United States Court of Appeals for the Federal Circuit

ELCOMMERCE.COM, INC.,
Plaintiff-Appellant,

v.

SAP AG AND SAP AMERICA, INC.,
Defendants-Appellees.

2011-1369

Appeal from the United States District Court for the Eastern District of Pennsylvania in No. 09-CV-4458, Judge Jan E. Dubois.

Decided: February 24, 2014

CHRISTOPHER R. BENSON, Fulbright & Jaworski, L.L.P., of Austin, Texas, argued for plaintiff-appellant. With him on the brief were SHEILA KADURA, of Austin, Texas, and JONATHAN S. FRANKLIN, of Washington, DC.

MICHAEL A. MORIN, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, of Washington, DC, argued for defendants-appellees. With him on the brief were J. MICHAEL JAKES, NAVEEN MODI, and LUKE J. MCCAMMON, of Washington, DC; and JOSEPH E. PALYS, of Reston,

Virginia. Of counsel on the brief was SAMIR N. PANDYA, SAP America, Inc., of Newtown Square, Pennsylvania.

Before NEWMAN, PLAGER, and WALLACH, *Circuit Judges*.

Opinion for the court filed by NEWMAN, *Circuit Judge*.

Dissenting in part opinion filed by WALLACH, *Circuit Judge*.

NEWMAN, *Circuit Judge*.

Elcommerce.com, Inc. is the owner of United States Patent No. 6,947,903 ("the '903 patent"), directed to a system and method of monitoring a supply chain of components in order to coordinate and stabilize the supply of components from various producers. Elcommerce brought suit in the United States District Court for the Eastern District of Texas, charging SAP AG and SAP America, Inc. (collectively "SAP") with patent infringement. SAP filed a declaratory judgment counterclaim that the '903 patent is invalid, unenforceable, and not infringed. On SAP's motion, the district court transferred the case to the United States District Court for the Eastern District of Pennsylvania. Elcommerce objected to the transfer on jurisdictional and venue grounds, and on this appeal elcommerce requests that the Pennsylvania court's judgment be voided and the case returned to Texas for trial.

The Pennsylvania district court construed the claims of the '903 patent, and on this claim construction the court entered summary judgment that the asserted system claims 22–30, 32, 33 and 37 are invalid for indefiniteness under 35 U.S.C. §112 ¶2, based on failure to comply with the requirements of §112 ¶6. The parties stipulated that the district court's claim construction precludes finding that SAP infringes any of the asserted method claims 1, 3, 4, 12, 13, 17–21, 38, 43, 44, 47, 50, 53, or 54. Final judgment was entered of invalidity of the

system claims and non-infringement of the method claims.[1]

On appeal by elcommerce, we affirm the district court's construction of the '903 patent's claim terms "independent supply chain sites," "scanning for," "detecting," and "monitoring for changed supply-related data information." On this ground, the parties' stipulation of non-infringement of the method claims is affirmed.

For the system claims the ruling of invalidity is vacated, for the summary judgment was based on an incorrect evidentiary premise. SAP had incorrectly informed the district court that Federal Circuit precedent makes unnecessary consideration of evidence of the knowledge and understanding of the relevant technology by persons of skill in the field of the invention. Thus SAP declined to provide evidence of how such persons would view the description of "structure, materials, or acts" in the specification for performance of the several functions claimed in the form authorized by 35 U.S.C. §112 ¶6. On this absence of evidence, the district court held that every claimed function was devoid of support, and therefore that every system claim is invalid on the ground of indefiniteness. Because invalidity must be proven by clear and convincing evidence, we vacate the court's rulings with respect to the system claims, and remand for determination of validity on an appropriate evidentiary record and standard.

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[1] *elcommerce.com, Inc. v. SAP AG*, No. 09-4458, 2011 WL 710487 (E.D. Pa. March 1, 2011) (herein "Op.").

I

JURISDICTION AND VENUE

Soon after the filing of suit by elcommerce in the Eastern District of Texas, SAP moved under 28 U.S.C. §1404(a) for transfer to the Eastern District of Pennsylvania, on SAP's statement that Pennsylvania is the headquarters location of SAP America and the location of its witnesses and documents. Elcommerce objected to the transfer, stating that it is the plaintiff's prerogative to choose the forum, that §1404(a) favors keeping the action in Texas, that personal jurisdiction over SAP exists in Texas based on SAP's commercial activities in Texas, and that the Eastern District of Pennsylvania lacks personal jurisdiction over elcommerce. The Texas district court granted the transfer.[2]

On arrival in the Eastern District of Pennsylvania, elcommerce again disputed the Pennsylvania court's personal jurisdiction over it, and requested transfer back to Texas. The Pennsylvania court denied the request,[3] stating that "[u]nder law-of-the-case principles, if the transferee court can find the transfer decision plausible, its jurisdictional inquiry is at an end," quoting *Christianson v. Colt Industries Operating Corp.*, 486 U.S. 800, 819 (1988).

Elcommerce appeals the transfer, on the grounds that it is the defendant to SAP's declaratory judgment counterclaims that were filed in Texas and included in the transfer to Pennsylvania, and that judgment cannot be

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[2] *elcommerce.com, Inc. v. SAP AG*, No. 07-383 (E.D. Tex. Sept. 29, 2009) (granting transfer to Pennsylvania).

[3] *elcommerce.com, Inc. v. SAP AG*, No. 09-4458, slip op. at 2 (E.D. Pa. Dec. 14, 2009) (denying return to Texas).

entered against a defendant or its property over which the court does not have personal jurisdiction. Elcommerce states that it does not have minimum contacts with the Eastern District of Pennsylvania or with the state of Pennsylvania, and that minimum contacts are required for personal jurisdiction. Elcommerce cites *International Shoe Co. v. Washington*, 326 U.S. 310 (1945), where the Court explained that "due process requires only that in order to subject a defendant to a judgment in personam, if he be not present within the territory of the forum, he have certain minimum contacts with it such that the maintenance of the suit does not offend 'traditional notions of fair play and substantial justice.'" *Id.* at 316 (quoting *Milliken v. Meyer*, 311 U.S. 457, 463 (1940)). Thus elcommerce argues that the judgment invalidating its patents via declaratory judgment counterclaim could not properly be decided in Pennsylvania.

Elcommerce also stresses that as plaintiff it is entitled to its choice of forum, and states that Federal Circuit precedent in similar circumstances is explicitly contrary to the transfer. Thus elcommerce states that the Eastern District of Pennsylvania lacked jurisdiction to enter a binding judgment in this suit, and asks that the Pennsylvania judgment be vacated and the case returned to Texas for trial.

A

SAP proposes first that this court need not be concerned with the question of personal jurisdiction over elcommerce in Pennsylvania, offering the theory that any transfer error is harmless because the dispositive issues on this appeal—claim construction and validity under §112—are questions of law that the Federal Circuit decides *de novo*. SAP states that it is irrelevant whether the appealed decision was rendered by a district court in Texas or in Pennsylvania, because on appeal the Federal

Circuit decides these questions for itself, with no deference to the district court's rulings.

It is axiomatic that jurisdiction must be present in every tribunal, whether the issue is one of fact or law, and whatever the standard of appellate review. " 'Without jurisdiction the court cannot proceed at all in any cause'; it may not assume jurisdiction for the purpose of deciding the merits of the case." *Sinochem Int'l Co. v. Malaysia Int'l Shipping Corp.*, 549 U.S. 422, 431 (2007) (quoting *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 94 (1998)). If jurisdiction is absent in the district court its decision is void, for "[t]he requirement that jurisdiction be established as a threshold matter springs from the nature and limits of the judicial power of the United States and is inflexible and without exception." *Steel Co.*, 523 U.S. at 94–95.

A void decision cannot receive appellate review, even when review is by *de novo* determination. There must be jurisdiction in the district court to reach an appealable judgment; SAP's proposition of harmless error is meritless.

B

The transfer to Pennsylvania was founded on the statutory authorization of transfer of civil actions between federal district courts, on specified conditions:

> For the convenience of parties and witnesses, in the interest of justice, a district court may transfer any civil action to any other district or division where it might have been brought.

28 U.S.C. §1404(a) (1996). Absent consent, the transferee forum must be a court in which the action "might have been brought." *Hoffmann v. Blaski*, 363 U.S. 335, 343–44 (1960). Elcommerce agrees that it could have sued SAP in

the Eastern District of Pennsylvania, but stresses that SAP could not have brought a declaratory judgment action against elcommerce in Pennsylvania.

Elcommerce states that the Pennsylvania judge erroneously concluded that because elcommerce was the plaintiff in the Texas action, personal jurisdiction over elcommerce in Pennsylvania is unnecessary in an action transferred under §1404(a). Elcommerce recognizes that as plaintiff in Texas it was subject to the Texas court's jurisdiction over any relevant counterclaims filed by the defendant, but argues that its voluntary submission to the jurisdiction of the Texas court does not carry over to an involuntary transfer to a different venue. *See Lindahl v. Office of Pers. Mgmt.*, 470 U.S. 768, 793 n.30 (1985) ("venue considerations come into play only after jurisdiction has been established").

Elcommerce stresses that SAP's response to the Texas complaint included declaratory judgment counterclaims, and argues that personal jurisdiction in Pennsylvania was improper because a declaratory judgment action could not have been brought against elcommerce in Pennsylvania. Elcommerce states that without personal jurisdiction a court cannot enter a binding judgment against a defendant, and that it is the defendant to SAP's declaratory judgment counterclaims. Thus elcommerce states that the Pennsylvania court did not have jurisdiction to render the decision here on appeal.

Elcommerce argues that due process principles support its position, citing *Burger King Corp. v. Rudzewicz*, 471 U.S. 462, 471–72 (1985) ("The Due Process Clause protects an individual's liberty interest in not being subject to the binding judgment of a forum with which he has established no meaningful 'contacts, ties, or relations.'") (quoting *International Shoe*, 326 U.S. at 319). Elcommerce states that the Pennsylvania court did not

have personal jurisdiction over elcommerce for resolution of the declaratory action, and could not declare the elcommerce patents invalid.

Elcommerce states that the entirety of the Texas action including the declaratory counterclaims could not have been transferred to Pennsylvania, and that since it is generally improper to transfer only part of a pending case, the entire transfer and the decision thereof are void. Elcommerce states that in *Hildebrand v. Steck Manufacturing Co., Inc.*, 279 F.3d 1351 (Fed. Cir. 2002) this court's holding involving claims and counterclaims supports the elcommerce position. SAP responds that *Hildebrand* is adequately distinguished on its facts.

In *Hildebrand* this court held that there was not personal jurisdiction over the defendant patentee in a declaratory judgment action filed by the purported infringer. Jurisdiction in that venue was not cured when the patentee later filed suit as plaintiff on the same patent in a different venue. Steck Manufacturing had filed a declaratory action against the patentee Hildebrand in the Southern District of Ohio, requesting declarations of noninfringement, patent invalidity, and tortious interference with contract. Nine days later Hildebrand filed an infringement suit against Steck in the District of Colorado. The Colorado court granted Steck's motion to transfer the infringement suit to Ohio, citing the "first-filed" rule. Hildebrand refused to participate in Ohio, stating that the Ohio court lacked personal jurisdiction over it. The Ohio court then entered a default judgment against Hildebrand.

On appeal to the Federal Circuit, Hildebrand argued that his suit as plaintiff in Colorado on the same subject matter did not impart or concede personal jurisdiction over Hildebrand as defendant in the previously filed Ohio action. This court agreed, held that the Ohio court lacked

personal jurisdiction over Hildebrand, and vacated the Ohio judgment. The court reasoned that Hildebrand could not be sued as defendant in Ohio because he had no minimum contacts with Ohio, and that Hildebrand's subsequent suit as plaintiff in Colorado "do[es] not create a constitutionally adequate basis for personal jurisdiction" in Ohio. *Id.* at 1356. This court held that the Colorado court's transfer to Ohio of the action filed by Hildebrand in Colorado did not cure the absence of personal jurisdiction over Hildebrand in Ohio.

Elcommerce argues that the jurisdictional posture in this case is analogous, and that *Hildebrand* established that it is improper to transfer an action from a forum that has voluntary personal jurisdiction over the plaintiff, to a forum that does not have either voluntary or actual personal jurisdiction when the plaintiff is a counterclaim defendant. Elcommerce states that *Hildebrand* requires that this court return the entire action to Texas, where the district court has jurisdiction of the claims and counterclaims filed by both sides.

We conclude that *Hildebrand* supports the rulings of the Texas and Pennsylvania district courts. Jurisdiction is determined at the time the complaint is filed. In *Hildebrand* there was not personal jurisdiction over Hildebrand as defendant in the first-filed action in Ohio, and this flaw was not cured by transfer to Ohio of Hildebrand's later-filed Colorado suit. Here, in the first-filed Texas case there was personal jurisdiction over both the plaintiff elcommerce and the defendant SAP, and elcommerce as plaintiff was subject to the declaratory counterclaims filed by SAP in Texas. This jurisdiction was preserved when the entire action was transferred to Pennsylvania under §1404(a).

Precedent supports the position that personal jurisdiction over the plaintiff, in the forum in which the plain-

tiff filed suit, is not lost when the entire case is transferred to a forum in which the plaintiff could have sued this defendant. In *In re Genentech*, 566 F.3d 1338 (Fed. Cir. 2009) this court applied this principle to a foreign plaintiff and explained that "[t]here is no requirement under §1404(a) that a transferee court have jurisdiction over the plaintiff or that there be sufficient minimum contacts with the plaintiff; there is only a requirement that the transferee court have jurisdiction over the defendants in the transferred complaint." *Id.* at 1346.

In *Genentech* the patentee Sanofi, a company of Germany, filed suit against Genentech in a Texas district court. Genentech requested that the suit be transferred to the Northern District of California. Sanofi argued that as plaintiff it had the right to choose the forum, that personal jurisdiction over Genentech in the Texas court was not disputed, and that the California court would be obliged to waste judicial resources to determine if it possessed personal jurisdiction over the German plaintiff. Genentech in turn argued the convenience to it and its witnesses of the California venue. The Texas district court granted the transfer and this court affirmed, observing that California is "the clearly more convenient venue." *Id.* at 1348.

Both *Hildebrand* and *Genentech* support the district courts' rulings on the transfer from Texas to Pennsylvania, for the transfer is apt on venue considerations, and the Pennsylvania court possesses jurisdiction to decide the issues raised by the complaint, including the defenses and declaratory counterclaims. We discern no abuse of discretionary authority in the transfer.

II

THE METHOD CLAIMS

The district court construed various terms in the method and system claims. The parties stipulated that on the district court's claim construction SAP does not infringe any of the asserted method claims.

The '903 patent's method claims set forth steps in monitoring a supply chain of components used in manufacture. The monitoring is for the purpose of facilitating and coordinating the supply of components provided by separate entities. The '903 patent explains that supply problems arise in various ways, such as when entities in the chain maintain their supply-related data in different or uncoordinated formats, and are not readily informed of changes in utilization or need.

The '903 patent includes claims to a method that collects information from each supply site, places the information in a common format, makes the coordinated supply information available to the entities in the supply chain, and detects and alerts the entities to any supply problem. Claim 1 outlines the steps of the method as follows, with the claim construction terms on appeal shown in boldface:

> 1. A method of monitoring supply chain activity, comprising:
>
> **scanning for** changed supply-related data at **independent supply chain sites** within the supply chain;
>
> extracting the supply-related data at the independent supply chain, the data being maintained in plural formats at the supply chain sites, where **each** of the supply chain sites represents an independent entity in the supply chain;

translating the extracted data into a common format;

uploading the extracted data from **each** supply chain site to a data collection site, the data collection site collecting the extracted data; and

upon a request from a user associated with one of the supply chain sites, formatting, at the data collection site, a portion of the collected data, retrieved from one of the supply chain sites other than the site of the user, into one of a plurality of views, responsive to criteria selected by the user, for presentation to the user, the portion of formatted data being dependent on access rights granted to the user's supply chain site, and publishing the formatted data view to the user's supply chain site;

at the data collection site, **monitoring** inbound data from multiple supply chain sites;

detecting a problem condition if there is a surplus or shortage in the collected data retrieved from at least one of the supply chain sites other than the site of the user; and

responding to the problem condition by asserting an alert to the user, where the alert indicates a problem condition associated with at least one of the supply chain sites other than the site of the user.

The district court conducted a *Markman* hearing, and construed various claim terms in a manner whereby, the parties stipulated, method claims 1, 3, 4, 12, 13, 17–21, 38, 43, 44, 47, 50, 53, and 54 do not cover SAP's activities, thus negating infringement of these claims. Elcommerce appeals the construction of the following terms:

"Independent supply chain sites"

The district court construed "independent supply chain sites" to mean "a supply chain entity that is not subject to the control or authority of, and is unrelated to, each other supply chain entity." Op. at 8. The court observed that elcommerce invoked this construction of the term "independent" in reexamination proceedings at the PTO to distinguish the '903 patent from prior art systems where the "data warehouses are for companies that are related to each other." Op. at 7. Thus the court ruled that "'independent sites' must be unrelated and not subject to another's control," reasoning that "otherwise getting each site to coordinate its 'business method and database' with those of the other sites would not present a challenge requiring use of the invention." Op. at 6.

Elcommerce argues that the term "independent supply chain sites" requires only that each supply chain site is separate, and that the sites need not be totally independent of each other. Elcommerce states that the plain meaning of this term is sufficient and that no construction is necessary, or, in the alternative, that the term means "a separate entity within the supply chain." If the sites are separate but not totally independent, elcommerce argues that SAP's practices are covered by this term.

Elcommerce states that the district court gave this term an inappropriately narrow construction, by incorporating the concepts of "control or authority" and "unrelated" into the meaning of "independent." Elcommerce argues that these concepts are not stated in the specification or prosecution history, and that the district court erred when it reasoned that the site entities must not be under the same "control or authority" in order to be independent. Elcommerce argues that the specification shows that "independent" simply refers to separate entities in a supply chain, and that it is irrelevant whether

there is common control of more than one site. Elcommerce points to the Summary of the Invention, which states that "[s]upply chain sites can include any or all of contract managers (CMs), vendors, distributors and an original equipment manufacturer (OEM)." '903 patent, col.3, ll.25–27. Thus elcommerce argues that the specification requires only that the supply chain sites are "separate," not that they are unrelated.

Elcommerce points out that "independent" was added to the '903 claims in order to distinguish the Huang reference, which shows an internal/single-entity supply chain. Elcommerce argues that "as long as the supplier is a separate entity—regardless of whether it is or is not subject to the control or authority of another supply chain site—the distinction drawn between the '903 patent and Huang is satisfied." Elcommerce Br. 56. Elcommerce cites *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325–26 (Fed. Cir. 2003) for the proposition that prosecution disclaimer requires that the alleged disavowal is both clear and unmistakable, and argues that the district court's reliance on prosecution argument to support the court's requirement that the supply chain sites are "unrelated" to each other, goes beyond the distinction from the Huang reference that was made during prosecution.

We conclude that the district court correctly construed "independent supply chain sites" as requiring unrelated sites. This construction is consistent with the specification and the prosecution history, where elcommerce distinguished the Huang reference by stating: "With prior systems, independent entities are not able to easily and quickly share information with each other. Typically, their data is proprietary, and independent entities, such as corporations, do not want to share their proprietary information with each other." Letter, U.S. Patent App.

09/546,347 at 17, July 27, 2004. The specification states that the invention overcomes problems encountered with independent manufacturers and vendors having distinct business methods and databases, by providing a system and method that receive data from independent sources and place the data in a common format.

The district court's ruling that the entities in the supply chain must be unrelated and not merely separate is the most reasonable reading of the claims in light of the specification and the prosecution history. *See Renishaw PLC v. Marposs Società per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim."). The district court's construction of "independent supply chain sites," as requiring unrelated supply sites is affirmed.

"Monitoring," "scanning," and "detecting" at "each" independent supply chain site

The district court construed the terms "monitoring," "scanning," and "detecting" as requiring that these functions must be performed at "each" independent supply chain site. Elcommerce argues that this construction unduly restricts the fair scope of these terms in the broader claims such as method claim 1 and system claim 37, for other claims recite specifically the location of the detecting or monitoring activity. For example, claim 50 recites "[a] method of monitoring, at a data collection center, . . . the method comprising: scanning for changed supply-related information at independent supply chain sites." Elcommerce argues that because claim 50 explicitly states that the scanning is performed at a data collection center, the district court's construction that all of the claims require that the scanning is performed at each independent supply chain site must be wrong.

Elcommerce points out that the '903 patent specifies the location, when a claimed step takes place at a specific location. For example, claim 37 states that the "means for extracting" is located "at each supply chain site," the "means for formatting" is located "at the data collection site," and the "means for monitoring" is located "at the data collection site." Elcommerce thus argues that the absence of specific locations in other claims means that those claims are not similarly restricted, and that the district court's narrow construction of these terms for all claims cannot be correct.

SAP responds that the district court's claim construction is required by the specification and prosecution history. Claim 1 states "scanning for changed supply-related data at independent supply chain sites within the supply chain"; claim 22 states "a plurality of independent supply chain sites . . . , each supply chain site . . . comprising: a data transfer engine (DTE) which detects changed supply-related data"; claim 37 states a "means for monitoring changed supply-related data at independent supply chain sites within the supply chain"; claim 38 states "installing a data transfer engine (DTE) in the first supply chain site . . . , in response to detecting changes in the respective proprietary information at the first supply chain site"; claim 50 states "scanning for changed supply-related information at independent supply chain sites within the supply chain"; claim 53 states "at each supply chain site: . . . upon a triggering event in response to detecting changes, forwarding . . ."; claim 54 states "at the supply chain sites, monitoring the proprietary information to detect any changes." Thus SAP argues, and the district court held, that all of the claims, broad and narrow, require detecting and monitoring at each supply chain site.

The '903 specification is in accord with the district court's construction. The Summary of the Invention states that a "data transfer engine" is installed at each site:

> The present invention eliminates much of the confusion which results from redesigning one or more complex legacy systems. Instead, legacy systems are left intact, and a data transfer engine ('DTE') is installed at each site. The DTE monitors the local system continuously, and takes whatever information is available.

'903 patent, col.1, ll.61–66. The district court found that "[t]he Summary of the Invention, which addresses the patent as a whole, makes clear that these functions take place at each independent supply chain site." Op. at 12.

We affirm the district court's conclusion that the scanning, detecting, and monitoring are performed at each supply chain site, and affirm the court's construction of "independent supply chain sites," "scanning for," "detecting," and "monitoring" for changed supply-related information. On the district court's claim construction, the parties stipulated that SAP does not infringe method claims 1, 3, 4, 12, 13, 17–21, 38, 43, 44, 47, 50, 53, or 54 of the '903 patent. The judgment of non-infringement of these claims is affirmed.

III

THE SYSTEM CLAIMS

The district court held system claims 22–30, 32, 33 and 37 invalid for failure to comply with 35 U.S.C. §112 ¶2 and ¶6:

> §112 ¶2. The specification shall conclude with one or more claims particularly pointing out and dis-

> tinctly claiming the subject matter which the applicant regards as his invention.
>
> §112 ¶6. An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The district court held that all of the "means" terms in the system claims are inadequately supported by structure in the specification as required by §112 ¶6, and thus that the system claims are invalid for indefiniteness under §112 ¶2.[4] Claim 37 is representative of the system claims, all of which employ the means-plus-function form authorized by §112 ¶6:

> 37. A system for monitoring supply chain activity comprising a plurality of supply chain sites, comprising:
>
> means for monitoring changed supply-related data at independent supply chain sites within the supply chain;
>
> means for extracting, at each supply chain site, the supply-related data to be monitored, wherein the data is maintained in plural formats located among the supply chain sites, at least one of the supply chain sites corresponding to an in-

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[4] Paragraphs 2 and 6 of 35 U.S.C. §112 were replaced with newly designated §§112(b) and 112(f) respectively when §4(c) of the Leahy-Smith American Invents Act ("AIA"), Pub. L. No. 112–29, took effect on September 16, 2012. Because this case was filed before that date, we will refer to the pre-AIA version of §112.

dependent entity in the supply chain, being independent of another supply chain site;

means for translating the data to a common format;

means for uploading and collecting, from each supply chain site, the extracted data to a data collection site;

means for formatting, at the data collection site, a portion of the collected data, retrieved from at least one of the supply chain sites other than the site of the user, into one of a plurality of views, responsive to criteria selected by a user associated with a supply chain site, for presentation to the user, the portion of formatted data being dependent on access rights granted to the user's supply chain site;

means for publishing the formatted data view to the user's supply chain site;

means for monitoring, at the data collection site, inbound data from multiple supply chain sites;

means for detecting a problem condition if there is a supply chain surplus or shortage detected in the collected data retrieved from at least one of the supply chain sites other than the site of the user; and

means for responding to the problem condition by asserting an alert, where the alert indicates a problem condition associated with at least one of the supply chain sites other than the site of the user.

Other claims contain additional functional terms claimed as "means." Elcommerce argues that the district court erred in its interpretation and application of section 112, and that the criteria for §112 ¶6 and ¶2 are met. In *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d

1374, 1382 (Fed. Cir. 1999) the court explained that "[a]ll one needs to do in order to obtain the benefit of that claiming device [§112 ¶6] is to recite some structure corresponding to the means in the specification, as the statute states, so that one can readily ascertain what the claim means and comply with the particularity requirement of ¶2."

Precedent elaborates that "[u]nder 35 U.S.C. § 112 ¶2 and ¶6, therefore, 'a means-plus-function clause is indefinite if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim.'" *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1312 (Fed. Cir. 2012) (quoting *AllVoice Computing PLC v. Nuance Commc'ns, Inc.*, 504 F.3d 1236, 1241 (Fed. Cir. 2007)). "The amount of detail that must be included in the specification depends on the subject matter that is described and its role in the invention as a whole, in view of the existing knowledge in the field of the invention." *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385 (Fed. Cir. 2011). Elcommerce stresses the continuing references to "the existing knowledge in the field of the invention" and "the person of ordinary skill" as the foundation for such determinations.

SAP argued at the *Markman* hearing that the means-plus-function terms in the '903 patent do not have supporting "structure or acts" in the specification, and argued that since such support is absent, SAP could satisfy its burden on indefiniteness without expert testimony or other evidence of the existing knowledge in the field of the invention. SAP urged that Federal Circuit precedent does "not require" such evidence, citing the statement in *Default Proof Credit Card System, Inc. v. Home Depot U.S.A, Inc.*, 412 F.3d 1291, 1302 (Fed. Cir. 2005), that "the

testimony of one of skill in the art cannot supplant the total absence of structure from the specification."

Elcommerce in turn argued that determination of the adequacy of the supporting structure or acts is made from the viewpoint of persons of skill in the field of the invention, and that evidence of how such persons would view the description should be presented to the court. Elcommerce pointed to the extensive precedent in which the knowledge of persons skilled in the field was considered. In *Telcordia Technologies, Inc. v. Cisco Systems, Inc.*, 612 F.3d 1365, 1377 (Fed. Cir. 2010) the court referred to expert testimony that an "ordinary artisan would have recognized the controller as an electronic device with a known structure." In *Technology Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338–39 (Fed. Cir. 2008) the court referred to expert testimony that "technology to perform the claimed function was available at the relevant time and would have been known to a person skilled in the art." *See also Typhoon Touch*, 659 F.3d at 1385 ("The defendants have directed us to no evidence that a programmer of ordinary skill in the field would not understand how to implement this function.").

During the *Markman* hearing the district court persistently asked for such evidence:

> THE COURT: Well, what evidence is there of what a person of ordinary skill in the art would understand the structure as defined in the patent to be, what evidence is there of that?
>
> SAP: Your Honor, we haven't submitted a declaration or separate evidence from somebody of ordinary skill in the art who says, I read the patent and I don't see any structure. We're actually not required to do that and, under the case law, the Federal Circuit's case law, as well as other cases

> interpreting it, that's not a requirement. We can simply point to the absence of structure and, if it's not there, it's not there.

Transcript of *Markman* Hearing at 214, *elcommerce.com, Inc. v. SAP AG*, 2011 WL 710487 (E.D. Pa. March 1, 2011) (No. 61).

SAP persisted in the position that Federal Circuit precedent does "not require" evidence of how a person of ordinary skill would understand the patent. The record shows the judge's concern with this decisional approach to complex technology:

> THE COURT: How am I to determine what one of ordinary skill in the art would think?
>
> SAP: Well, your Honor, that's what I'm here to do is to try to convince you that all those things Mr. Benson pointed to, it's not structure. He's simply pointing to phrases in the patent that repeat the function and simply repeating the function and drawing a box around it doesn't convert it into structure.

Markman Tr., at 215.

This inquiry by the court continued throughout the *Markman* hearing. SAP presented only attorney argument concerning the structure and acts set forth in the patent, and elcommerce stressed that SAP bears the burden of proving invalidity of duly granted claims:

> ELCOMMERCE: So, when SAP comes up here, they have to show you that one of ordinary skill in the art would not understand things like the DTE or the DCS or whatever structure we point to, would not be understood by one of ordinary skill in the art to perform the particular function. And they have presented zero evidence about how one

> of ordinary skill in the art would view what we've shown.
>
> ….
>
> THE COURT: But, how do I determine what is understood by one skilled in the art?
>
> ELCOMMERCE: You'd probably have to get somebody up in the box, that's the witness box, raise their right hand and testify one way or another. That's probably, that's the only way that I know of doing this. To come in and just have a lawyer argue it, is not enough. This is to be determined in view of one of ordinary skill in the art. They have not submitted any declarations of any experts. They haven't submitted declarations of one of ordinary skill in the art.

Markman Tr., at 187–89.

Elcommerce pointed out to the court that during the examination and two reexaminations of the '903 patent, no issue was raised by the PTO, as the expert agency, as to whether the specification met the requirements of section 112. The PTO examination guidelines instruct that the analysis for §112 ¶6 is made from the viewpoint of "those skilled in the art"; the Manual of Patent Examining Procedure states:

> The disclosure of the structure (or material or acts) may be implicit or inherent in the specification if it would have been clear to those skilled in the art what structure (or material or acts) corresponds to the means (or step)-plus-function claim limitation.

MPEP §2181(II)(A) (8th ed. 2001).

In *Atmel Corp.*, 198 F.3d at 1382, the court explained that section 112 does not require the drafter "to encumber the specification" with information known to a person of skill in the field of the invention; nor does section 112 require that the specification reproduce information routinely possessed by persons in the field of the invention. *See Creo Prods., Inc. v. Presstek, Inc.*, 305 F.3d 1337, 1347 (Fed. Cir. 2002) ("To the extent that [Appellant] contends that additional structure is required for completely performing the function of 'rotating each cylinder,' we consider such structure to be implicit in the disclosure of the '368 patent.").

This court has "noted that 'typically' expert testimony will be necessary in cases involving complex technology." *Centricut, LLC v. Esab Grp., Inc.*, 390 F.3d 1361, 1370 (Fed. Cir. 2004) (quoting *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1315 (Fed. Cir. 2002)). However, SAP apparently persuaded the district court (and our colleague in dissent) that no evidence of the understanding and knowledge of persons of skill in the field need be presented or indeed would be useful even if the trial court thought otherwise.

Having been led into error, the district court further erred by ignoring the protocols of claims for computer-implemented systems set forth in *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (the patent may describe the system "in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure"). This led the district court to overlook or reject elcommerce's standard use of prose, diagrams, and flow charts.

The court explained in *Finisar* that the patent must describe sufficient structure or acts whereby a person of ordinary skill in the field could perform the specified

function without undue experimentation. *Id.* The court explained that the patent need not include information and knowledge possessed by persons of ordinary skill in the field of the invention, *id.*, and that when the structure or acts that perform the function "would be 'well within the skill of persons of ordinary skill in the art,' such functional-type block diagrams may be acceptable and, in fact, preferable if they serve in conjunction with the rest of the specification to enable a person skilled in the art to make such a selection and practice the claimed invention with only a reasonable degree of routine experimentation." *In re Ghiron*, 442 F.2d 985, 991 (CCPA 1971). However, despite page-after-page of text and flow-charts and block diagrams illustrating supporting structure, the district court invalidated all of the claims that were written in terms of §112 ¶6.

Elcommerce points to the lengthy description of performance of the functions of the elcommerce system. The '903 patent provides over eight columns of "Detailed Description of the Invention," with frequent references to the twenty-four pages of graphs and diagrams. For example, for the term "means for monitoring changed supply-related data at independent supply chain sites within the supply chain," elcommerce points to the description of the data transfer engine, such as: the DTE "monitors the local system continuously, and takes whatever information is available," '903 patent, col.1, ll.64–66; "[i]n one embodiment, the DTE looks for changes to data and uploads new data to the data collection site . . . upon finding a change," *id.* at col.5, ll.62–64; "[t]he DTE takes data in any size or format, including various databases 24 and/or spreadsheets 22 [numbers from the flowcharts] and/or text files such as ASCII files, and corrects, translates and formats the data into 'clean' data," *id.* at col.5, ll.59–64; "[t]his process . . . can be performed regularly, upon the expiration of the predetermined time period or,

for example, when a change in the data is detected at the supply chain site," *id*. at col.6, ll.44–48; and intervening text. Elcommerce states, and SAP does not dispute, that these acts described in the specification would be understood and do not require undue experimentation.

As another example, for the claim term "means for formatting," the specification states that "[a] publisher 36 receives query requests form the various sites 19" and "formats and publishes the relevant supply-chain data to the requesting site," *id*. at col.6, ll.18–23, and describes several ways by which the publisher performs this function, *e.g.,* '903 patent, col.3, ll.35–39 ("An analysis report is generated responsive to report selection by a user. The generated report is provided, responsive to user selection of report destinations, by emailing, printing, storing as a file or displaying on a monitor or a screen, the report."); *id*. at col.10, ll.59–67 ("A selected report can be sent to the screen, to a printer, to a file, or to a person via email, by selecting the respective button 272, 274, 280, 286." (referring to the flowchart)). The patent explains that the formatting depends on the selection of the user, *e.g.,* '903 patent at col.3, ll.40–42 ("Data is displayed in a window at a site's display according to a category selected by a user at the site . . ."). The patent includes specific illustrations of formatting, such as:

> "From page" and "To" fields 276, 278 allow the printing of only selected pages. File Name and File Type fields 284, 288 allow the designated report to be named and saved in a variety of formats. To, cc:, Subject and message fields, 288, 290, 292 and 294 respectively, allow the user to specify recipients of the report, and to add a subject and remarks.

Id. at col.10, ll.59–67. The patent presents screen shots of formatted data in Figures 2–11D; for example, Figure 3A shows:

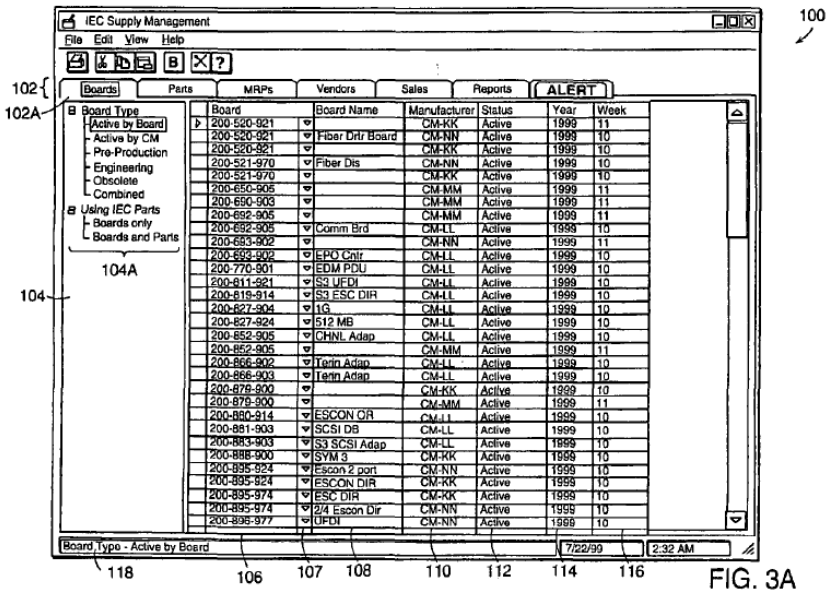

FIG. 3A

Despite this description in the patent, the district court ruled that the patent is "totally silent" as to the disclosure of "structure and acts" in performance of all of the functions.[5]

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[5] Our colleague in dissent argues that these descriptions of structure are not an "algorithm" for the purposes of §112 ¶6. The usage "algorithm" has indeed become patent jargon, but it does not convert the established description requirements into the need for mathematical equations or software programs. The court has reaffirmed that §112 ¶6 can be met by description in the form of "a mathematical formula, in prose, as a flow chart, or in any other manner that provides structure," *Finisar*, 523 F.3d at 1340. The usage "algorithm" does not add a new requirement to description under §112 ¶6. Nor do we

SAP did not present evidence regarding the knowledge of persons of skill in the field of the invention. The district court received no evidence on whether such persons would " 'know and understand what structure corresponds to the means limitation.' " *Finisar,* 523 F.3d at 1340 (quoting *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 949-50 (Fed. Cir. 2007)). However, "[w]hether a patent adequately sets forth structure corresponding to a claimed function necessitates consideration of the disclosure of the specification from the viewpoint of one skilled in the art." *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003). This viewpoint was withheld from the district court.

The burden was on SAP to prove by clear and convincing evidence that a person of ordinary skill in the field of the invention would be unable to recognize supporting structure and acts in the written description and associate it with the corresponding function in the claim. *See TecSec, Inc. v. Int'l Bus. Machs. Corp.*, 731 F.3d 1336, 1349 (Fed. Cir. 2013) ("The party alleging that the specification fails to disclose sufficient corresponding structure must make that showing by clear and convincing evidence."). While "the person of ordinary skill in the art" is a legal construct, like "the reasonable man," and claim construction is ultimately a matter for the judges, it cannot be assumed that judges are persons of ordinary skill in all technological arts.

Nor can it be assumed that, without evidence, a general purpose judge could ascertain the position of persons of skill in the art and conclude that there is not a shred of

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share our colleague's view that this court should perform the analysis, exercising our own expertise, in the absence of evidence and expert guidance.

support for any of the eleven interrelated means-plus-function claim limitations, as argued by SAP. The district court rightly was concerned about what a person of skill in the art might make of the lengthy written description and flow-charts and the multiple claimed functions. The judge repeatedly asked for evidence of what such a person would understand in this particular setting. Instead of evidence, SAP submitted only attorney argument.

The district court accepted SAP's position that no external evidence was "required" and could be relied upon to show how a person of ordinary skill would understand the descriptive text and flowcharts and diagrams in the patent. However, the adequacy of a particular description is a case-specific conclusion, not an all-purpose rule of law. Findings as to what is known, what is understood, and what is sufficient, must be based on evidence.

Without evidence, ordinarily neither the district court nor this court can decide whether, for a specific function, the description in the specification is adequate from the viewpoint of a person of ordinary skill in the field of the invention. We do not of course hold that expert testimony will always be needed for every situation; but we do hold that there is no Federal Circuit or other prohibition on such expertise. *See Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993). The district court persistently asked for evidence and was given none. Without more SAP cannot overcome the presumption of patent validity.

We conclude that the district court erred in granting summary judgment without a proper evidentiary basis for its conclusion. The burden was on SAP to prove its case, and in the absence of evidence provided by technical experts who meet the *Daubert* criteria there is a failure of proof. Attorney argument is not evidence. We vacate the district court's rulings on the system claims, and remand

for application of appropriate evidentiary standards and judicial procedures.

AFFIRMED IN PART, VACATED IN PART, AND REMANDED

Each party shall bear its costs.

United States Court of Appeals for the Federal Circuit

ELCOMMERCE.COM, INC.,
Plaintiff-Appellant,

v.

SAP AG AND SAP AMERICA, INC.,
Defendants-Appellees.

2011-1369

Appeal from the United States District Court for the Eastern District of Pennsylvania in case no. 09-CV-4458, Judge Jan E. Dubois.

WALLACH, *Circuit Judge*, dissenting-in-part.

I join the majority's well-reasoned holdings on jurisdiction, venue, and claim construction. I agree that the Eastern District of Pennsylvania properly exercised jurisdiction over the transferred case and that the district court correctly construed the disputed terms in the method claims.

I depart, however, from the majority's decision to vacate the district court's indefiniteness holdings. In holding that SAP was required to provide expert testimony to prove indefiniteness, the majority contradicts *Noah Systems, Inc. v. Intuit Inc.*, 675 F.3d 1302 (Fed. Cir. 2012), where this court affirmed the exclusion of expert testimony from the indefiniteness inquiry when there was a total

absence of corresponding structure. As in *Noah*, the asserted means-plus-function claims in this case are directed to a special-purpose computer and thus require a corresponding algorithm in the specification. As in *Noah*, no algorithm is disclosed. Such "total absence of structure" renders the claims invalid for indefiniteness, and expert testimony is neither required nor permitted to supply the absent structure. *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1302 (Fed. Cir. 2005).

I.

The system claims at issue contain multiple means-plus-function terms that are implemented in software. Means-plus-function terms are "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof," 35 U.S.C. § 112 ¶ 6, and the absence of adequate corresponding structure renders the claim indefinite under § 112 ¶ 2. In cases such as this one, where the means-plus-function term is implemented in software, the corresponding structure "is the algorithm disclosed in the specification." *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249 (Fed. Cir. 2005).

The issue in this case is whether expert testimony is required to prove indefiniteness of a means-plus-function term when the specification contains no corresponding structure. This court answered "no" in *Noah*, explaining that expert testimony is not required where the specification contains no algorithm corresponding to each recited function. *Noah*, 675 F.3d at 1313, 1318–19. When there *is* an identifiable algorithm, however, expert testimony may be helpful in determining whether the algorithm is adequate corresponding structure in the view of a skilled artisan. *Id.* at 1313.

The district court properly applied this rubric, holding that "elcommerce has failed to describe structure at all," so "there is no need for SAP to introduce evidence, such as expert testimony, about whether one skilled in the art would perceive the description sufficiently definite to satisfy the dictates of 35 U.S.C. § 112 ¶ 6." *elcommerce.com, Inc. v. SAP AG*, No. 09-4458, 2011 WL 710487, at *13 (E.D. Pa. Mar. 1, 2011) ("Claim Construction Op.") (citing *Default Proof*, 412 F.3d at 1302). The majority holds the district court "erred in granting summary judgment without a proper evidentiary basis for its conclusion," Majority Op. at 29, but does not identify the necessary algorithms for each of the recited means-plus-function elements. Nor does it identify *any* factual dispute, instead focusing on "the absence" of expert testimony. *Id.* It is questionable whether the *absence* of evidence can create a disputed question of material fact necessary to deny summary judgment. *See* Fed. R. Civ. P. 56(a). Even more importantly, requiring expert testimony in this case contradicts relevant precedent that prohibits reliance on such testimony when there is a "total absence of structure" from the specification. *Noah*, 675 F.3d at 1313 (the absence of an algorithm results in the "total omission of structure"); *Default Proof*, 412 F.3d at 1302 ("[T]he testimony of one of ordinary skill in the art cannot supplant the total absence of structure from the specification."). Contrary to *Noah*, which determined the absence of an algorithm without expert testimony, the majority states it is not the role of this court to determine the presence or absence of an algorithm without "evidence and expert guidance." Majority Op. at 28 n.5.

There can be no doubt that the absence of expert testimony is the sole basis for the majority's holding. To the extent the majority "hold[s] that there is no Federal Circuit or other prohibition on expertise," *id.* at 29 (citing *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579

(1993)), that proposition is plainly correct, but is not at issue in this case. The district court did not exclude any expert testimony, because *none* was proffered by either party.

Nor does the majority identify algorithms corresponding to each of the claimed functions, so that cannot be the basis for its holding either. It cites generally to "page-after-page of text and flow-charts and block diagrams illustrating supporting structure," *id.* at 25, but considers only two of the eleven means-plus-function terms, *see id.* at 25–27. It completely disregards the remaining seven terms in claim 37, and the term in independent claim 22, on which claims 23–30, 32, and 33 depend. Even one indefinite term renders a claim invalid, and the majority's incomplete analysis necessarily assumes the "total absence of structure" for at least one term in each asserted claim. The majority agrees that expert testimony is not "needed for every situation." *Id.* at 29. Yet if expert testimony is required in this case, where there is a total absence of structure, it is unclear when it would *not* be required.

II.

The district court's predicament on remand shows the difficulty with the majority's holding. Assuming that SAP does not renew its indefiniteness arguments, the district court will have to construe the claims as coterminous with the claimed functions, because the specification discloses no algorithms to which the functions can be limited. *See* 35 U.S.C. § 112 ¶ 6. Such "pure functional claiming" is the very practice that § 112 ¶ 6 is designed to prevent. *Noah*, 675 F.3d at 1318 ("This court imposed the algorithm requirement to prevent purely functional claiming when a patentee employs a special purpose computer-implemented means-plus-function limitation."); *Aristocrat Techs. Austl. Pty. Ltd. v. Int'l Game Tech.*, 521 F.3d 1328,

1333 (Fed. Cir. 2008) ("The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the patent claims be limited to that structure and its equivalents is to avoid pure functional claiming."); *Med. Instr. & Diag. Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003) ("If the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid that price but is attempting to claim in functional terms unbounded by any reference to structure in the specification.").

Nor could the district court rely on expert testimony to limit the otherwise boundless functional construction because it would "contradict" the intrinsic record, which contains no such limitations. *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (quoting *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1360 (Fed. Cir. 2004) ("In most cases, the best source for discerning the proper context of claim terms is the patent specification wherein the patent applicant describes the invention." (internal quotation marks omitted)); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008) ("[W]hile helpful, extrinsic sources . . . cannot overcome more persuasive intrinsic evidence.").

Indefiniteness under § 112 ¶ 2 is meant to prevent such boundless claim constructions. *AllVoice Computing PLC v. Nuance Commc'ns, Inc.*, 504 F.3d 1236, 1240 (Fed. Cir. 2007) ("The test for definiteness asks whether one skilled in the art would understand the bounds of the claim when read in light of the specification."). Indeed, indefiniteness is part of claim construction, both of which are questions of law. *Noah*, 675 F.3d at 1311 ("Whether a claim complies with the definiteness requirement of 35

U.S.C. § 112 ¶ 2 is a matter of claim construction . . . ."); *see also Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1348 (Fed. Cir. 2005) ("In the face of an allegation of indefiniteness, general principles of claim construction apply."). Just as there is no requirement for expert testimony when construing means-plus-function claims to cover the corresponding structure, expert testimony is not needed to hold the claims indefinite when no structure is disclosed. *Default Proof*, 412 F.3d at 1302.

The majority nevertheless states that expert testimony is required, because the indefiniteness inquiry must be conducted from the point of view of one skilled in the art. Majority Op. at 28. Without expert testimony, the majority reasons, the district court was unable to discuss the specification's description of structure in light of "the knowledge of persons of skill in the field of the invention." *Id.* That is not, as I understand it, what it means to view claim construction or indefiniteness from the perspective of one of skill in the art. Although both claim construction and indefiniteness are analyzed from the perspective of a skilled artisan, *Finisar*, 523 F.3d at 1328 (citing *Phillips,* 415 F.3d at 1312–13), the "hypothetical person having ordinary skill in the art" is a "legal construct . . . akin to the 'reasonable person' used as a reference in negligence determinations," *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998); *see also Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984) (describing the hypothetical skilled artisan as "an imaginary being possessing 'ordinary skill in the art' created by Congress to provide a *standard of patentability*"). Intrinsic evidence, not extrinsic, is most pertinent to determine how that hypothetical person would view the relevant claim terms. *Phillips*, 415 F.3d at 1317.

While the majority is correct that patentees need not "reproduce" in the specification "information routinely

possessed by persons in the field of the invention," Majority Op. at 24, the obligation to provide adequate corresponding structure for means-plus-function claims is separate from the enablement requirement. "'[A] patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function.'" *Function Media, L.L.C. v. Google Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013) (quoting *Blackboard, Inc. v. Desire2Learn Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009)). To permit such unbounded functional claiming would contravene the purpose of § 112 ¶ 2 by "'allow[ing] the patentee to claim all possible means of achieving a function.'" *Id.* (quoting *Blackboard*, 574 F.3d at 1385).

III.

In holding that there was a "total absence of structure" in the '903 patent, the district court considered each of the eleven means-plus-function elements, including all nine functions in claim 37, and found that none was supported by the requisite algorithm for software-implemented means-plus-function claims. The district court concluded that the Data Transfer Engine ("DTE") and Data Collection Site ("DCS")—which elcommerce argued were corresponding structures—were described solely in functional terms that did no more than restate the claimed functions. Claim Construction Op. at *8 (citing *Blackboard*, 574 F.3d at 1383). On appeal, elcommerce devoted only two pages of its opening brief to identifying purported algorithms for the claimed functions, and neglected to even mention two of the functions recited in claim 37.[1]

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[1] Specifically, elcommerce does not contest that the functions of "detecting" and "responding to" a problem

The district court's indefiniteness holding should be affirmed, because the '903 patent's specification discloses no algorithms corresponding to the eleven means-plus-function terms. The first means-plus-function element of claim 37, for example, recites "means for monitoring changed supply-related data at independent supply chain sites within the supply chain." '903 patent col. 15 ll. 30–31. Elcommerce argues the DTE and the DCS provide adequate structure for this function.

No algorithm is disclosed. The specification states only that "[t]he DTE monitors the local system continuously, and takes whatever information is available," *id.* col. 1 ll. 64–66, and that the DCS is a location where inbound data "is monitored," *id.* col. 3 ll. 7–9. An algorithm must "provid[e] some detail about the means to accomplish the function," *Finisar Corp.*, 523 F.3d at 1340–41, and cannot "'simply describe[ ] the function to be performed,'" *Blackboard*, 574 F.3d at 1384 (quoting *Aristocrat*, 521 F.3d at 1334). In this case, the specification's description of the DTE and the DCS "simply describes the function to be performed": monitoring changed supply-related data. Such language "describes an outcome, not a means for achieving that outcome." *Id.*

The majority cites two other portions of the specification that are meant to support the "monitoring changed supply-related data at independent supply chain sites" function. The first reference states that the DTE "looks for changes to data," '903 patent col. 5 l. 63, but this again restates the claimed function and substitutes "looks for" instead of "monitors." The second reference states that the DTE "uploads new data to the [DCS]," *id.* col. 5 ll. 63–

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condition lack a corresponding algorithm. Surely, this court should at the very least affirm the invalidity of claim 37 on this basis.

64, and "the DTE takes data in any size or format," *id.* col. 5 l. 59. This merely repeats another claimed function in claim 37—"*means for uploading and collecting*, from each supply chain site, the extracted data to a data collection site." *Id.* col. 15 ll. 39–40 (emphasis added). "[D]isclosure as to one function" cannot "fill the gaps in a specification as to a different, albeit related, function." *Noah*, 675 F.3d at 1319.

Nor do the flow charts provide the requisite algorithm. Figure 1E (depicted below), for example, does no more than restate other means-plus-function elements—including "extract[ing] data," "translat[ing] data," "format[ting] data," and "upload[ing] data"—and thus does not provide the requisite algorithm for any one function.

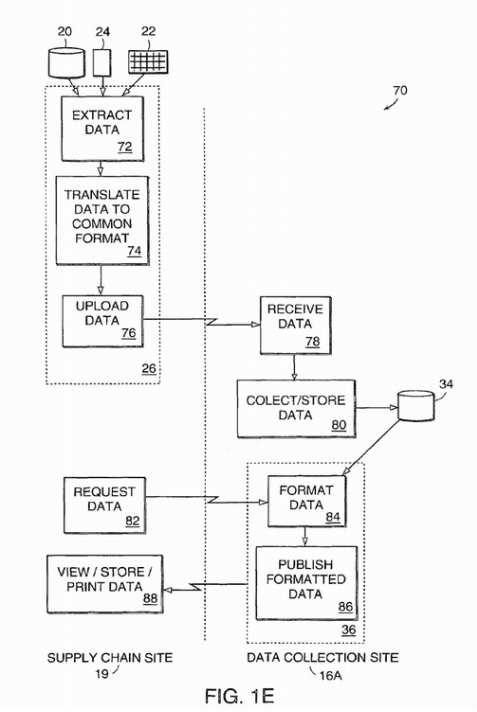

FIG. 1E

The first box in Figure 1E instructs "extract data," which is merely a simplified version of another claimed function—"means for extracting, at each supply chain site, the supply-related data to be monitored." '903 patent col. 15 ll. 32–33. The box does not explain how this function is accomplished, nor do the other boxes in Figure 1E provide any guidance in this respect. Rather, they simply restate other, separate means-plus-elements: the functions of "translating," "uploading and collecting," or "formatting" data, as recited in claim 37.[2] The "means for monitoring changed supply-related data" limitation therefore lacks a

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[2] Claim 37 recites, in relevant part:

> *means for extracting*, at each supply chain site, the supply-related data to be monitored, wherein the data is maintained in plural formats located among the supply chain sites, at least one of the supply chain sites corresponding to an independent entity in the supply chain, being independent of another supply chain site;
> *means for translating* the data to a common format;
> *means for uploading and collecting*, from each supply chain site, the extracted data to a data collection site;
> *means for formatting*, at the data collection site, a portion of the collected data, retrieved from at least one of the supply chain sites other than the site of the user, into one of a plurality of views, responsive to criteria selected by a user associated with a supply chain site, for presentation to the user, the portion of formatted data being dependent on access rights granted to the user's supply chain site . . . .

'903 patent col. 15 ll. 32–48 (emphases added).

corresponding algorithm and is indefinite, rendering claim 37 invalid.

The eight remaining means-plus-function elements in claim 37 are similarly unsupported by adequate structure. Because the analysis above renders claim 37 invalid, however, there is no need to separately consider the remaining functions.[3]

Independent claim 22 contains one means-plus-function element: "[I]nput means for allowing a user associated with a supply chain site to query the data collector for supply-related data retrieved from one of the supply chain sites other than the site of the user . . . ." *Id.* col. 14 ll. 49–52. On appeal, elcommerce argues the publisher provides corresponding structure, but the specification's explanation of the publisher "'simply describes the function to be performed.'" *Blackboard*, 574 F.3d at 1384 (quoting *Aristocrat*, 521 F.3d at 1334). The publisher is described as something that "receives query requests" from the various independent supply chain sites. '903 patent col. 6 ll. 18–23. It provides no more detail than that already contained in the claim language. *Id.* col. 14 ll. 49–51 (claiming "input means for allowing a user . . . to query the data collector for supply-related data").

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[3] Contrary to elcommerce's argument on appeal that the DTE is corresponding structure for the "means for formatting" function, Appellant's Br. 46, the majority determines that the *publisher* supports that limitation, Majority Op. at 26. In any event, this analysis is irrelevant to the ultimate question of claim 37's validity because claim 37 contains eight other indefinite means-plus-function elements, seven of which the majority does not even address.

The specification further states that the publisher is "for publishing data from the data collector upon request," *id.* col. 2 ll. 46–47, which likewise restates the "means for publishing" limitation in claim 37.[4] Rather than providing "some explanation of how the computer performs the claimed function," the specification only "'describes an outcome, not a means for achieving that outcome.'" *Blackboard*, 574 F.3d at 1384 (quoting *Aristocrat*, 521 F.3d at 1334). Accordingly, independent claim 22 is invalid for indefiniteness, thereby invalidating dependent claims 23 through 30, 32, and 33.

IV.

The majority states that "[t]he '903 patent provides over eight columns of 'Detailed Description of the Invention,' with frequent references to the twenty-four pages of graphs and diagrams." Majority Op. at 26. It does not, however, identify one relevant algorithm in any of these pages of description, let alone one algorithm corresponding to each claimed function. Instead it holds that expert testimony is required to find the claims indefinite.

Courts routinely identify corresponding structure without the aid of expert testimony when construing means-plus-function claims. *See*, *e.g.*, *Med. Instr. & Diag. Corp.*, 344 F.3d at 1212–20 (determining the corresponding structure by analyzing the specification, and disagreeing with the patentee's expert testimony). The pernicious result of the majority's holding will be to deter district courts from performing that routine analysis, and to encourage boundless functional claiming.

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[4] Claim 37 states, in relevant part: "*means for publishing* the formatted data view to the user's supply chain site." '903 patent col. 15 ll. 49–50 (emphasis added).

As discussed, none of these eight columns or twenty-four pages of graphs and diagrams contains algorithms corresponding to the eleven means-plus-function claims. The claims are therefore indefinite, and expert testimony is neither required—nor permitted—to remedy the total absence of structure. For these reasons, I would affirm the district court's holding that the asserted system claims are invalid for indefiniteness.