The Board equated this interpretation of “data flow diagram” with the claim limitation “graphical representations of data flows” when it denied institution of a prior art ground. Particularly, the Board concluded that SAS had not demonstrated that the prior art ground disclosed “a depiction of a map of the path of data through the executing source code” and thus had not shown that the ground “discloses a graphical representation of a data flow.” *Id.* at \*11–12 (internal quotation marks omitted).

ComplementSoft filed its patent owner’s response and identified “a diagram that depicts a map of the path of data through the executing source code” as the Board’s construction for the term “graphical representations of data flows.” While it argued that the Board misconstrued the “data manipulation language” term, it did not similarly argue that the Board misconstrued graphical representations of data flows. SAS’s reply took issue with the construction’s inclusion of the term “executing,” but suggested no modifications other than to remove this term from the construction. The parties did not ask for a

revised construction of “graphical representations of data flows” at the oral hearing.

The Board’s final written decision acknowledged that “the parties directly disagree regarding only the construction of the term ‘data manipulation language.’” *Final Written Decision*, 2014 WL 3885937, at \*3. Nonetheless, the Board newly construed “graphical representations of data flows” as “a graphical representation comprised of icons depicting data processing steps and arrows to depict the movement of data through source code,” *id.* at \*10, which varies significantly from its initial interpretation of the term as “a map of the path of data through the executing source code.” *Institution Decision*, 2013 WL 8595939, at \*12. In denying SAS’s request for rehearing, the Board concluded that the new construction did not prejudice SAS because SAS could have made construction arguments for the term in its IPR petition. *Rehearing Denial*, Paper No. 40, at \*3–4 n.1.

We disagree with the Board’s approach. As we have noted, IPR proceedings are formal administrative adjudications subject to the procedural requirements of the Administrative Procedure Act (“APA”). *See Dell Inc. v. Acceleron, LLC*, 818 F.3d 1293, 1298 (Fed. Cir. 2016); *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir. 2015); *see also Dickinson v. Zurko*, 527 U.S. 150, 154 (1999). One such APA provision is that “[p]ersons entitled to notice of an agency hearing shall be timely informed of . . . the matters of fact and law asserted.” 5 U.S.C. § 554(b)(3); *see Dell*, 818 F.3d at 1298. SAS, as the petitioner, is entitled to this procedural protection in this instance. Although in the past we have discussed § 554(b)(3) with respect to the protection it provides to the patent owner, the provision is not so limited in an instituted IPR proceeding. First, the APA provides that this protection applies to “[p]ersons entitled to notice of an agency hearing.” 5 U.S.C. § 554(b)(3). In an IPR proceeding, this class of persons includes the petitioner. *See* 35



U.S.C. § 316(a)(10) (directing the PTO to promulgate regulations “providing either party”—i.e., petitioner or patent owner—“with the right to an oral hearing as part of the proceeding”); 37 C.F.R. § 42.70 (providing that “[a] party may request oral argument” before the Board). Moreover, affording petitioners with the benefit of § 554(b)(3) is appropriate because petitioners are not disinterested parties in an IPR proceeding. Rather, petitioners stand to lose significant rights in an instituted IPR proceeding because of the estoppel effects that trigger against them if the Board issues a final written decision. *See* 35 U.S.C. § 315(e).

We have interpreted § 554(b)(3) in the context of IPR proceedings to mean that “an agency may not change theories in midstream without giving respondents reasonable notice of the change’ and ‘the opportunity to present argument under the new theory.” *Belden*, 805 F.3d at 1080 (quoting *Rodale Press, Inc. v. FTC*, 407 F.2d 1252, 1256–57 (D.C. Cir. 1968)); *see also Dell*, 818 F.3d at 1300–01 (holding that the Board, in relying on factual assertions the petitioner introduced for the first time at the oral hearing, violated § 554(b)(3) because the patent owner did not have a meaningful opportunity to respond). That maxim applies in this fact-specific circumstance. What concerns us is not that the Board adopted a construction in its final written decision, as the Board is free to do, but that the Board “change[d] theories in midstream.” *Belden*, 805 F.3d at 1080. SAS focused its argument on the Board’s institution decision claim interpretation, a reasonable approach considering ComplementsSoft agreed with this interpretation in its patent owner’s response and never suggested that the Board adopt the construction that eventually materialized in the final written decision. It is difficult to imagine either party anticipating that already-interpreted terms were actually moving targets, and it is thus unreasonable to expect that they would have briefed or argued, in the alternative,

hypothetical constructions not asserted by their opponent. This is especially true for SAS, considering the strict fifteen page limit for its reply to the patent owner's response. *See* 37 C.F.R. § 42.24(c)(1) (2012).<sup>4</sup>

Finally, to be clear, it is uncertain whether SAS will ultimately be able to show unpatentability of the '936 patent claim 4 even under the construction of "graphical representations of data flows" that the Board adopted and that we agree with. That is not for us to decide today, but for the Board to examine in the first instance after hearing from the parties on the new construction. *See Dell*, 818 F.3d at 1301 (remanding to the Board for further proceedings upon finding § 554(b)(3) not satisfied).

### III.

SAS also argues that the Board erred by not addressing in the final written decision every '936 patent claim SAS challenged in its IPR petition. The Board's final written decision, rather, addresses patentability of only those claims for which the Board instituted an IPR proceeding. SAS's argument, however, is foreclosed by our recent decision in *Synopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309 (Fed. Cir. 2016).

*Synopsys* presented the same question that SAS raises here: Must a final written decision by the Board ad-

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<sup>4</sup> 37 C.F.R. § 42.24(c)(1) has been amended to provide 5,600 words for petitioner replies to patent owner responses. *See* Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 81 Fed. Reg. 18750, 18765 (April 1, 2016). When SAS filed its petitioner reply on February 12, 2014, however, the old regulation limiting the reply to fifteen pages was in effect. *See* Rules of Practice for Trials Before the Patent Trial and Appeal Board, 77 Fed. Reg. 48669, 48673 (August 14, 2012).

dress every patent claim challenged in an IPR petition?<sup>5</sup> The petitioner argued, as does SAS, that the text of the final written decision statutory subsection, 35 U.S.C. § 318(a), compels the Board to address every petition-challenged claim. We found, however, “no statutory requirement that the Board’s final decision address every claim raised in a petition for inter partes review. Section 318(a) only requires the Board to address claims as to which review was granted.” *Id.* at 1316–17. We found it significant that § 318(a) describes “claims challenged by the petitioner,” whereas the institution decision statutory subsection, 35 U.S.C. § 314, describes “claims challenged in the petition.” We reasoned that the differing language implies a distinction between the two subsections such that § 318(a) does not foreclose the claim-by-claim approach the Board adopted there and in this case. Further, we upheld the validity of a PTO-promulgated regulation authorizing the claim-by-claim approach. *Id.* at 1316 (validating 37 C.F.R. § 42.108, which “authorize[s] the review to proceed on all or some of the challenged claims”).

Accordingly, we reject SAS’s argument that the Board must address all claims challenged in an IPR petition in its final written decision.

#### CONCLUSION

For the foregoing reasons, we agree with the Board regarding the challenged constructions and conclude that

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<sup>5</sup> Indeed, not only did SAS’s briefing identify *Synopsys* as a related case, but SAS also submitted a brief as amicus curiae in *Synopsys* urging us to reach the same result that it now argues for in this appeal. See Brief of Amicus Curiae SAS Institute, Inc. in Support of Appellant Synopsys, Inc., *Synopsys*, 814 F.3d 1309 (Nos. 14-1516, 14-1530).

SAS's argument that the Board must address all claims from the IPR petition in the final written decision is foreclosed by *Synopsys*. We vacate the Board's patentability determination of claim 4 and remand so that the parties may address the Board's construction of "graphical representations of data flows."

**AFFIRMED-IN-PART, VACATED-IN-PART, AND  
REMANDED**

# United States Court of Appeals for the Federal Circuit

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SAS INSTITUTE, INC.,  
*Appellant*

v.

COMPLEMENTSOFT, LLC.,  
*Cross-Appellant*

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2015-1346, 2015-1347

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2013-00226.

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NEWMAN, *Circuit Judge*, concurring in part, dissenting in part.

I concur in Parts I and II of the majority opinion, for I agree that principles of due process, as well as the strictures of the Administrative Procedure Act as applied to the America Invents Act (AIA) and the Patent and Trademark Office (PTO), require that the parties have the opportunity to adjust their arguments and evidence to the Patent Trial and Appeal Board's (PTAB's) change in claim construction.

I write separately because the PTAB's practice of deciding the validity of only some of the patent claims challenged in the petition does not conform to the America Invents Act. I stated these concerns in *Synopsys, Inc., v.*

*Mentor Graphics Corp.*, 814 F.3d 1309, 1324, 117 U.S.P.Q.2d 1753, 1765 (Fed. Cir. 2016) (Newman, J., dissenting). The facts and rulings in the present case further illuminate the error in the PTO's adoption of rules that depart from the legislative plan. The exclusion of some of the challenged claims from the statutory procedures and estoppels of the AIA, accomplished by accepting some of the claims for which review is sought while ignoring others, in the PTO's absolute discretion, serves no purpose other than to negate the intended legislative purpose of the AIA.

The PTO practice replaces the benefits of the America Invents Act with new disadvantages, for, after the extensive (and expensive) proceedings of *inter partes* review, the parties are left with unaddressed claims to the same patented invention, claims that can be litigated as if no post-grant proceeding had occurred. This departure from the legislative purpose is illustrated in this case more strongly than in *Synopsys*, for here the PTAB issued a split final decision, invalidating eight petitioned claims while validating one of the petitioned claims, simultaneously ignoring seven other petitioned claims that were properly presented for review. The split decision, following a partial institution, adds to the uncertainty of the claims that the PTAB chose not to review. The legislative plan contains no hint of such intentional irregularity.

As experience is gathered on diverse factual situations and the PTO's erratic implementation, concerns have arisen within the communities that collaborated in the evolution of the America Invents Act. It is incumbent on the courts to assure the correct statutory interpretation by administrative agencies charged with statutory administration. Thus I respectfully dissent from Part III of the majority opinion, and the majority's ratification of the PTO practice of addressing only some of the challenged claims in a fully compliant IPR petition.

## DISCUSSION

The America Invents Act created a new expert tribunal, charged to act with expedition and economy. Its purpose is to facilitate both the validation of properly issued patents and the elimination of invalid patents, both in service to the compelling national interest in invention and innovation. The PTO's position that it need not review some of the claims challenged in a petition for review via a post-grant proceeding is inconsistent with the Act. The PTO is authorized to refuse to institute review entirely—but a partial review cannot be inferred from the statute or accommodated to its purpose.

The statutory provisions and the legislative purpose of substituting an agency tribunal for district court proceedings on aspects of patent validity are defeated by the PTO's position that it can leave some challenged claims untouched. The America Invents Act presents a new system of reviewing issued patents, providing for stays of district court proceedings, and estoppels in all tribunals, based on the PTO decision. Final determination of the validity of a challenged patent is not achieved when the PTO selects, at its sole and unreviewable choice, which claims it will review and which it will not touch.

The post-grant procedures of the America Invents Act are of great power and promise. However, as implemented by the PTO, these procedures have produced a startlingly destabilizing effect. As an *amicus curiae* stated in an AIA case before the Supreme Court on a different aspect of the statute, "IPR was meant to open an alternative pathway to the accurate resolution of patent disputes, not a gaping loophole that undermines the integrity of both administrative and federal court patent adjudications." Brief for Intellectual Ventures as Amicus Curiae Supporting Petitioner, *Cuozzo Speed Techs., LLC v. Lee* (No. 15-446), 2016 WL 825549.

The AIA provisions are designed to act in harmony, like a well-oiled engine. Incorrect implementation by the agency distorts the framework, providing the now-observed result of protracted litigation grinding against administrative obstinacy. The victim is the Nation's innovation economy.

Statutory compliance is the judicial obligation. I focus on specific statutory provisions that relate to, and are violated by, the PTO's practice of partial decision of IPR petitions, *viz.*, 35 U.S.C. §§ 311, 312, 314, 315, and 318, and AIA Section 18(a)(D).

### ***35 U.S.C § 311. Inter Partes Review***

Section 311 states the scope of *inter partes* review, and limits such review to challenges that “could be raised under section 102 and 103 and only on the basis of prior art consisting of patents or printed publications.” 35 U.S.C. § 311(b). The AIA proceeding is structured as a complete alternative to litigation of these issues. In providing a meaningful alternative to district court litigation of these primary issues of patent validity, Congress designed the AIA to achieve expeditious and economical final resolution. *See, e.g., Patent Reform Act of 2009: Hearing Before the House Comm. on the Judiciary*, 111th Cong. 153 (2009) (statement of Rep. Manzullo) (“It is clearly appropriate to have an administrative process for challenging patent validity, but it should exist within a structure that guarantees a quick—and final—determination.”).

The legislative record is uniform and compelling. *See, e.g., Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. on the Judiciary*, 110th Cong. 13 (2007) (statement of Jon Dudas, Director, USPTO) (“[T]he estoppel needs to be quite strong that says on the second window any issue that you raised or could have raised you can bring up no place else. That second window, from the administration's position, is



intended to allow nothing—a complete alternative to litigation.”).

At enactment of the AIA in 2011, Senator Grassley summarized that

if an inter partes review is instituted while litigation is pending, that review will completely substitute for at least the patents-and-printed-publications portion of the civil litigation.

157 Cong. Rec. S1360-94 (daily ed. March 8, 2011) (statement of Sen. Grassley).

The intended complete alternative and complete substitution is impossible if the PTAB chooses incomplete review. That is my concern with Part III of the majority opinion.

***35 U.S.C. § 312. Petitions for review***

Section 312 sets the requirements for petitions for post-grant review. Among others, the petition must identify:

[I]n writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim, including—

(A) copies of patents and printed publications that the petitioner relies upon to support the petition, and

(B) affidavits or declarations of supporting evidence and opinions, if the petitioner relies on expert opinions;

35 U.S.C. § 312(a)(3). The purpose of these detailed filing requirements is: “to force a petitioner to present all of his best evidence against a patent up front. His petition itself must present a full affirmative case. It thus reinforces

the front loaded nature of an oppositional system, which is critical to the efficient resolution of proceedings by the PTO.” 154 Cong. Rec. S9982-93 (daily ed. Sept. 25, 2008) (statement of Senator Kyl on S. 3600).

In the case at bar, SAS presented complete evidence as to all of the claims that it challenged in the petition, and ComplementSoft provided a full response. Nonetheless, the PTO refused to consider all of the claims that had been placed at issue, leaving seven claims undecided.

The petition for review sets the boundaries of the IPR proceeding, as summarized by Senator Grassley on enactment of S. 23, that “by requiring petitioners to tie their challenges to particular validity arguments against particular claims, the new threshold will prevent challenges from ‘mushrooming’ after the review is instituted into additional arguments employing other prior art or attacking other claims.” 157 Cong. Rec. S1360-94 (daily ed. March 8, 2011). It is not disputed that these requirements were met in the petition presented in this case.

Section 312, like the rest of the AIA, provides no support for the PTO’s practice of accepting consideration of some of the patent claims in the petition while ignoring others, when all challenged claims are fully documented and briefed in compliance with the statute. The PTO’s selective practice is especially deleterious to the statutory purpose when the patent is in validity litigation in the district court.

### ***35 U.S.C. § 314. Institution of Inter Partes Review***

Section 314(a) establishes the threshold required for the Director to institute proceedings adjudicating validity:

The Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable

likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

35 U.S.C. § 314(a). The statute does not provide the PTO with discretion to pick and choose which of the challenged claims will be included in the post-grant review when at least one claim is found to have crossed the threshold of likely invalidity. The Director can still refuse to institute review entirely, but the Director cannot choose to consider some of the challenged claims and to ignore others. The PTO departed from the statute in adopting regulations that authorize review of only some of the challenged claims and grounds, as in 37 C.F.R. 42.108(a):

(a) When instituting inter partes review, the Board may authorize the review to proceed on all or some of the challenged claims and on all or some of the grounds of unpatentability asserted for each claim.

I am not here concerned with the statutory authorization for complete denial of a petition to institute, for then the petitioner may proceed promptly with litigation. My concern is with the unauthorized partial institution after a PTO finding that at least one of the patent claims faces a likelihood of invalidity. This defeats the legislative purpose of creating a “substitute for court litigation” that is a “quick and cost effective alternative[]” where challengers must “front load their case,” and the decision imposes estoppel to “eliminate the need to press any claims in other fora.” *Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. On the Judiciary*, 110th Cong. 7 (2007) (written responses of Jon Dudas, Director, USPTO); H.R. Rep. No. 112-98, pt. 1 at 48 (2011); 157 Cong. Rec. S1360-94 (daily ed. March 8, 2011) (Sen. Grassley during Senate consideration, amendment, and passage of S. 23); 154 Cong. Rec. S9982-

93 (daily ed. Sept. 25, 2008) (statement of Sen. Kyl on S. 3600 (Patent Reform)).

Authorization to refuse to institute a petition was included in response to the concerns of then Director Dudas about whether the PTO could handle the increased workload within the statutory time frame; this accommodation did not also authorize the PTO to choose to decide part of a petition and leave the other part undecided. Partial institution is not a reasonable statutory interpretation—it imposes additional delay, uncertainty, and cost; all contrary to the purposes of the AIA. It particularly affects § 315, discussed *post*, which imposes estoppel against the petitioner on all grounds that were “raised or reasonably could have [been] raised” in the IPR petition.

The AIA provides for two determinations by the Director when a petition for post-grant review has been filed: (1) whether the petitioner has presented grounds reasonably likely to invalidate at least one of the challenged claims, and (2) whether to institute post-grant review. Senator Kyl explained that the grant of discretion to the Director to refuse to institute review even when the invalidity threshold is met “reflects a legislative judgment that it is better that the Office turn away some petitions that otherwise satisfy the threshold for instituting an *inter partes* or post-grant review than it is to allow the Office to develop a backlog of instituted reviews that precludes the Office from timely completing proceedings.” 157 Cong. Rec. S1377 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl).

### ***35 U.S.C § 315. Estoppel***

Section 315 establishes how these post-grant procedures interact with other aspects of patent litigation. Among the consequences of the PTO’s curious and unforeseen practice, partial review does not estop unreviewed claims as to either validity or invalidity, thereby adding to the litigants’ burden rather than lightening it. The

estoppel provisions were the subject of extensive legislative discussion.

Section 315(e) provides that when a petition for review is granted and the matter proceeds to trial and decision in the PTAB in accordance with § 318(a), estoppel arises with respect to “any ground that the petitioner raised or reasonably could have raised during that inter partes review.” This estoppel applies in the PTO, in the district courts, and in the International Trade Commission.

35 U.S.C. § 315(e) Estoppel.—

(1) Proceedings before the office.—The petitioner in an inter partes review of a claim in a patent under this chapter that results in a final written decision under section 318(a), or the real party in interest or privy of the petitioner, may not request or maintain a proceeding before the Office with respect to that claim on any ground that the petitioner raised or reasonably could have raised during that inter partes review.

(2) Civil actions and other proceedings.—The petitioner in an inter partes review of a claim in a patent under this chapter that results in a final written decision under section 318(a), or the real party in interest or privy of the petitioner, may not assert either in a civil action arising in whole or in part under section 1338 of title 28 or in a proceeding before the International Trade Commission under section 337 of the Tariff Act of 1930 that the claim is invalid on any ground that the petitioner raised or reasonably could have raised during that inter partes review.

The America Invents Act was designed—after a decade of hearings and revisions—to reduce the cost of patent litigation, to resolve major validity issues in an expert

tribunal, and to put an end to repetitive challenges. The estoppel provision was a controversial aspect of the enactment.

An interim Senate Report states that contributors were concerned about the fairness of the “could have raised” estoppel provision, given the extremely limited discovery available to petitioners. *See* S. Rep. No. 111-18, at 17, to accompany S. 515 (Patent Reform Act of 2009) (“Many businesses also have described could-have-raised estoppel as a powerful brake on their use of inter partes reexamination. They find this standard vague and uncertain, and fear that if they challenge a patent in an inter partes reexamination, they will lose the ability to raise later-discovered prior art against the patent if they are subsequently sued for infringement.”).

Congress initially considered a lesser estoppel. *See* S. Rep. No. 110-259, at 22, to accompany S. 1145 (“Moreover, once a petitioner has challenged the validity of a patent through a PGR, that party may not challenge validity in a court proceeding based on any ground it raised during the PGR”). But, by the time of enactment of the AIA in 2011, stronger estoppel provisions appear to have achieved consensus. *See* 157 Cong. Rec. S952 (Feb. 28, 2011) (statement of Sen. Grassley on final consideration of S. 23):

In addition, the bill would improve the current inter partes administrative process for challenging the validity of a patent. It would establish an adversarial inter partes review, with a higher threshold for initiating a proceeding and procedural safeguards to prevent a challenger from using the process to harass patent owners. It also would include a strengthened estoppel standard to prevent petitioners from raising in a subsequent challenge the same patent issues that were raised or reasonably could have been raised in a prior

challenge. The bill would significantly reduce the ability to use post-grant procedures for abusive serial challenges to patents. These new procedures would also provide faster, less costly, alternatives to civil litigation.

Director Dudas had urged that because the PTO procedures are intended to substitute for district court litigation, litigation-type estoppel should attach to PTAB rulings:

We would favor providing for a second-window review to have a different estoppel effect than a first-window review . . . . A second-window review, however, will serve as a substitute for court litigation and, as such, should bind not only the patentee but also the challenger as a decision on the merits in litigation would.

*Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. on the Judiciary, 110th Cong. 136–137 (2007) (statement of Jon Dudas, Director, USPTO).*

Senator Grassley further summarized, at enactment, that the purpose of the estoppel is to “completely substitute” for the same issues in litigation.

Ideally extending could-have-raised estoppel to privies will help ensure that if an inter partes review is instituted while litigation is pending, that review will completely substitute for at least the patents-and-printed-publications portion of the civil litigation.

157 Cong. Rec. S1360-94 (daily ed. March 8, 2011) (statement of Sen. Grassley). When PTO Director Kappos took office as the legislation neared finality, he stated at a closing hearing on the America Invents Act:

If I can say that in my own words also, that I believe there are significant advantages for patentees who successfully go through the post-grant system—in this case inter partes review—because of those estoppel provisions. Those estoppel provisions mean that your patent is largely unchallengeable by the same party.

*America Invents Act: Hearing on H.R. 1249 Before the House Comm. on the Judiciary*, 112th Cong. 52–53 (2011) (statement of David Kappos, Director, USPTO).

The “complete substitution” for section 102 and 103 issues cannot occur unless all of the claims challenged in the petition are included when post-grant review is accepted. Challengers may choose between the IPR proceeding and district court litigation of the same issues, but Congress restricted the repetitive validity proceedings of the past. A witness testified that:

With respect to your question on alternatives to litigation...38% of all inter partes reexaminations brought between 2001 and 2005 were filed after patent litigation had already begun, showing that this proceeding, to a very significant part, is not used *instead of* litigation, but *on top of* litigation, and sometime even *after* litigation in attempts at undoing adverse district court judgments.

*Patent Reform: The Future of American Innovation Before the Senate Comm. on the Judiciary*, 110th Cong. 94 (written testimony for Alkermes plc) (emphasis original).

Senator Schumer stated at enactment of S. 23:

Too many district courts have been content to allow litigation to grind on while a reexamination is being conducted, forcing the parties to fight in two fora at the same time. This is unacceptable, and would be contrary to the fundamental purpose



of . . . provid[ing] a cost efficient alternative to litigation.

157 Cong. Rec. S1360-94 (March 8, 2011) (statement of Sen. Schumer).

These universally emphasized AIA purposes fall flat when the PTO chooses to review some but not all of the challenged claims in the petition, leaving the other claims presumably alive and well. The legislation does not contemplate such a procedure. The legislation provides only for a PTO proceeding that subjects “**any patent claim challenged by the petitioner** and any new claim added” during the proceeding to be fully and finally decided through the PTO proceeding and its subsequent appeal, bringing “more certainty in litigation.” 157 Cong. Rec. S948 (Feb. 28, 2011) (statement of Sen. Leahy on Senate consideration of S. 23) (emphasis added).

This finality is achieved by the estoppel provisions as applied to the decision on every claim challenged by the petitioner as to every issue raised or that could have been raised. *America Invents Act: Hearing on H.R. 1249 Before the House Comm. on the Judiciary*, 112th Cong. 12 (2011) (statement of David Kappos, Director, USPTO) (“Those estoppel provisions mean that your patent is largely unchallengeable by the same party.”). However, when review is declined as to some claims that may be of litigation interest, the partial institution practice cannot be a “complete[] substitute for . . . [a] portion of civil litigation.” This contravenes a primary purpose of the AIA.

During oral argument of this appeal, the court questioned PTO counsel on the relationship between the conduct of reexamination proceedings, the conduct of *inter partes* review proceedings, and the legislative purpose of the AIA’s post-grant procedures. Oral Argument at 25:28–37:20. In a letter, the PTO provided MPEP sections 2243 and 2246, stating that reexamination under past PTO practice authorized by Section 302 may be

conducted on “fewer than all claims in the subject patent or in the reexamination request.” The PTO stated that this supports the partial institution practice for AIA proceedings. PTO Letter, January 11, 2016, ECF No. 61. The PTO urged that *Chevron* deference should be applied.

However, the legislative history is clear that the AIA *inter partes* review proceedings were designed to correct inadequacies plaguing the former procedure. The former PTO reexamination differs from AIA review in that (1) reexamination under § 302 is conducted by an examiner on the written record, not by the PTAB with discovery, witnesses, and trial; (2) § 302 reexamination entitles amendment as of right, and examination of the amended claims is of right, contrary to the PTO’s implementation of the AIA statute; (3) no estoppel attaches to § 302 reexamination, unlike the AIA rulings; and (4) § 302 reexamination requires “a substantial new question of patentability” and reexamination is mandatory when such a question is found, unlike the standard for “institution.”

The new AIA system was designed to improve upon the § 302 reexamination procedure. *See* 157 Cong. Rec. S952 (Feb. 28, 2011) (statement of Sen. Grassley on Senate consideration of S.23) (“In addition, the bill would improve the current *inter partes* administrative process for challenging the validity of a patent.”); 157 Cong. Rec. S5370-77 (Sept. 7, 2011) (statement of Sen. Whitehouse on Senate consideration of H.R. 1249) (“Administrative processes that should serve as an alternative to litigation [] have broken down, resulting in further delay, cost, and confusion.”).

### ***35 U.S.C § 316. Conduct of inter partes review***

In promulgating regulations authorizing partial institution, the PTO invoked the authority of Section 6(c) of the AIA, requiring the PTO to “issue regulations to carry out chapter 31 of title 35, United States Code, as amended by subsection (a) of this section.” *See* § 316(a) (“The

Director shall prescribe regulations . . . (2) setting forth the standards for the showing of sufficient grounds to institute a review under section 314(a); . . . (4) establishing and governing inter partes review under this chapter and the relationship of such review to other proceedings under this title”). 77 Fed. Reg. 7058.

This authority does not include authorization to depart from the statute. *See Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 213–14 (1976) (“The rulemaking power granted to an administrative agency charged with the administration of a federal statute is not the power to make law. Rather, it is the power to adopt regulations to carry into effect the will of Congress as expressed by the statute.”); *see also* H.R. REP. NO. 110-314, at 45 (2007) (“Where Congress has seen fit to provide specific limitations or conditions in statute, the USPTO may not surpass or take away these limitations or conditions by promulgated rule.”).

The PTO improperly adopted a system of partial institution and partial final written decision, contravening the statute and the intent of Congress. The PTO has exceeded its statutory authority. It befalls this court to “add force and life to the cure and remedy, according to the true intent of the makers of the act.” *Heydon’s Case*, 76 Eng. Rep. 637, 638 (1584).

### **35 U.S.C § 318. Decision of the PTAB**

Section 318 requires the Board to address all of the challenged claims and to issue a final written decision. The statute provides:

§ 318(a). If an inter partes review is instituted and not dismissed under this chapter, the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d).

The statute is clear: the Board's final written decision must include "the patentability of any patent claim challenged by the petitioner and any new claim added under section 316(d)." *Id.* And when a petition is instituted, all of the challenged claims must be included in the final written decision. *Id.*

The totality of provisions and history of the America Invents Act demonstrates that the PTO has erroneously adopted a system of partial review and partial decision that was not contemplated, not intended, not discussed, and indeed not suspected by Congress and the communities concerned with patent legislation.

#### CONCLUSION

The panel majority reinforces the erroneous PTO regulations and practices that contravene the statute. I respectfully dissent from Part III of the court's opinion.