IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

KAAVO INC.,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C.A. No. 14-353-LPS -CJB
	:	
AMAZON.COM INC. and AMAZON WEB SERVICES, INC.,	:	
	:	
	:	
Defendants.	:	
	:	

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MEMORANDUM OPINION

June 18, 2018
Wilmington, Delaware

STARK, U.S. District Judge:

Plaintiff Kaavo Inc. ("Kaavo" or "Plaintiff") sued Defendants Amazon.com, Inc. and Amazon Web Services, Inc. (collectively, "Amazon" or "Defendants"), alleging that Defendants infringe Plaintiff's United States Patent No. 8,271,974 (the "'974 patent"), entitled "Cloud Computing Lifecycle Management for N-tier Applications." (*See* D.I. 1) The '974 patent generally relates to "[m]ethods, devices, and systems for management of a cloud computing environment for use by a software application." ('974 patent, Abstract)

Presently before the Court are the parties' disputes over the meaning of certain terms in the asserted claims of the '974 patent. The parties submitted claim construction briefs (*see* D.I. 122, 125, 134, 135), and expert declarations (*see* D.I. 123, 127, 128). Defendants submitted a tutorial, while Plaintiff provided background on the technology at the bearing. The Court held a claim construction hearing on March 12, 2018, at which both sides presented oral argument. (*See* D.I. 140 ("Tr."))

I. LEGAL STANDARDS

A. CLAIM CONSTRUCTION

The ultimate question of the proper construction of a patent is a question of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388-91 (1996)). "It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted).

"[T]here is no magic formula or catechism for conducting claim construction." *Id.* at 1324. Instead, the Court is free to attach the appropriate weight to appropriate sources "in light

of the statutes and policies that inform patent law." *Id.*

"[T]he words of a claim are generally given their ordinary and customary meaning [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (internal citations and quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). The patent specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

While "the claims themselves provide substantial guidance as to the meaning of particular claim terms," the context of the surrounding words of the claim also must be considered. *Phillips*, 415 F.3d at 1314. Furthermore, "[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment . . . [b]ecause claim terms are normally used consistently throughout the patent." *Id.* (internal citation omitted).

It is likewise true that "[d]ifferences among claims can also be a useful guide. . . . For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1314-15 (internal citation omitted). This "presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." *SunRace Roots Enter. Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

It is also possible that "the specification may reveal a special definition given to a claim

term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316. It bears emphasis that "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)) (internal quotation marks omitted).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The prosecution history, which is "intrinsic evidence," "consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.*

In some cases, "the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva*, 135 S. Ct. at 841. Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. For instance, technical dictionaries can assist the court in determining the meaning of a

term to those of skill in the relevant art because such dictionaries "endeavor to collect the accepted meanings of terms used in various fields of science and technology." *Phillips*, 415 F.3d at 1318. In addition, expert testimony can be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Id.* Nonetheless, courts must not lose sight of the fact that "expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Id.* Overall, while extrinsic evidence "may be useful" to the court, it is "less reliable" than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

Finally, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GmbH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (quoting *Modine Mfg. Co. v. U.S. Int'l Trade Comm'n*, 75 F.3d 1545, 1550 (Fed. Cir. 1996)).

B. INDEFINITENESS

A patent claim is indefinite if, "viewed in light of the specification and prosecution

history, [it fails to] inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). A claim may be indefinite if the patent does not convey with reasonable certainty how to measure a claimed feature. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341 (Fed. Cir. 2015). But "[i]f such an understanding of how to measure the claimed [feature] was within the scope of knowledge possessed by one of ordinary skill in the art, there is no requirement for the specification to identify a particular measurement technique." *Ethicon Endo–Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1319 (Fed. Cir. 2015).

II. CONSTRUCTION OF DISPUTED TERMS

1. "needs analysis algorithm"[1]

Plaintiff "an algorithm applied to user input or a log to generate provisioning information"
Defendants Indefinite
Court Indefinite

Defendants argue that this term is indefinite because the only two places it is mentioned in the specification do not provide any guidance on what the term means. (D.I. 125 at 5) Plaintiff counters that the specification provides "reasonable certainty to one of ordinary skill in the art of the types of needs that the claimed needs algorithm may use." (D.I. 122 at 10-11) (citing '974 patent, 2:53-55, 6:58-60)

The Court agrees with Defendants. The patent does not provide a person of ordinary skill

[1]This term appears in claims 8, 20, and 31.

in the art ("POSA") sufficient context to understand the objective boundaries of the term with reasonable certainty. *See Nautilus*, 134 S. Ct. at 2129. The term has no plain and ordinary meaning in the relevant art. (*See* D.I. 127 Ex. 2 ¶¶ 88) (Defendants' expert opining that, despite more than 25 years of experience, he has never seen this term used outside of '974 patent) While Plaintiff's expert opines that a POSA would "be able to understand the scope of the invention with reasonable certainty" (D.I. 123 Ex. A ¶ 121), she does not identify the purported "plain and ordinary meaning" this term has to a POSA. Instead, Plaintiff merely points to the two uses of this term in the specification; i.e., its explanations that "[i]n some embodiments, the user-defined provisioning information may be determined using a needs analysis algorithm and/or a user input received from a user interface" and that "[i]n some embodiments, a needs analysis algorithm may be applied to the user input to generate a configuration input file." '974 patent, 2:53-55, 6:58-60. But this is insufficient guidance to allow a POSA to assess what "needs" or "analysis" is covered by the claimed "algorithm," or what specific algorithm could be used to determine the user defined provisioning information. (*See* D.I. 127 Ex. 2 ¶¶ 89-94) Without such guidance, a POSA would not know which of several different algorithms, each producing different results, could be used to determine the user defined provisioning information. (*See id.* ¶ 94) Nor is there any description of the algorithm used to generate a configuration input file.

Plaintiff also relies on the portion of the specification describing a "User Interface Processing Module." (*See* D.I. 122 10-11) (citing '974 patent, 13:65-14:8) Plaintiff offers no persuasive explanation for how the "User Interface Processing Module" relates to understanding the meaning of the term, as there is no discussion of how this module performs the purported "needs analysis" through an algorithm.

Accordingly, the Court finds by clear and convincing evidence that the term is indefinite.

2. "initial cloud environment"[2]

Plaintiff "initial potentially accessible computing resources such as datacenters and/or other information technology-related capabilities operated by a cloud provider"
Defendants "initial potentially accessible computing resources available over a network"
Court "initial potentially accessible computing resources available over a network"

The parties' dispute turns on whether a "cloud provider" is required to operate the computing resources. Plaintiff contends that Defendants' construction ignores the word "cloud" in the term and improperly broadens the term to include ***any*** network. (D.I. 122 at 12) Defendants contend that their construction is supported by the intrinsic record. (D.I. 125 at 8)

The Court agrees with Defendants. While a cloud provider ***may*** operate the computing resources, there is no requirement that it do so. *See* 974 patent, 1:22-29 (noting cloud providers "may operate resources") Imposing such a requirement would improperly limit the scope of the claims and would also suggest some dependent claims, which specifically recite such a requirement are superfluous. The specification also explains that the computing resources are available over a network. *See id.* at 11:7-11; Fig. 4.[3]

[2]This term appears in claims 1, 13, and 24.

[3]At the hearing, Defendants acknowledged that, one way or another, the jury will be made to understand that the context of the claims is a cloud computing environment. (*See* Tr. at 107)

3. "initial cloud environment configuration"[4]

Plaintiff "a virtualized set of computing resources from a N-tier cloud computing environment that is to be made available initially to the application"
Defendants no construction necessary; plain meaning, or "configuration of initial potentially accessible computing resources available over a network"[5]
Court "configuration of initial potentially accessible computing resources available over a network."

The dispute with respect to this term is identical to the previous term, with the addition of their dispute over the word "configuration." The Court agrees with Defendants that a POSA would readily understand the meaning of configuration in the patent's context. (*See* D.I. 125 at 10; D.I. 127 Ex. 2 ¶ 103) The Court is not persuaded that the portion of the specification relied on by Plaintiff – noting that configuration "may include an N-tier computing environment that is made available to the application" (D.I. 122 at 12) (citing 974 patent, 5:22-26) – imposes a requirement for the configuration to include a N-tier computer environment and a virtualized set of computing resources.

4. "adjusted cloud environment"[6]

Plaintiff a cloud environment that addresses a desired modification to the initial cloud environment that is made available to the application

[4]This term appears in claims 1, 13, and 24.

[5]*See* D.I. 135 at 10 n.30

[6]This term appears in claims 1, 13, and 24.

Defendants no construction necessary; plain meaning, or "adjusted potentially accessible computing resources available over a network"[7]
Court "adjusted potentially accessible computing resources available over a network"

The Court agrees with Defendants that a POSA would readily understand the meaning of "adjusted" in the patent's context. (*See* D.I. 125 at 12; D.I. 127 Ex. 2 ¶ 107) Plaintiff relies on the specification, noting that "[c]loud environment adjustment . . . may be configured based on a requested adjusted cloud environment." (D.I. 122 at 12) (citing 974 patent, 9:66-10:6) The Court is not persuaded that this portion of the specification provides support to cover the "desired modification" contained in Plaintiff's proposed construction.

5. "determining [or determine] a requested initial cloud environment based on user-defined provisioning information"[8]

Plaintiff "determining [or determine] a requested initial cloud environment based on data associated with the user such as geographic preference (e.g., geographic restriction of locations for data and/or applications), service level requirements (e.g., availability), pricing information, tier definitions (e.g., number of tiers, computational resources needed for each tier, security needs for each tier), security requirements (e.g., data encryption requirements), audit/backup requirements (e.g., frequency of backup, data retention specifications), special monitoring/alert requests (e.g., alert when a firewall rule is breached, alert when average CPU utilization reaches or exceeds a threshold value for a given time in a given tier), etc."
Defendants no construction necessary; plain meaning
Court no construction necessary; plain meaning

The Court agrees with Defendants that the term "user-defined provisioning information"

[7]*See* D.I. 135 at 11 n.34

[8]This term appears in claims 1, 13, and 24.

requires no construction. A POSA would understand user-defined provisioning information to have its customary meaning as referring to provisioning information defined by a user. (*See* D.I. 125 at 14; ; D.I. 127 Ex. 2 ¶ 111) Plaintiff contends that its construction provides proper context by using the same examples of provisioning information described in the specification (D.I. 122 at 14), but the Court does not agree. For example, Plaintiff has not explained why user-defined provisioning information should be limited to "data associated with the user."

6. "application data"[9]

Plaintiff "computer-usable data defining all or part of the application to be executed in the initial cloud configuration"
Defendants no construction necessary; plain meaning
Court "computer-usable data defining all or part of the application to be executed in the initial cloud configuration"

The specification explains that "the application data may comprise computer-usable code defining the application to be executed in the initial cloud configuration." 974 patent, 1:64-66. This provides helpful context for a POSA to understand the meaning of the term consistent with Plaintiff's construction. Defendants' primary objection to Plaintiff's construction is that it excludes configuration data. (D.I. 125 at 16) Defendants are correct that the application data may include configuration data, *see* '974 patent, 7:40-47, and the Court does not believe Plaintiff's construction excludes configuration data.

[9]This term appears in claims 1, 13, and 24.

7. **"determining [or determine] a requested security action based on the security information"**[10]

Plaintiff "determining [or determine] a requested action related to security, such as to shut down a server or generate an alert or notification of a security breach, based on information related to security, such as firewalls, data encryption requirements or possible unauthorized access"
Defendants "determining a requested action relating to security based on information related to security, such as firewalls, data encryption requirements, or possible unauthorized access"
Court "determining a requested action relating to security based on information related to security, such as firewalls, data encryption requirements, or possible unauthorized access"

Plaintiff contends that the examples of security action it proposes to include in the construction are supported by the specification and the understanding of a POSA. (D.I. 122 at 17) Defendants contend that such examples are unnecessary and may cause confusion. (D.I. 125 at 17) The Court agrees with Defendants. The patent distinguishes between security actions and security events. *See* '974 patent, 12:59-61 ("sending a ***security event*** (e.g., shut down of servers, generation of alerts or notifications) based on the requested ***security action***") (emphasis added); *id.* claim 11 ("sending a ***security event*** based on the requested ***security action***") (emphasis added). The portion of the specification that Plaintiff relies on to show examples of security action instead describes examples of ***security event***, not security action. *See* '974 patent, 12:59-61.

[10]This term appears in claims 11, 23, and 34.

8. "sending [or send] a security event based on the requested security action"[11]

Plaintiff "transmitting [or transmit] information for use in performing an action or occurrence related to security, such as to shut down a server or generate an alert or notification of a security breach, based on the requested security action"
Defendants "sending information for use in performing an action related to security based on the requested security action"
Court "sending information for use in performing an action related to security based on the requested security action"

Plaintiff contends that its construction provides context for a POSA to understand the meaning of the term and is consistent with the specification. (D.I. 122 at 17-18) Defendants counter that the limitations in Plaintiff's construction are improper and confusing. (D.I. 125 at 18) The Court agrees with Defendants. Plaintiff provides no basis to replace "transmitting" with "sending," insert "occurrence," or include examples of "action or occurrence related to security."

III. CONCLUSION

The Court construes the disputed terms as explained above. An appropriate Order follows.

[11]This term appears in claims 11, 23, and 34.