

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

KOVE IO, INC.,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	Case No. 18 C 8175
	)	
AMAZON WEB SERVICES, INC.,	)	
	)	
Defendant.	)	

MEMORANDUM OPINION AND ORDER

MATTHEW F. KENNELLY, District Judge:

Kove IO, Inc. (Kove) has sued Amazon Web Services, Inc. (AWS) for infringing three of Kove's patents. The case is before the Court on the parties' respective motions for summary judgment on certain claims, defenses, and counterclaims. For the reasons set forth below, the Court grants both motions in part and denies both in part.

Background

Kove is a Chicago-based company that specializes in computer storage and data management technologies. Kove owns three data storage patents that it alleges AWS has infringed: U.S. Patent No. 7,103,640 (the '640 Patent), entitled "Network Distributed Tracking Wire Transfer Protocol"; U.S. Patent No. 7,814,170 (the '170 Patent), entitled "Network Distributed Tracking Wire Transfer Protocol"; and U.S. Patent No. 7,233,978 (the '978 Patent), entitled "Method and Apparatus for Managing Location Information in a Network Separate From the Data to Which the Location Information Pertains."

A. Kove patents

The three patents-in-suit generally relate to systems and methods for managing the storage, search and retrieval of information across a computer network. Dr. Stephen Bailey and Dr. John Overton are the named inventors on all three patents.

The '170 patent is a continuation of the '640 patent. The two patents share a common specification. The shared specification discloses that, at the time of invention, conventional computer networks included multiple restrictions that limited the capacity of data retrieval systems. For example, a distributed data collection system stores and retrieves data among multiple machines connected by a single network. Distributed data systems were traditionally indexed in a hierarchical fashion, which included indices that required periodic updates. As the network became larger and more complex, the ordinary hierarchical indices became increasingly inefficient. Additionally, generally a single centralized server stored the location information of data files. As distributed data collection systems grew to include more data files, storing the corresponding location information in one place became increasingly impractical.

The invention claimed in the '640 and '170 patents provides a method for overcoming these limitations. The patents are directed to and claim a method of "enabl[ing] hyper-scalable cloud storage and improv[ing] upon the scalability limitations of conventional storage systems." Compl. ¶ 18. Specifically, the claimed inventions provide a process by which a client¹ can send a data request to a location server, and if

¹ The Court has construed the term "client" to mean "a network-attached component (which may be software or hardware) that initiates update or lookup of identifier/location mappings from a location server with location request messages." *See Kove IO, Inc. v. Amazon Web Servs., Inc.*, No. 18 C 8175, 2021 WL 5988928, at *18 (N.D. Ill. Dec. 17, 2021).

that location server does not contain location information for the requested data, it responds with a redirect message that specifies which location server contains the relevant location information. In contrast to conventional storage systems, the claimed technology utilizes hash values to quickly identify which location server contained the location information of a particular file. This process reduces the processing time for retrieving data files and increases efficiency for location server identification.

The '978 patent is a continuation-in-part of the '640 patent. The '978 patent addresses the challenge of "scaling system capabilities in a manner sufficient to handle variable demand for resources" in a network. Compl., Ex. 5 at 2:12-13. The invention claimed in the '978 patent "provides a system and method for managing data, using a transfer protocol, in a network environment." *Id.* at 2:19-21.

B. AWS technology

DynamoDB (DDB) became available to the public in 2012. It enables users to create database tables to organize, store and retrieve items. DDB tables are distributed across partitions, allocations of storage that are internal to DDB. For DDB the user defines a primary key that serves as a unique identifier for a single item in the DDB table. DDB provides for two different kinds of primary keys. A simple primary key consists of a single partition key; a composite primary key includes a primary key and a sort key. If a table has a simple primary key, a user can read an item from a table by specifying the item's partition key value. If a table has a composite primary key, the user must specify both the partition key and sort key values. DDB "uses the partition key value as input to an internal hash function," and the output from this hash function yields the partition storing the data. Compl., Ex. 11 at 5. Data plane operations allow a

user to perform various actions on data in a table. "GetItem" retrieves an individual item from a table, and "Query" retrieves all items with a specific partition key. *Id.* at 9.

In 2017, Kove and Amazon discussed a potential sale of XFM, a Kove product unrelated to the asserted patents. Overton attended at least three meetings with Amazon personnel during this time and did not discuss potential infringement of the patents-in-suit during these meetings.

C. Present lawsuit

On December 12, 2018, Kove brought suit against AWS for infringement. Specifically, Kove alleged that AWS had infringed claim 1 of the '170 patent, claim 18 of the '640 patent and claim 17 of the '978 patent. In response, AWS asserted counterclaims alleging non-infringement, unpatentability, unenforceability and invalidity.

On April 5, 2019, AWS filed a motion to dismiss, arguing that all three patents were directed to the abstract idea of data storage and were therefore invalid under 35 U.S.C. § 101. The Court (by Judge Pallmeyer) denied the motion, holding that based on the complaint's allegations, the claims of the patents were directed toward patent-eligible subject matter. *See Kove IO, Inc. v. Amazon Web Servs., Inc.*, 448 F. Supp. 3d 849, 858-59 (N.D. Ill. 2020).

On November 19, 2021, Amazon filed requests for *ex parte* reexamination of claims 1, 2, 6, 8, 9, 12 and 15 of the '170 patent ('035 reexamination), claims 17, 18 and 24 of the '640 patent ('036 reexamination) and claims 1, 3, 6, 10, 14, 17, 23, 24, 30 and 31 of the '978 patent ('034 reexamination). The United States Patent and Trademark Office (USPTO) granted all three requests. It subsequently upheld the patentability of the '640 and '170 patents. In the '034 reexamination, the USPTO initially issued an

Office Action rejecting claims 1, 3, 6, 10, 14, and 31 of the '978 patent as unpatentable over prior art. Kove responded to USPTO's Office Action, and USPTO subsequently upheld the patentability of claims 3, 6, 10, and 14 and issued a final rejection for claims 1 and 31. Amazon's additional reexamination requests for the '640 patent, the '170 patent, claims 3, 6, 10 and 14 of the '978 patent ('162 reexamination) and claims 17, 23, 24 and 30 of the '978 patent ('109 reexamination) are pending. Amazon has also filed a petition with the Director of the USPTO to overturn the examiner's decision on claims 3, 10, and 14 of the '978 patent.

On December 17, 2021, the Court (again, by Judge Pallmeyer, to whom the case was then assigned) construed various disputed terms of the Kove patents. See *Kove IO, Inc. v. Amazon Web Servs., Inc.*, No. 18 C 8175, 2021 WL 5988928, at *18 (N.D. Ill. Dec. 17, 2021). Prior to the claim construction hearing, the parties agreed upon the proper construction of the term "location": "an encoding that is a member of a set of associations with an identifier in a location server, and that specifies where data pertaining to the entity identified by the identifier is stored." *Id.* at *7. In its ruling, the Court construed two terms that are particularly relevant to the present motions. First, it held that the claim term "location server" requires "a network-attached component that maintains a set of identifier/location mappings that are modified or returned in response to location request messages from clients." *Id.* at *18. Second, it held that the claim term "location information" should be construed differently across the three patents. For the '640 and '170 patents, the term "location information" means "information pertaining to one or more locations of data and/or the identities of one or more location servers." *Id.* In contrast, for the '978 patent "location information" is defined as "one or more

identifiers and their associated locations." *Id.*

Following the claim construction hearing, Kove added additional claims that it alleges AWS has infringed and continues to infringe upon. Kove now asserts claims 17, 18, and 24 of the '640 patent, claims 1, 2, 6, 8, 12 and 15 and the '170 patent, and claims 3, 6, 10, 14, 17, 23, 24 and 30 of the '978 patent. Def.'s Stmt. of Mat. Facts, Ex. 4 at 2.

Kove and AWS have both moved for summary judgment. AWS contends that further claim construction is required due to statements Kove made about the patents during the reexamination process. AWS also argues that it is entitled to summary judgment because the patents are invalid under section 101, or in the alternative because no reasonable jury could find that its products infringed Kove's patents or that Kove is entitled to enhanced damages. Kove has filed a cross-motion for summary judgment arguing that it is entitled to summary judgment on various invalidity defenses and that AWS cannot establish its equitable estoppel, waiver or inequitable conduct defenses.

Discussion

Summary judgment is appropriate if the moving party demonstrates that there is "no genuine issue as to any material fact and the movant is entitled to judgment as a matter of law." *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986) (quoting Fed. R. Civ. P. 56). The moving party may accomplish this by showing that the nonmoving party will be unable to "establish the existence of an element essential to [the nonmoving] party's case, and on which [the nonmoving] party will bear the burden of proof at trial." *Celotex Corp.*, 477 U.S. at 322. Once the moving party has met its burden, "summary judgment

requires a non-moving party to respond to the moving party's properly supported motion by identifying specific, admissible evidence showing that there is a genuine dispute of material fact for trial." *Grant v. Trs. of Ind. Univ.*, 870 F.3d 562, 568 (7th Cir. 2017) (citation omitted).

In analyzing cross-motions for summary judgment, the Court "view[s] all facts and inferences in the light most favorable to the nonmoving party on each motion." *Lalowski v. City of Des Plaines*, 789 F.3d 784, 787 (7th Cir. 2015) (citation omitted). The non-moving party is "only entitled to the benefit of inferences supported by admissible evidence, not those 'supported by only speculation or conjecture.'" *Grant*, 870 F.3d at 568 (quoting *Nichols v. Mich. City Plant Plan. Dep't*, 755 F.3d 594, 599 (7th Cir. 2014)). A court's task is not to "weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for trial." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986). "A genuine issue for trial exists only when a reasonable jury could find for the party opposing the motion based on the record as a whole." *Pipitone v. United States*, 180 F.3d 859, 861 (7th Cir. 1999) (citation omitted).

A. Claim construction

AWS argues that additional claim construction is necessary to resolve a dispute between the parties regarding claim scope and ensure that both parties apply consistent understandings of the claim language. "When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it." *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). "[A] district court may (and sometimes must) revisit, alter, or supplement its claim constructions . . . to the extent necessary to ensure that final constructions serve their

purpose of genuinely clarifying the scope of claims for the finder of fact." *In re Papst Licensing Digital Camera Pat. Litig.*, 778 F.3d 1255, 1261 (Fed. Cir. 2015). The Court agrees that the parties dispute the scope of material claim terms and that further construction would clarify claim scope for the jury, so it grants AWS's request for further claim construction.

1. Prosecution disclaimer/disavowal

Generally, claim terms are 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." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). The Federal Court has ruled that courts should depart from this general rule when 1) "a patentee sets out a definition and acts as his own lexicographer" or 2) "the patentee disavows the full scope of a claim term either in the specification or during prosecution" through a prosecution disclaimer. *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). The prosecution disclaimer doctrine applies to patent reexamination proceedings. *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1359 (Fed. Cir. 2017); see *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 869 (Fed. Cir. 2004) (ruling patentee's statement during reexamination constituted clear disclaimer).

"[T]he doctrine of prosecution disclaimer ensures that claims are not construed one way in order to obtain their allowance and in a different way against accused infringers." *Aylus Networks*, 856 F.3d at 1360 (citation omitted). A disclaimer can arise through an argument made to induce the granting of a patent. *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

AWS filed reexamination petitions regarding each of the Kove patents in suit. During the prosecution of the '640 patent, the examiner rejected claims 17, 18 and 24 as unpatentable in a Non-Final Office Action (NFOA). In its response to the NFOA, Kove distinguished the invention claimed in the '640 patent from prior art that the examiner had found rendered the asserted claims obvious. Kove argues that its statements distinguishing its invention from prior art do not qualify as a disclaimer because it was clarifying the existing scope of the claims rather than "narrowing the claims to less than what they otherwise would have been." Pl.'s Resp. Def.'s Mot. for Summ. J. at 33. This argument is unpersuasive.

The Federal Circuit has repeatedly affirmed that statements made by a patent holder in an attempt to distinguish an invention from prior art qualify as a disavowal. See, e.g., *Regents of Univ. of Minn. v. AGA Med. Corp.*, 717 F.3d 929, 942 (Fed. Cir. 2013) ("When an applicant tells the PTO that a prior art reference lies outside the scope of his claim, he is bound by that argument.") (citing *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995)); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1273-75 (Fed. Cir. 2001) (affirming district court's reliance on statements distinguishing invention from prior art during prosecution for claim construction). Such statements may be considered a disavowal even if the patent holder did not expressly convey an intention to redefine or disavow a claim term. *Bell Atl. Network Servs.*, 262 F.3d at 1268.

According to Kove, "the claim language must claim something within its scope before it can be disclaimed." Pl.'s Resp. Def.'s Mot. for Summ. J. at 32. But prosecution disclaimer may be found where "the patentee has unequivocally disavowed

a certain *meaning* to obtain his patent." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (emphasis added). And Federal Circuit precedent establishes that a patent holder can disavow an interpretation of a claim through "express representations" regarding the claim scope and meaning, even if the patentee's representations affirm the claim's original interpretation. *Bell Atl. Network Servs.*, 262 F.3d at 1268; *Genuine Enabling Tech. LLC v. Nintendo Co.*, 29 F.4th 1365, 1374-75 (Fed. Cir. 2022) (concluding that patent holder's clarification of scope of his invention to examiner constituted disavowal of claim scope); *Uship Intell. Props., LLC v. United States*, 714 F.3d 1311, 1314 (Fed. Cir. 2013) (holding that patentee's response to examiner clarifying that claims were directed to single invention demonstrated prosecution disclaimer).

Kove contends that even if the Court finds that a prosecution disclaimer applies, it may be applied only to the specific claims that the examiner considered during the reexamination process. Specifically, Kove argues that any alleged prosecution disclaimers would not apply to claims 6, 17, 23, 24 or 30 of the '978 patent because Kove did not make statements regarding those claims in the reexamination for the '034, '035, and '036 patents. Federal Circuit precedent squarely forecloses this argument, as "the prosecution history of a parent application may limit the scope of a later application using the same claim term." *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1300 (Fed. Cir. 1999); *see also Omega Eng'g*, 334 F.3d at 1333 ("An interpretation asserted in the prosecution of a parent application can also affect . . . continuation-in-part applications.") (citing *Wang Labs., Inc. v. Am. Online Inc.*, 197 F.3d 1377, 1384, 1161, 1165 (Fed. Cir. 1999)). The '978 patent is a continuation-in-part of

the '640 patent, and any disclaimers made during the prosecution of the '640 patent claims may therefore be applied to the claim terms of the '978 patent. See *Omega Eng'g*, 334 F.3d at 1333-34 (holding that disclaimer from prosecution of parent patent attaches to the construction of continuation-in-part patent). Thus all seventeen asserted claims are subject to further claim construction based on the prosecution history.

Furthermore, although Kove did not submit a response regarding claims 17, 23, 24 or 30 of the '978 patent during the '034 reexamination, it admits that the examiner issued a NFOA rejecting those same claims in the '109 reexamination. Def.'s Stmt. Mat. Facts ¶¶ 8-9. Kove later filed a response to the USPTO attempting to distinguish those claims from prior art. Those statements are now part of the prosecution history and can be used to evaluate whether Kove's statements constitute a prosecution disclaimer.

2. AWS's proposed claim construction

AWS asks the Court to further construe the asserted claims to require: "(1) location servers in non-hierarchical, cluster structures, where each location server (2) contains the relevant location information, or information to locate the relevant location information, and (3) can resolve the request in two or fewer steps." Def.'s Mot. for Summ. J. at 11.

a. Non-hierarchical structures

The parties agree that during the '034, '035 and '036 reexaminations, Kove stated that at least twelve of the asserted claims require a "non-hierarchical" server

configuration.² Pl.'s Stmt. of Mat. Facts ¶ 5. Kove contends, however, that these statements do not constitute a disclaimer because the scope of the patent never included hierarchical structures, and Kove was therefore affirming the claim scope rather than disavowing it.

The parties dispute whether the asserted claims originally covered hierarchical embodiments, but this dispute is immaterial. A patent holder can disavow a claim meaning even if that meaning was not originally disclosed by the claim. For example, in *In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1324 (Fed. Cir. 2011), the Federal Circuit affirmed the district court's use of the patentee's statements addressing the meaning of a claim term during reexamination to support its claim construction. In that case, a prior art reference used a password as a form of "personal identification data," and the examiner rejected the patent as obvious in view of this prior art. *In re Katz*, 639 F.3d at 1324. The patent holder responded to the examiner by explaining that the prior art reference used the term "personal identification data" in a manner different from the patent claim and asserted that a password could not qualify as "personal identification data" as defined by the patent. *Id.* In other words, the patent holder clarified the original meaning of the claim term "personal identification data" to distinguish the patent from prior art, and the Federal Circuit held that this clarification constituted a disavowal of the use of a password as personal identification data. See *Id.*

Similarly, here, the examiner issued NFOAs rejecting certain claims of the

² Kove does not dispute that this statement applies to claims 17, 18 and 24 of the '640 patent, claims 1, 2, 6, 8 and 12 of the '640 patent, and claims 3, 6, 10 and 14 of the '978 patent.

patents-at-issue as obvious over prior art references. Kove submitted responses explaining that the patents claimed a location server configuration that was incompatible with the prior art references' server structure. Specifically, Kove stated that a "non-hierarchical cluster configuration" is expressly or implicitly required by the initially rejected claims of all three patents-at-issue. See Pl.'s Stmt. of Add'l Mat. Facts ¶¶ 5, 8, 11. None of the asserted claims that Kove identified as requiring a "non-hierarchical" cluster configuration use that terminology to describe the location server structure. Claim 17 of the '640 patent, for example, provides:

17. A system for retrieving data location information for data stored in a distributed network, the system comprising:

a plurality of data repositories configured to store data, wherein the data is associated with a respective identifier string in each data repository;
a data location server network having a plurality of data location servers, each of the plurality of data location servers containing location string associated with respective identifier strings and each of the plurality of data location servers having computer executable code configured to execute the following steps:
in response to receiving a data location request from a client to retrieve a location string associated with an identification string provided in the data location request, transmitting a redirect message to the client if the identification string is not associated with a location string at the data location server, wherein the redirect message contains information for use by the client to calculate a location of a different data location server in the plurality of data location servers, wherein the different data location server contains the location string.

Def.'s Stmt. Mat. Facts, Ex. 38 at 2.

Despite the lack of express language regarding the hierarchical structure of the data location server network, Kove's expert, Dr. Michael Goodrich, submitted a declaration to the examiner opining that a person of ordinary skill in that art (POSITA) would have understood claim 17's limitations to "require a nonhierarchical cluster configuration as taught by the '640 patent." Pl.'s Stmt. of Mat. Facts ¶ 6. This non-

hierarchical configuration requirement, Kove contended, distinguished its claimed invention from prior art that "depends on a *hierarchical* structure where a client can only query to the node immediately 'above' or 'below' it in the 'tree.'" Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K134 at 23. Kove made similar statements regarding the asserted claims of the '170 and '978 patents. See Pl.'s Stmt. of Add'l Mat. Facts ¶¶ 4, 8, 11.

During the reexamination proceedings, Kove expressly described the location server structures required by at least twelve of the asserted patent claims as "non-hierarchical," and it used the "hierarchical" server structure of the prior art reference as a basis to differentiate it from the invention claimed in its patents. Therefore, the prosecution disclaimer doctrine may be applied to Kove's statements, regardless of whether the claims originally included "hierarchical" server structures.

To constitute a disavowal, the disclaiming statements must be both "clear" and "unambiguous." *Omega*, 334 F.3d at 1335. "[W]ords or expressions of manifest exclusion or restriction" can demonstrate a clear disavowal of claim scope. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1326 (Fed. Cir. 2002).

Kove's statements to the USPTO during the reexamination proceedings clearly and unambiguously disavowed hierarchical location server structures. During the '034, '035, '036 and '109 reexaminations, Kove stated that the invention claimed in the patents-at-issue allow for data access "through a non-hierarchical, limitlessly scalable, server structure." Def.'s Stmt. of Mat. Facts ¶ 32; Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. 140 at 9. In its responses to the USPTO's NFOA's, Kove repeatedly stated that the claims-at-issue for all three patents required a "non-hierarchical cluster

configuration." See Def.'s Stmt. of Mat. Facts, Ex. 37 at 23; *Id.*, Ex. 35 at 25; *Id.*, Ex. 32 at 35. Furthermore, Kove identified multiple features of the claims-at-issue that it argued expressly or impliedly require a non-hierarchical server structure, such as a "hash function" and "location servers that enable each server in the server network to know which location server contains the location(s) of the desired data." Pl.'s Stmt. of Add'l Mat. Facts ¶ 8; Def.'s Stmt. of Mat. Facts ¶ 33. Kove also asserted that the limitations in the claims-at-issue cannot be met by location servers that utilize hierarchical configurations. See, e.g., Pl.'s Stmt. of Add'l Mat. Facts, Ex. K127 at 37 ("A hierarchical configuration does not enable nodes to have such knowledge."). In sum, Kove's reexamination statements clearly and unambiguously disavowed hierarchical location server configurations. AWS's proposed construction, providing that location servers must be arranged in "non-hierarchical structures,"³ is therefore appropriate.

Kove argues that claims 17, 23, 24, and 30 of the '978 patent should not be construed to require non-hierarchical configurations because Kove did not address these claims in its responses to the NFOAs issued in the '034, '035, and '036 reexaminations. But the USPTO considered claims 17, 23, 24 and 30 of the '978 patent in the '109 reexamination. And after the USPTO issued a nonfinal rejection of those

³ AWS asks the Court to also find that location servers must be arranged in a "cluster" configuration. But the definition of "cluster" as Kove used it in the reexamination proceedings is unclear. One of Kove's statements to the examiner suggests that it considers the terms "hierarchical" and "cluster" synonymous. See Mot. for Add'l Claim Construction, dkt. no. 539-4 at 35 ("[I]ndependent claims 10 and 14 and dependent claim 3 of the '978 patent require networks with *non-hierarchical* (or 'cluster') configurations."). But Kove's expert also used the "cluster" terminology to describe what he describes as a "flat" topology. Pl.'s Stmt. Add'l Mat. Facts, Ex. K53 ¶ 121. Given the lack of clarify regarding the definition of "cluster," the Court will adopt only the "non-hierarchical" language included in AWS's proposed claim construction.

patent claims, Kove filed a response stating that the invention, "as embodied in the claims of the '978 patent," allows client data access through a "non-hierarchical" server structure. Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K140 at 9. Given that Kove used the same "non-hierarchical" language to describe the invention embodied by these four patent claims as it did for the claims in the related patents, its argument that a disclaimer should not apply because it was "silent as to these claims" lacks merit. See Pl.'s Resp. to Def.'s Mot. for Summ. J. at 35. And because the '978 patent is a continuation-in-part of the '640 patent, Kove's disavowal of hierarchical server structures during the prosecution of the '640 patent is appropriately applied to the '978 patent. See *Omega Eng'g*, 334 F.3d at 1334 (concluding that disavowal made during prosecution of parent patent application applies to continuation-in-part patent).

Furthermore, claim terms are presumed to carry the same meaning throughout a patent. See *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001) ("[A] claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent."). Kove's statements regarding claims 3, 10 and 14 of the '978 patent during the '034 reexamination can therefore be used to inform the construction of claims 6, 17, 23, 24, and 30 of the same patent. This Court will "presume, unless otherwise compelled, that the same claim term in the same patent . . . carries the same construed meaning." *Omega Eng'g*, 334 F.3d at 1334.

Kove has presented no evidence that leads to the conclusion that the location servers recited by claims 17, 23, 24, and 30 of the '978 patent should be construed differently from those in claims 3, 10 and 14 of that patent. Notably, Kove does not argue that the "non-hierarchical" limitation does not apply to these claims. Instead it

contends that it cannot have disavowed any claim scope for claims that were not included in its response to the USPTO's NFOA in the '034 reexamination. See Pl.'s Resp. to Def.'s Mot. for Summ. J. at 35. Only for claim 6 of the '978 patent does Kove argue that the "non-hierarchical" configuration requirement is not recited by the claim. But rather than relying on the claim language for this proposition, Kove simply asserts that it has "never made (and AWS does not cite) any statements about 'non-hierarchical' in relation to claim 6." *Id.* at 36.

AWS notes that in its response to the NFOA, Kove asserted that "[c]laim 6 depends from claim 1, and therefore is patentable over [prior art] for at least the same reasons discussed with respect to claim 1." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K127 at 69. But the portion of Kove's NFOA response that AWS cites does not include a clear and unambiguous disavowal of hierarchical structures regarding claim 1, and in fact, the term "non-hierarchical" does not appear at all on the cited page. See Def.'s Reply at 12 (citing Def.'s Stmt. of Mat. Facts, Ex. 32 at 15).

There is, however, other evidence in the record that supports construing claim 6 to also require a non-hierarchical server configuration. In the '034 reexamination, the examiner concluded that the prior art reference must not include the limitation required by claim 6, because if it did, "there would be no need to pass requests up and down a hierarchy of Names Servers; it could determine on its own the Names Server having the desired information and send the request directly to that Names Server." Def.'s Stmt. of Mat. Facts ¶ 41. An examiner's statements alone cannot be used as the basis for a disavowal. *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1345 (Fed. Cir. 2005). But "[s]tatements about a claim term made by an examiner during prosecution of an

application may be evidence of how one of skill in the art understood the term at the time the application was filed." *Id.* at 1347. Here, the examiner's statements suggest that a POSITA would have understood claim 6 of the '978 patent to require a non-hierarchical location server configuration. Furthermore, the construction of claim 6 of the '978 patent cannot be "divorced from the context" of the prosecution history of the related patents. *Nystrom v. TREX Co.*, 424 F.3d 1136, 1144–45 (Fed. Cir. 2005).

In view of Kove's statements during the '109 reexamination, Kove's disavowal of the same claim term for other claims in the '978 patent, and the prosecution history of the '640 patent, this Court finds that the "non-hierarchical configuration" disclaimer applies to claims 6, 17, 23, 24, and 30 of the '978 patent.

Kove argues that the parties disagree on the meaning of the word "hierarchical." Pl.'s Resp. to Def.'s Stmt. of Mat Facts ¶ 56. "Ultimately, the only meaning that matters in claim construction is the meaning in the context of the patent." *Poly-Am., L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1137 (Fed. Cir. 2016). And a court will construe terms "only to the extent necessary to resolve the controversy." *Jackson v. Casio PhoneMate, Inc.*, 166 F. Supp. 2d 1237, 1246 (N.D. Ill. 2001).

The Kove patents do not include a definition of "non-hierarchal." But during the reexamination process, Kove repeatedly described what "non-hierarchical" meant in the context of the patent. See, e.g., Def.'s Stmt. of Mat. Facts, Ex. 32 at 40 ("[A]ny given server is able to return either the requested information or information useable by the client to locate the server with the requested information."). Kove also provided multiple descriptions of servers in hierarchical configurations. See, e.g., Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K131 at 25 ("Servers in hierarchically structured networks do

not 'know' what's contained in other servers throughout the network."); Def.'s Stmt. of Mat. Facts, Ex. 32 at 36 ("[t]hese limitations cannot be met in hierarchical configurations . . . because location servers in tree-structures *do not necessarily store* information for finding the location server having the desired location information."). Here, Kove "acted as [its] own lexicographer" in defining this claim term, and the Court therefore adopts Kove's definition. *Thorner*, 669 F.3d at 1365. AWS does not dispute Kove's definition of "non-hierarchical" and instead argues that the allegedly infringing products do not utilize the required non-hierarchical configuration. See Def.'s Mot. for Summ. J. at 17-22. The Court finds that no further construction of the term "non-hierarchical" is necessary.

During the reexamination proceedings, Kove clearly and unambiguously limited the asserted claims to location server structures that have a "non-hierarchical" configuration. And Kove further argued that certain features of the claim limitations, such as a "redirect message," necessarily required these non-hierarchical configurations. A construction allowing location server structures that include those with hierarchal configurations would inappropriately permit Kove to recapture claim scope that it disclaimed during examination. The Court's previous construction of "location server" does not expressly reflect Kove's non-hierarchical topology limitation. This Court therefore construes the claim term "plurality of location servers" to require "location servers in non-hierarchical structures."

b. Relevant location information

During the reexamination process, Kove asserted that claim 1 of the '170 patent includes a limitation that "requires each data location server in a data location network"

to be "configured to determine the data location server that contains the location information." Def.'s Stmt. of Mat. Facts, Ex. 35 at 33. Similarly, Kove stated during the '035 reexamination that claims 17 and 18 of the '640 patent "require every server in the network be able to return information for calculating the location of the server that contains the requested information." *Id.*, Ex. 37 at 10. And Kove also contended that the '978 claims require that "any given server is able to return either the requested information or information useable by the client to locate the server with the requested information." *Id.*, Ex. 32 at 40.

Judge Pallmeyer construed the term "location server" to mean, in relevant part, a "network-attached component that maintains a set of identifier/location mappings." *Kove*, 2021 WL 5988928, at *18. AWS asks this Court to further construe a non-hierarchical location server structure to require that "each location server contains the relevant location information, or information to locate the relevant location information." Def.'s Mot. for Summ. J. at 11.

Kove's description during the reexamination process of each location server's ability to determine the location of a data entity does not clearly and unambiguously mandate that each location server "contain" that information. Kove did describe the claimed invention of the patents-at-issue as one where "any first queried server will either have the requested information or will provide the client with the information to find the requested information in the client's next query." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, K134 at 10. But Kove's description of its own invention as one where a server "has" this information does not disclaim any invention where a server, for example, does not "contain" the information but is able to produce it upon request.

In addition, in its explanation of the claim limitations, Kove repeatedly states that the non-hierarchical server configuration "enables" or "allows for" a location server to either resolve a data location request or determine the location of the requested data, without conveying that the location server itself must store that information. See Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, K134 at 15. Kove consistently asserts that the servers must "be capable of" or "configured to" resolve these data location requests without any accompanying language indicating the servers must "contain" that information. *Id.* at 10; Def.'s Stmt. of Mat. Facts, Ex. 35 at 32. There is no reason to believe that a location server must "contain" the relevant location information in order to be enabled or configured to provide it. Kove's language is "amenable to multiple reasonable interpretations," and a finding of disclaimer is therefore not appropriate. *Mass. Inst. of Tech. v. Shire Pharms., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016) (citation omitted). The Court therefore overrules AWS's argument that Kove disavowed location servers that do not "contain" the relevant location information or information to locate the relevant location information.

Even if AWS were correct that these statements represent a clear and unmistakable disavowal of claim scope, inclusion of AWS's requested language would be redundant. Kove has conceded that the mandate that "each server in the server network" must be enabled to "return the requested information" or "know which location server contains the location(s) of the desired data" is disclosed by the "non-hierarchical configuration" that the claims require. Def.'s Stmt. of Mat. Facts ¶ 33; *see also Id.* ¶ 34 ("These limitations cannot be met in hierarchical configurations . . . because each location server in tree-structures do not necessarily store information for finding the

location server having the desired location information."). Construing the term further in the manner AWS suggests would be unnecessary. See *U.S. Surgical Corp.*, 103 F.3d at 1568 ("Claim construction . . . is not an obligatory exercise in redundancy."). The Court therefore declines to construe location servers in a non-hierarchical configuration as requiring each location server to contain location information in the manner AWS suggests.

c. Two or fewer steps

AWS asks the Court to construe a non-hierarchical configuration of location servers to mean that all location servers are capable of providing the requested location information "in no more than two steps." Def.'s Reply at 14-15. AWS supports its argument by pointing to two statements that Kove made during the reexamination proceedings. First, in the '034, '035 and '036 reexaminations, Kove stated that for all three patents-at-issue, "[t]he structured relationships of the invention allow clients to access data in distributed environments through a non-hierarchical, limitlessly scalable, server structure that enables retrieval of requested information in not more than two iterations." Def.'s Stmt. of Mat Facts ¶ 32. Second, Kove stated in the '109 reexamination that "the location servers in the network do not have to execute any extraneous steps for determining or identifying a given entity when re-solving a location query." *Id.* ¶ 9.

These statements are not sufficient to constitute a clear and unmistakable disavowal of any location information retrieval process that does not take place in two or fewer steps. Kove's statement that "the location servers in the network do not have to execute any extraneous steps" is referring to the steps taken for identifying a unique

entity, not the steps for finding the relevant location information. Def.'s Stmt. of Mat Facts., Ex. 10 at 11. Additionally, Kove's assertion that its claimed invention "enables" or "allows" a particular process does not mandate a finding that the claims of that invention *require* that process to occur. To hold Kove to this one-sentence general description of its invention, with no limiting language, would be importing a limitation into the claim that it does not include. *See Am. Piledriving Equip., Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1331 (Fed. Cir. 2011) ("It is well settled that the role of a district court in construing claims is not to redefine claim recitations or to read limitations into the claims.").

In conclusion, AWS's claim construction proposal is granted to the extent that "plurality of location servers" will be construed to include only those arranged in "non-hierarchical configurations."

B. AWS's motion for summary judgment

AWS moves for summary judgment of noninfringement on all seventeen asserted claims. AWS also seeks summary judgment on Kove's willful infringement and enhanced damages claims.

1. Noninfringement

"To support a summary judgment of noninfringement it must be shown that, on the correct claim construction, no reasonable jury could have found infringement on the undisputed facts or when all reasonable factual inferences are drawn in favor of the patentee." *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1371 (Fed. Cir. 2002). The infringement analysis includes two steps. "The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is

comparing the properly construed claims to the device accused of infringing." *Duncan Parking Techs., Inc. v. IPS Group, Inc.*, 914 F.3d 1347, 1360 (Fed. Cir. 2019).

"[I]nfringement must be shown literally or equivalently for each limitation; general assertions of facts, general denials, and conclusory statements are insufficient to shoulder the non-movant's burden." *TechSearch*, 286 F.3d at 1372.

AWS provides non-infringement arguments under both Judge Pallmeyer's original claim construction and AWS's own new proposed construction. AWS contends that it is entitled to summary judgment under the original claim construction order because its accused products do not have "location servers" as required by the asserted claims. See Def.'s Mot. for Summ. J. at 22-29. Because the Court partially adopted AWS's claim construction proposal, for the infringement analysis, it will assume that the products do have location servers and only address AWS's argument regarding whether these alleged location servers employ a "non-hierarchical" configuration.

AWS argues that it does not infringe any of the asserted claims because none of the accused products include non-hierarchical topologies. Kove argues that both S3 and DDB include non-hierarchical configurations of components that they allege qualify as location servers. Both parties rely heavily on the testimony of expert witnesses to support their infringement positions. The Court finds that there are genuine factual disputes material to whether the accused products meet the "non-hierarchical" configuration limitation of the asserted claims and that AWS is therefore not entitled to summary judgment of no infringement.

Kove identifies S3's Keymap Function Coordinators (KFCs) and DDB's Metadata

Nodes (MNs)⁴ as the alleged location servers within the accused products. Kove contends that the KFCs and MNs are arranged in a non-hierarchical configuration. According to Goodrich, KFCs and MNs are non-hierarchical because "requests from clients . . . are sent directly to the correct [KFC or MN]," they "are not structured in layers with respect to each other," and "requests to a [KFC or MN] are not passed through other [KFCs or MNs] on different hierarchical levels (as there is no such thing)." Pl.'s Stmt. of Mat. Facts ¶¶ 122-23.

AWS disputes Kove's characterization of its products. AWS contends that both S3 and DDB are arranged into seventeen "hierarchical regions" and that within those regions there is an additional layer of hierarchy called "availability zones." Def.'s Mot. for Summ. J. at 17. AWS also contends that the S3 and DDB components are organized into hierarchies, as S3's iNodes and DDB's partitions are arranged in a hierarchical "tree structure." *Id.* at 20-21. Kove responds that its claim of infringement is solely focused on S3 and DDB's availability zones and/or regions, and therefore any evidence related to hierarchies that exist outside of these zones/regions or among the products' components is irrelevant. Pl.'s Resp. to Def.'s Mot. for Summ. J. at 43-44.

The Court agrees that much of the evidence AWS presents in support of its non-infringement argument is immaterial. For example, AWS argues that S3 and DDB contain "many different components that are themselves organized into additional logical hierarchies." Def.'s Reply at 18. Kove stated during the '036 reexamination that

⁴ Kove also identified Brick Managers (BM)s within DDB as an alleged location server for claims 17, 23, 24 and 30 of the '978 patent. But Kove admits that BMs do not employ a "non-hierarchical" configuration. Because the Court has construed all seventeen asserted claims to require local servers in a non-hierarchical configuration, it only addresses Kove's arguments regarding KFCs and MNs as alleged location servers.

the limitations of the asserted claims of the '640 patent allow "[a] client [to] send a query to any server in the network" through a process by which the *server* "is configured to return a message to the client" Pl.'s Stmt. of Add'l Mat. Facts, K134 at 23.

Similarly, in the '035 reexamination, Kove explained that the asserted claims of the '170 patent require that "location servers" are capable of returning "redirect messages," and that these redirect message limitations demonstrate that the claims recite a non-hierarchical configuration. Pl.'s Stmt. of Add'l Mat. Facts, K131 at 26. It is clear that the non-hierarchical configuration recited in the claims is directed to the configuration of the location servers, and the hierarchical structure of components other than the alleged location servers is therefore immaterial.

Similarly, AWS contends that "S3 and DDB both divide their data storage systems into geographical hierarchies, including at least one layer of 17 regions, plus another layer dividing those regions into availability zones." Def.'s Reply at 18. But Kove's infringement contentions are not about the "data storage systems." According to Kove, its infringement argument hinges on whether the alleged location servers within the S3 and DDB availability zones are arranged in a non-hierarchical topology, and it contends that a genuine factual dispute exists regarding whether KFCs and Metadata Nodes are arranged hierarchically. Pl.'s Resp. Def.'s Mot. for Summ. J. at 43-44. The pertinent question is whether S3 or DDB contain location server structures or configurations where the servers are arranged in a non-hierarchical topology.

Kove's expert Goodrich opined that both S3 and DDB have multiple location servers that are arranged in a non-hierarchical topology within an availability zone. AWS asks the Court to disregard Goodrich's testimony, contending that Kove's focus

only on the topology within the availability zones is "clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history." Def.'s Mot. for Summ. J. at 18-19 (citing *Phillips*, 415 F.3d at 1318). But Goodrich's infringement analysis is consistent with the prosecution history and the Court's previous claim construction.

During the reexamination proceedings, Kove distinguished the prior art by asserting that the asserted claims required "a non-hierarchical cluster configuration of locations servers in a network." See, e.g., Def.'s Stmt. of Mat. Facts., Ex. 32 at 35. Kove stated that this configuration "enable[s] each server in the server network to know which location server contains the location(s) of the desired data." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, K131 at 25. But Kove did not argue that this non-hierarchical configuration was necessary for every location server network, or that the non-hierarchical configuration must apply to location servers outside the network. And AWS has not adduced evidence establishing that the existence of hierarchical structures in other aspects of S3 or DDB negate the "non-hierarchical" claim limitation in a manner that renders the products noninfringing. See *Outside the Box Innovations, LLC v. Travel Caddy, Inc.*, 695 F.3d 1285, 1305 (Fed. Cir. 2012) (affirming summary judgment of noninfringement because additional element materially changed allegedly infringing object). Kove's infringement theory may, as AWS contends, rely on what AWS refers to as a single layer of S3 and DDB's hierarchy. See Def.'s Mot. for Summ. J. at 18. But the existence of hierarchical configurations outside that one layer does not defeat Kove's infringement claim. *SunTiger, Inc. v. Sci. Rsch. Funding Grp.*, 189 F.3d 1327, 1336 (Fed. Cir. 1999) ("If a claim reads merely on a part of an accused device, that is

enough for infringement.").

Kove's expert Goodrich contends that each group of two or more location servers within availability zones or "regions that share a namespace" constitutes "a system" of location servers. Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K54 ¶ 80. AWS instead describes the availability zones as "at least one level of hierarchy," which then "combine with lower levels" to create a hierarchical structure. Def.'s 2d Am. Infringement Contentions, dkt. no. 588, Ex. 2 at 90-91. AWS also describes each region as "a branch on a broader hierarchical tree." Def.'s Mot. for Summ. J. at 18. But as long as the location servers within an availability zone or region are arranged in a non-hierarchical configuration, the accused products may infringe upon Kove's patents even if those zones and/or regions are arranged hierarchically in relation to other components of S3 or DDB.

When there is "specific, plausible and detailed testimony by dueling expert witnesses," summary judgment is typically inappropriate. *Total Containment, Inc. v. Intelpro Corp.*, 217 F.3d 852, 852 (Fed. Cir. 1999). Drawing all reasonable inferences in Kove's favor, a reasonable juror could accept Kove's description of the accused products as well as Goodrich's testimony and conclude that S3 and DDB contain a plurality of location servers within the availability zones that are arranged in a non-hierarchical configuration and therefore infringe Kove's patents.

In his rebuttal report AWS's expert, Dr. Ananth Grama, asserts that DDB employs a hierarchical structure. Def.'s Stmt. of Mat. Facts, Ex. 8 ¶ 334-37. His conclusion is based on the DDB source code, which he contends demonstrates a "parent-child structure" within DDB's MNs. *Id.* Kove has moved to exclude the portions of Grama's

report that explain this "parent-child" relationship (paragraphs 336-337) on the ground that AWS failed to disclose this theory or its allegedly supporting source code in its noninfringement contentions. See Pl.'s Resp. to Def.'s Mot. for Summ. J. at 46-47. Kove argues that AWS's introduction of this theory was untimely and that Kove did not have an appropriate opportunity to address it.

AWS says that it put Kove on notice of its theory in its non-infringement contentions, but the citations it includes in this section of its reply brief do not support this.⁵ AWS also argues that Kove had access to the DDB source code prior to receiving Grama's rebuttal report and even cited this same source code in its own infringement contentions. See Def.'s Reply at 21. But simply having access to the DDB source code is insufficient to put Kove on notice of how AWS planned to use that source code to establish noninfringement. And AWS's descriptions of DDB as organized in a "hierarchical 'tree'" structure do not fully convey the parent-child theory that Dr. Grana describes in his report. The Court therefore grants Kove's motion to exclude Dr. Grama's testimony regarding the alleged "parent-child" structure among DDB's Metadata Nodes. See *Medline Indus., Inc. v. C.R. Bard, Inc.*, 511 F. Supp. 3d 883, 890 (N.D. Ill. 2021) ("[T]he proper remedy for the disclosure of a previously undisclosed

⁵ AWS cites "Dkt. 596 at 8" for the contention that "Amazon incorporated this theory into its non-infringement contentions at the first opportunity, over nine months ago," Def.'s Reply at 21. But page 8 of docket number 596, AWS's March 23, 2023 Motion for Leave to Amend its Final Invalidity Contentions, does not contain any language regarding DDB or a hierarchical structure. See Def.'s Mot. for Leave to Amend Final Invalidity Contentions at 8. AWS also cites "Ex. 95," with no accompanying page number, for a quote that it says it included in its contentions: "Kove cannot show how DDB satisfies this element, because it doesn't. DDB is organized as a hierarchical 'tree.'" Def.'s Reply at 21. But Exhibit 95 to AWS's Statement of Additional Material Facts does not include the quote AWS included in its Reply Brief. See Def.'s Stmt. of Add'l Mat. Facts, Ex. 95.

[invalidity or infringement] theory or argument in either party's expert report is preclusion.").

2. Willful infringement and enhanced damages

Under Section 284 of the Patent Act, courts are permitted to award "damages up to three times the amount found or assessed" for patent infringement cases. 35 U.S.C. § 284. "[T]he issue of punishment by enhancement is for the court and not the jury," *Eko Brands, LLC v. Adrian Rivera Maynez Enters., Inc.*, 946 F.3d 1367, 1378 (Fed. Cir. 2020), though a jury makes the underlying determination of willful infringement. The Supreme Court has noted that this enhanced damages punishment is "not to be meted out in a typical infringement case" but is instead "reserved for egregious cases typified by willful misconduct." *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 579 U.S. 93, 103, 106 (2016). Courts should consider "the particular circumstances of each case in deciding whether to award [enhanced] damages." *Id.* at 106; *SRI Int'l, Inc. v. Cisco Sys., Inc.*, 14 F.4th 1323, 1330 (Fed. Cir. 2021) ("Discretion remains with the district court to determine whether the conduct is sufficiently egregious to warrant enhanced damages.").

A patent holder can establish willfulness by proving, by a preponderance of evidence, that the defendant "had a specific intent to infringe at the time of the challenged conduct." *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 987 (Fed. Cir. 2021). "Knowledge of the asserted patent is necessary . . . for a finding of willfulness." *Id.* at 988.

Kove argues that a reasonable jury could find that AWS willfully infringed the Kove patents both before and after it filed suit. There is a split in authority among

district courts on the issue of whether knowledge of a patent gained from the infringement complaint can serve as knowledge of the patent in support of a post-suit infringement claim. See *ESCO Grp. LLC v. Deere & Co.*, No. CV 20-1679, 2023 WL 4199413, at *7-8 (D. Del. June 22, 2023) (collecting cases). In the absence of Federal Circuit guidance, this Court has concluded that the complaint can provide the required knowledge for a post-suit willful infringement claim. See *MG Freesites Ltd. v. ScorpCast LLC*, 651 F. Supp. 3d 744, 760-61 (D. Del. 2023) (Kennelly, J.). In alignment with this previously stated view, Kove may rely on the filing of the complaint to establish AWS's knowledge of infringement for the period following the filing of the lawsuit.

Turning to Kove's pre-suit willful infringement claim, it is undisputed that Kove did not send Amazon a letter or any other notice of potential infringement prior to filing the complaint in the instant case. AWS contends that it is entitled to summary judgment of no willful infringement⁶ because Kove has not presented evidence "that any Amazon employees relevant to this lawsuit, such as those involved with developing, managing, or selling the accused products, knew of Kove's patents-in-suit before this matter." Def.'s Mot. for Summ. J. at 30. Kove argues that a reasonable jury could find that AWS willfully infringed its patents.

AWS argues that it had no knowledge of Kove or its patents before Kove filed its complaint in this case. See Def.'s Stmt. of Mat. Facts ¶ 91. But Kove contends that

⁶ AWS also contends that it is entitled to summary judgment on enhanced damages because Kove did not directly address section 284 in its response brief and therefore waived opposition to AWS's enhanced damages argument. Def.'s Reply at 42-43. But "willfulness is a component of enhancement," *SRI Int'l, Inc. v. Cisco Sys., Inc.*, 14 F.4th 1323, 1330 (Fed. Cir. 2021). Kove's willfulness argument in its response brief is therefore sufficient to establish that it did not waive its section 284 claim.

Amazon's past patent applications support a finding that AWS had knowledge of the patents-at-issue years prior to this lawsuit.

For example, in August 2011, the USPTO issued an initial rejection of an Amazon patent application, finding that each claim of the Amazon patent was anticipated by Kove's '978 patent. Amazon responded to the USPTO's initial rejection of its application by cancelling 21 of the rejected claims and attempting to explain how the remaining claims were distinct from the '978 patent. In its response, Amazon stated that "[a]pplicants have evaluated the portions of [the '978 patent] cited in the Office Action, and indeed the entirety of [the '978 patent]." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K90 at ATI_KOVE_0000417. Dr. Sivasubramanian, the named inventor of this patent, "managed the development" of DDB. Def.'s Reply at 32; Def.'s Resp. Pl.'s Stmt, Mat. Facts ¶ 60. It is also undisputed that Amazon has cited to Kove's '170 patent over 200 times in past patent applications, and the '170 patent includes a claim of priority to the '640 patent application. Def.'s Resp. to Pl.'s Stmt. of Add'l Mat. Facts ¶ 58.

"[W]illfulness is an issue for the jury, not the district court." *Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1353 (Fed. Cir. 2018). And the factual dispute over whether AWS engineers had knowledge of the asserted patents prior to this instant case reflects that a genuine issue of material fact remains regarding whether AWS willfully infringed Kove's patents. *Abbott Lab'ys v. Grifols Diagnostic Sols. Inc.*, No. 19 C 6587, 2023 WL 6160182, at *23 (N.D. Ill. Sept. 20, 2023) ("The parties' differing views on the facts highlight that the question of willfulness remains one for the jury.").

For these reasons, AWS is not entitled to summary judgment on Kove's enhanced damages claim.

C. Kove's motion for summary judgment

Kove moves for summary judgment on AWS's 35 U.S.C. § 101 counterclaim and its defenses of double patenting, equitable estoppel, waiver, and inequitable conduct. Kove also contends in its motion that six of AWS's references do not qualify as prior art under 35 U.S.C. § 102.

1. Invalidity

A party challenging the validity of a patent has the burden of overcoming the presumption of validity found in 35 U.S.C. § 282. *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1359 (Fed. Cir. 2007). "That burden of proof never shifts to the patentee to prove validity." *Id.*

a. Section 101

AWS argues that the '640, '170 and '978 patents are invalid under 35 U.S.C. § 101 because they fail to claim patentable subject matter. The statute provides that an individual who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" may obtain a patent. 35 U.S.C. § 101. In *Alice Corporation Pty. Ltd. v. CLS Bank International*, 573 U.S. 208 (2014), the Supreme Court adopted a two-step test for determining patent eligibility under section 101. The first step asks whether the claims as a whole "are directed to" a "patent-ineligible concept[]," such as an abstract idea. *Alice*, 573 U.S. at 217-18. If, and only if, the claims are directed to a patent-ineligible concept, the court proceeds to step two, which requires consideration of "the elements

of each claim both individually and 'as an ordered combination' to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application." *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 79, (2012)).

The Federal Circuit has "routinely held software claims patent eligible under *Alice* step one when they are directed to improvements to the functionality of a computer or network platform itself." *Uniloc USA, Inc. v. LG Elecs. USA, Inc.*, 957 F.3d 1303, 1307 (Fed. Cir. 2020). If the court finds that the focus of the claim is a "specific and concrete technological advance" under *Alice* step one, the "inquiry ends and the claim is eligible." *ADASA Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 908 (Fed. Cir. 2022).

Judge Pallmeyer previously considered the eligibility of the patents at issue and rejected AWS's argument that the asserted claims were not directed to patent-eligible subject matter. See *Kove IO, Inc. v. Amazon Web Servs., Inc.*, 448 F. Supp. 3d 849 (N.D. Ill. 2020). AWS argued in its motion to dismiss—as it does in response to Kove's summary judgment motion—that the asserted claims are directed towards abstract ideas and lack an inventive concept that warrants patent eligibility. *Id.* at 2-12. The Court denied AWS's motion to dismiss, concluding that the three claims asserted at the time were distinguishable from previous cases where claims directed at generating or manipulating data were considered abstract. *Kove*, 448 F. Supp. 3d at 857, 864. Instead, the Court found that the asserted claims in Kove's patent were similar to those at issue in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016). In that case, the Federal Circuit held that the claims of two patents directed to computer database models were focused on a "specific asserted improvement in computer capabilities"

rather than an abstract idea "for which computers are invoked merely as a tool." *Enfish*, 822 F.3d at 1336. The Court applied *Enfish* to the asserted claims and held that the information in the patents' specifications, specifically the descriptions of how the claimed invention improved on conventional data retrieval systems, demonstrated that the claims were directed to an improvement in computer capabilities and therefore were not abstract. See *Kove*, 448 F. Supp. 3d at 859. After finding that the asserted claims were not directed to an abstract idea, the Court did not apply the second step of the *Alice* inquiry. *Id.* at 864.

Kove argues that it is entitled to summary judgment because the law of the case doctrine bars this Court from reconsidering the subject matter eligibility of the patents. "The authority of a district judge to reconsider a previous ruling in the same litigation . . . is governed by the doctrine of the law of the case." *Santamarina v. Sears, Roebuck & Co.*, 466 F.3d 570, 571-72 (7th Cir. 2006). "[T]he doctrine [of the law of the case] posits that when a court decides upon a rule of law, that decision should continue to govern the same issues in subsequent stages in the same case." *Christianson v. Colt Indus. Operating Corp.*, 486 U.S. 800, 815–16 (1988) (citation omitted). Application of this doctrine is discretionary, and a court may decline to follow the law of the case "if there is a compelling reason, such as a change in, or clarification of, law that makes clear that the earlier ruling was erroneous." *Santamarina*, 466 F.3d at 572.

AWS does not dispute that the issue of patent eligibility that it plans to argue at trial is identical to the issue it raised in its prior motion to dismiss. Instead, AWS argues that the Court should revisit its prior section 101 eligibility decision in light of various developments in the record. The Court finds these arguments unpersuasive.

Although a patent eligibility inquiry may include underlying factual issues, "[p]atent eligibility under 35 U.S.C. § 101 is ultimately an issue of law." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018). In particular, *Alice* step one is a purely legal inquiry. *CardioNet, LLC v. InfoBionic, Inc.*, 955 F.3d 1358, 1372 (Fed. Cir. 2020).

Because this Court did not proceed to the second step of the *Alice* inquiry in its previous section 101 analysis, its eligibility decision was a legal determination and thus should not be disturbed absent clear error or another compelling justification. Even in the sole case AWS relies on for its proposition that this Court should revisit its patent eligibility decision, that court clarified that it was reconsidering only step two of the *Alice* inquiry and acknowledged that "step one of the *Alice* analysis debatably answers a purely legal question." *Personalized Media Commc'ns, LLC v. Apple, Inc.*, No. 15-cv-1366, 2021 WL 2696561, at *2 n.4 (E.D. Tex. Jan. 29, 2021).

AWS cites the later claim construction order as a basis for revisiting the section 101 issue. Although the Federal Circuit has recognized that resolving claim construction disputes may be necessary for evaluating patent subject matter eligibility, "claim construction is not an inviolable prerequisite to a validity determination under § 101." *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1273 (Fed. Cir. 2012). And this Court's claim construction order did not materially impact its earlier Rule 12(b)(6) analysis, as the claims remain directed to a dynamic data retrieval system that includes "multiple location servers that organize location information based on a distributed hash table," a "redirect message" and other "specific improvements" in the operation of computer networks. *Kove IO, Inc.*, 448 F. Supp. 3d at 859-60.

AWS contends that the Court should revisit its eligibility decision due to additional developments in the record. For example, Kove is asserting fourteen additional claims that were not considered in the Court's order denying the motion to dismiss. But in finding that the claimed inventions were "aimed at improving computer network storage," the Court also considered the content of the patent specifications. See *Id.* at 861-64. Though Kove is asserting multiple new claims, these claims have the same specifications as the claims that were at issue at the time of the earlier section 101 eligibility inquiry.

AWS also directs the Court's attention to its experts' conclusions that the content of the asserted claim limitations is routine and conventional. Def.'s Resp. Pl.'s Mot. for Summ. J. at 45-46. But the alleged novelty of the asserted claims is irrelevant to the question of whether they are directed to an abstract idea. See *Diamond v. Diehr*, 450 U.S. 175, 188-89 (1981) ("The 'novelty' of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter."). And the Court need not consider testimony from AWS's experts, or any other extrinsic evidence, in evaluating whether the claims are directed towards patent eligible subject matter. See *CardioNet, LLC*, 955 F.3d at 1372 ("Alice step one presents a legal question that can be answered based on the intrinsic evidence.").

The application of the law of the case doctrine is discretionary. The Court finds that there are no changed circumstances or new facts in the record that warrant departing from the law of the case doctrine. The Court therefore grants Kove's motion for summary judgment on § 101 patent eligibility.

b. Double patenting

AWS contends that claims 3, 6, 10, 14, 17, 23, 24, and 30 of '978 patent are invalid for obviousness-type double patenting. Kove responds that AWS has not provided evidence to support its double-patenting claim and that the double patenting opinions of AWS's invalidity expert are inadmissible.

Obviousness-type double patenting is a judicially created doctrine meant to "prevent the extension of the term of a patent . . . by prohibiting the issuance of the claims in a second patent not patentably distinct from the claims of the first patent." *Eli Lilly & Co. v. Teva Parenteral Medicines, Inc.*, 689 F.3d 1368, 1376 (Fed. Cir. 2012) (quoting *In re Longi*, 759 F.2d 887, 892 (Fed. Cir. 1985)). "Under obviousness-type double patenting, a patent is invalid when it is merely an obvious variation of an invention disclosed and claimed in an earlier patent by the same inventor." *Georgia-Pac. Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1326 (Fed. Cir. 1999). To determine whether there is obviousness-type double patenting, a court performs a 2-step test. First, the court determines "the differences in the claims of the earlier and later patents." *Eli Lilly & Co. v. Teva Parenteral Medicines, Inc.*, 845 F.3d 1357, 1375 (Fed. Cir. 2017). Second, the court "determine[s] if the alleged infringer has proven by clear and convincing evidence that the claims are not patentably distinct." *Id.* "A later patent claim is not patentably distinct from an earlier claim if the later claim is obvious over, or anticipated by, the earlier claim." *Id.*

To support this conclusion, he created two comparison charts that include a column containing claim limitations of the '978 patent alongside a corresponding column with portions of claims and specifications of the '640 and '170 patents. See Pl.'s Resp.

to Def.'s Stmt. of Mat. Facts, Ex. K9; *Id.*, Ex. K10. Greene's comparison charts contain colored highlighting identifying the limitation language that Greene considers to be identical among the claims:

U.S. Patent No. '978 Patent Claims	'640 Patent Claims and Specification
[1 preamble]. A system having a plurality of location servers for managing location information and providing location information to location queries, the system comprising:	[18] A system for retrieving data location information for data stored in a distributed network, the system comprising . . . a client responsive to a data query to query a data location server for location information associated with the identifier string; a data location server network comprising a plurality of data location servers . . .

Greene Expert Invalidity Report, App'x E-1, dkt. no. 700-9 at 2 (highlighting in original). These color-coded charts, AWS contends, support Greene's opinion that "each and every claim limitation in the asserted '978 Patent claims is explicitly disclosed by the '640 Patent and '170 Patent." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 288; Def.'s Stmt. of Add'l Mat. Facts ¶ 20.

Kove has moved to strike paragraphs 278-289 and Appendix E of Greene's expert invalidity report, arguing that his opinions are deficient under Federal Rule of Civil Procedure 26. Rule 26 provides that for expert witness testimony, a written expert report must contain "a complete statement of all opinions the witness will express and the basis and reasons for them." FED. R. CIV. P. 26(a)(2)(B)(i). Kove contends that Greene's "conclusory opinions" regarding obviousness-type double patenting are inadequate disclosures that "leav[e] Kove without notice of Mr. Greene's actual opinions (if any) or his intended testimony at trial." Pl.'s Mot. for Summ. J. at 68.

In support of its motion to strike, Kove cites multiple cases where a court ruled an expert's patent obviousness opinions deficient under Rule 26. But in each of the cases that Kove cites, the court excluded the testimony of an expert who sought to provide evidence of statutory obviousness under 35 U.S.C. § 103, not non-statutory

obviousness-type double patenting. See *Innogenetics, N.V. v. Abbott Lab'ys*, 512 F.3d 1363, 1373 (Fed. Cir. 2008) (affirming district court's determination that expert report was insufficient to support jury finding of obviousness under § 103); *Align Tech., Inc. v. 3Shape A/S*, No. CV 17-1646, 2020 WL 4926164, at *9-10 (D. Del. Aug. 14, 2020) (striking expert's § 103 obviousness opinion as conclusory); *Finjan, Inc. v. Sophos, Inc.*, No. 14-CV-01197, 2016 WL 4560071, at *7 (N.D. Cal. Aug. 22, 2016) (same).

The obviousness-type double patenting analysis is "analogous to an obviousness analysis under 35 U.S.C. § 103." *Amgen Inc. v. F. Hoffman-La Roche Ltd*, 580 F.3d 1340, 1361 (Fed. Cir. 2009). But one key difference is that "double patenting does not require inquiry into a motivation to modify the prior art." *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 999 (Fed. Cir. 2009). Thus Greene's failure to describe "why a person of ordinary skill in the art would be motivated to combine the various limitations from different claims," Pl.'s Mot for Summ. J. at 68, does not render his obviousness-type double patenting opinions inadmissible.

Kove also objects to Greene's use of the '640 and '170 patent specifications in his comparison charts. "Because nonstatutory double patenting compares earlier and later claims, an earlier patent's disclosure is not available to show nonstatutory double patenting." *Geneva Pharms., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1385 (Fed. Cir. 2003). Generally, when performing an obviousness-type double patenting analysis, the earlier patent's specification is "considered only to the extent necessary to construe its claims." *Eli Lilly & Co.*, 689 F.3d at 1378–79. AWS is correct that there are exceptions to the general rule that limits obviousness-type double patenting analysis to the content of the claims. But none of the circumstances that gave rise to the

exceptions articulated in the cases AWS cited are present in this case.

For example, in *Sun Pharmaceutical Industries, Ltd. v. Eli Lilly & Co.*, 611 F.3d 1381 (Fed. Cir. 2010), the patentee developed an antiviral compound for treating cancer. After acquiring an initial patent that described the compound's potential cancer fighting utility in the specification, the patent holder then was issued a second patent with claims for methods of using the compound to treat cancer. *Id.* at 1383-84. The court held the second patent invalid for obviousness-type double patenting. It limited consideration of the earlier patent's specification to "the situation in which an earlier patent claims a compound, disclosing the utility of that compound in the specification, and a later patent claims a method of using that compound for a particular use described in the specification of the earlier patent." *Id.* at 1385. Similarly, in *Geneva Pharmaceuticals*, the patentee had patented methods of using a clavulanic acid composition to treat bacterial infections. *Geneva Pharms., Inc.*, 349 F.3d at 1383. The patentee subsequently obtained a patent that disclosed in the specification the utility of clavulanic acid compositions for treating antibiotic-resistant patients. *Id.* The Federal Circuit held the patent claims invalid for double patenting given its precedent recognizing that "a claim to a method of using a composition is not patentably distinct from an earlier claim to the identical composition in a patent disclosing the identical use." *Id.* at 1385-86.

Here, the exception to the general rule outlined in *Sun Pharmaceutical* and *Geneva Pharmaceuticals* does not apply because the '978 patent does not claim a method for a particular use that was disclosed in the specifications of the '640 and '170 patents. See *Eli Lilly & Co.*, 689 F.3d at 1379-80 (distinguishing *Sun Pharmaceutical*

and *Geneva Pharmaceuticals* in declining to apply exception to bar on use of specification in obviousness-type double patenting analysis). AWS asserts that Greene utilized the specifications of the prior patents to "show that Kove has repeatedly used the same language to describe its purported inventions." Def.'s Resp. to Pl.'s Mot. for Summ. J. at 54. Greene's inclusion of the specifications in his comparison table, however, appears to utilize them as prior art. For example, one of his tables includes a

U.S. Patent No. '978 Patent Claims	'170 Patent Claims and Specification
[30] The method of claim 17, wherein transferring a portion of the identifiers and associated locations to a second location server when a performance criterion of the first data location server reaches a predetermined performance limit further comprises monitoring the performance criterion and automatically transferring the portion of identifiers and associated locations when the first location server reaches the predetermined limit.	8. The system of claim 6, wherein each of a plurality of location servers in the network stores only a portion of the data location information. 13. The system of claim 9, wherein the location query identifying the desired entity comprises a unique identifier for the desired entity, and wherein the programming logic stored on the location server further comprises programming logic configured to apply an index function to the unique identifier to retrieve at least a portion of the locations associated with the unique identifier in the indexed location store. "As those skilled in the art will appreciate, the Transmission Control Protocol (TCP) is a connection-oriented protocol that is part of a universally implemented subset of the Internet Protocol (IP) suite. TCP provides reliable, bi-directional stream data transfer. TCP also implements adaptive congestion avoidance to ensure data transfer across a heterogeneous network with various link speeds and traffic levels." (Col. 11:55-61)

side-by-side comparison of claim 30 of the '978 patent and claim 8, claim 13 and the specification of the '170 patent:

Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K10 at 12 (highlighting in original).

Greene's highlighting directly maps the language of the '170 patent specification onto the language of the '978 patent claim. Furthermore, the portion of the '170 patent specification that AWS cites is describing a preferred embodiment of the invention, and claims are not confined to the features of a preferred embodiment. See *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1341 (Fed. Cir. 1999) ("An attribute of the preferred embodiment cannot be read into the claim as a limitation."). The Court agrees with Kove that Greene inappropriately used the patent specifications as prior art in his

obviousness-type double patenting analysis.

The other evidence AWS cites to support its obviousness-type double patenting argument employs an incorrect standard. For example, Greene contends that the patents "cover the same inventive concept" and "employ nearly the same language when describing the overview of the technology and patents at issue." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 288. These assertions may be relevant to an analysis of whether the '978 patent is invalid on other grounds. See *In re Goodman*, 11 F.3d 1046, 1052 (Fed. Cir. 1993) ("If the claimed inventions are identical in scope, the proper rejection is under 35 U.S.C. § 101 because an inventor is entitled to a single patent for an invention."). But the assertion that the patents cover the same technology or contain similar specification language does not demonstrate that the *claims* of the later patent are patently indistinct from the *claims* of the earlier patents. See *Phillips Petroleum Co. v. U.S. Steel Corp.*, 604 F. Supp. 555, 560 (D. Del. 1985) ("Patents which issue from co-pending applications may, however, overlap with respect to the information they disclose without necessarily resulting in double patenting.").

Greene also notes that Kove has asserted that certain claims of the '978 patent were "constructively reduced . . . to practice" based on the filing of the '640 patent. Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 289. "Constructive reduction to practice means a described and enabled anticipation under 35 U.S.C. 102(g)(1), in a patent application of the subject matter of a count." *Storer v. Clark*, 860 F.3d 1340, 1344 (Fed. Cir. 2017). Constructive reduction to practice and obviousness-type double patenting are two distinct legal doctrines, as reduction to practice is typically used to determine "priority of invention between two or more parties claiming the same patentable

invention." *Mycogen Plant Sci. v. Monsanto Co.*, 243 F.3d 1316, 1332 (Fed. Cir. 2001). And though obviousness-type double patenting necessitates evaluation of a patent's claims, constructive reduction to practice is evaluated based on the contents of a patent's disclosure. See *In re Lundak*, 773 F.2d 1216, 1220-23 (Fed. Cir. 1985) (concluding that patent specification met constructive reduction to practice requirements). AWS cites no legal authority for the proposition that a constructive reduction to practice renders a patent invalid due to obviousness-type double patenting. In sum, the Court agrees with Kove that the portions of Greene's expert invalidity report that rely on the specifications rather than the claims of the earlier patents, or address AWS's unsupported "constructive reduction to practice" argument, should be excluded and stricken.

Nevertheless, Greene's comparison chart and the portions of his report that appropriately address obviousness-type double patenting are admissible. Kove contends that Greene failed to analyze the differences between the claims as required by step one of the obviousness-type double patenting analysis. But district courts have recognized that similarities in language between claims are relevant in the obviousness-type double patenting analysis. See *Johnson Elec. Indus. Mfg., Ltd. v. Ametek, Inc.*, 850 F. Supp. 2d 342, 353 (D. Conn. 2006) ("The strikingly similar language between the two claims suggests that claim 2 of the '580 patent is obvious over claim 20 of the '843 patent."); *Bausch & Lomb Inc. v. SBH Holdings LLC*, No. CV 20-1463-GBW, 2023 WL 9016157, at *4 (D. Del. Dec. 29, 2023) (noting linguistic similarities between patent claims in obviousness-type double patenting analysis). And Greene's comparison chart conveys the basis for his double patenting opinion – namely, that he believes the claims

of the '978 patent disclose every limitation of the asserted claims of the '640 and '170 patents. AWS contends that Greene did not address differences between the claims in his expert report because, in his opinion, there are none. Def.'s Resp. to Pl.'s Mot. for Summ. J. at 53. The weight to be given his opinion is an issue for trial, not summary judgment.

AWS's invalidity contentions and Greene's expert report provide more than mere conclusory statements, and genuine disputes of material fact remain over whether or not the asserted claims of the '978 patent are invalid for obviousness-type double patenting. At trial, AWS will bear the burden of establishing invalidity on double patenting grounds. But as the party moving for summary judgment, Kove had the burden of proving the absence of a genuine issue for trial to support its motion. Because there is evidence in the record to support AWS's double patenting claim, Kove's is not entitled to summary judgment on the obviousness-type double patenting defense.

c. Prior art references

Novelty is a critical element of patentability. *In re Schoenwald*, 964 F.2d 1122, 1123 (Fed. Cir. 1992). Under Section 102 of the 1952 Patent Act,⁷ an individual is not entitled to a patent if the invention was anticipated by a prior invention. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Anticipation is "the disclosure in the prior art of a thing substantially identical with the claimed invention."

⁷ In 2011 Congress passed the Leahy-Smith America Invents Act (AIA), which amended 35 U.S.C. §102. *SNIPR Techs. Ltd. v. Rockefeller Univ.*, 72 F.4th 1372, 1373 (Fed. Cir. 2023). Because the patents-at-issue were filed before March 16, 2013, they are governed by the pre-AIA version of § 102. *Id.* at 1376.

Application of Schaumann, 572 F.2d 312, 317 (C.C.P.A. 1978) (citation omitted). "[T]he [prior art] reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990).

The ultimate question of anticipation is not at issue here. Rather, Kove seeks only a determination that multiple references that AWS relies on for its anticipation defense do not qualify as prior art under section 102. Kove also moves to strike Greene's opinions associated with these allegedly inappropriate references.

i. DNS/BIND

Kove and AWS disagree over which version of Domain Name System (DNS) AWS attempted to establish as "prior art" for its anticipation claims. DNS is a "distributed naming framework for internet resources." Pl.'s Stmt. of Mat. Facts ¶ 29. Berkeley Internet Name Domain (BIND) is an implementation of DNS. Kove contends that in its response brief, AWS vastly expanded the scope of one of its claimed prior art references by changing it from BIND 8.1 to DNS. AWS argues that it has always sought to establish DNS, not BIND 8.1, as the prior art reference upon which it relies to establish anticipation.

In its response to Kove's summary judgment motion, AWS states that its expert, Greene, opined that the DNS system, not BIND 8.1, is prior art under section 102(a), (b), and/or (f). Def.'s Resp. to Pl.'s Mot. for Summ. J. at 54-55. In his report, however, Greene initially states that his understanding is that "the DNS system is prior art" but then narrows the scope of this prior art by describing it as "[t]he DNS system (BIND version 8.1)." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 220. In its response

to Kove's statement of material facts, AWS asserts that "the BIND source code is used to establish the existence of a DNS system as prior art." Def.'s Resp. to Pl.'s Stmt. of Mat. Facts ¶ 36. But in another portion of its response, AWS admits Kove's assertion that "AWS alleges that one particular implementation—namely, BIND 8.1—is a prior art system that anticipates . . . the Asserted Claims." Def.'s Resp. to Pl.'s Stmt. of Mat. Facts ¶ 32. And in a March 13, 2023 email to Kove, AWS clarified that it did not seek to remove DNS from its contentions but that, instead, DNS would be relied upon as a "secondary reference" and to "provide evidence of the background knowledge and common sense of those of ordinary skill in that art," not that as a prior art reference in its own right. Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 2.

Ascertaining which version of DNS AWS seeks to assert as prior art is made more difficult because AWS does not provide a single piece of supporting documentation that comprehensively defines the DNS system. Instead, AWS presents four references that it claims, together, "describe the prior art DNS system": a 1998 book titled "DNS and BIND" (DNS & BIND), a 1987 "request for comments introducing domain style names and the domain name system" published by the Internet Engineering Task Force (RFC 1034), a 1999 paper titled "Distributed Web Caching System with Consistent Hashing" (Sherman) and another 1999 paper titled "Web Caching with Consistent Hashing" (Karger/Sherman). Def.'s Resp. to Pl.'s Mot. for Summ. J. at 55; Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 220; Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 4-6. These documents were authored by different parties and allegedly describe different components of the DNS system. And AWS concedes that the DNS & BIND book does not expressly mention BIND 8.1 and

that the publication of RFC 1034 predates the existence of BIND 8.1 by nearly a decade. Def.'s Resp. to Pl.'s Stmt. of Mat. Facts ¶¶ 46, 48. These admissions further obfuscate AWS's argument given that it stated in its invalidity claim chart that the "operation of [the BIND 8.1 version of DNS] is described" in all four documents. Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K43 at 1.

Kove further asserts that through these four references, AWS is improperly arguing anticipation based on a combination of references rather than a single prior art reference. AWS argues that the dispute over whether these four documents properly describe the DNS system as its expert claims is an issue for trial. But whether a reference may be relied on as prior art is a preliminary question to be decided by the court. *Structural Rubber Prod. Co. v. Park Rubber Co.*, 749 F.2d 707, 721–22 (Fed. Cir. 1984).

"[R]eferences cannot be combined for purposes of anticipation." *Ciba-Geigy Corp. v. Alza Corp.*, 68 F.3d 487 (Fed. Cir. 1995). The Federal Circuit has ruled, however, that additional references may be used to "confirm the contents of the allegedly anticipating reference," *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1335 (Fed. Cir. 2002), or to "reveal what it would have meant to one of ordinary skill at the time the invention was made." *Studiengesellschaft Kohle, m.b.H. v. Dart Indus., Inc.*, 726 F.2d 724, 726 (Fed. Cir. 1984).

AWS contends that the documents should be considered a single prior art reference because they all "describe the same DNS system" and demonstrate "what a person skilled in the art would have understood DNS to be" rather than "fill[ing] in gaps in the primary references." Def.'s Resp. to Pl.'s Mot. for Summ. J. at 55. AWS also

notes that the Federal Circuit has differentiated prior art from "extrinsic evidence used to support what is necessarily present in a prior art's teaching." *Monsanto Tech LLC v. E.I. DuPont de Nemours & Co.*, 878 F.3d 1336, 1345 (Fed. Cir. 2018). But as AWS acknowledges, the extrinsic evidence in *Monsanto* consisted solely of expert declarations that were "offered in support of the prior art already of record." *Id.*

In contrast, AWS is combining its references to establish the parameters of a single anticipatory prior art reference, which it interchangeably refers to as DNS or BIND 8.1. AWS's references were also authored at different times by different parties who had no involvement with the development of the prior art, which distinguishes them from those used in past cases in which a computer software system qualified as prior art based on testimony from the software developer, or a manual that was sold or shipped along with the software. See, e.g., *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1363 (Fed. Cir. 2001) (citing testimony from prior art system's developer in anticipation analysis); *Stamps.com Inc. v. Endicia, Inc.*, 437 F. App'x 897, 901 (Fed. Cir. 2011) (accepting software and accompanying user guide as prior art reference).

The Court finds that the case Kove cites in support of its argument, *Kyocera Wireless Corp. v. Int'l Trade Comm'n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008), is more analogous to the facts of this instant case. In *Kyocera*, the defendant introduced as prior art the GSM standard, a set of specifications for a particular mobile network. *Id.* at 1350. The GSM standard consisted of hundreds of individual specifications drafted by approximately ten different subgroups, each with its own title and separate page numbering. *Id.* at 1351. The Federal Circuit held that the GSM standard constituted "several prior art references with separate dates of creation" and therefore could not

operate as a single prior art reference. *Id.* at 1351. AWS attempts to distinguish *Kyocera* by noting that in that case, "the relevant standard was so voluminous and disparate that no one person had read it in its entirety." Def.'s Resp. Pl.'s Mot. for Summ. J. at 56. This distinction is immaterial. The primary question in *Kyocera* was not whether the references were too voluminous to be considered prior art but rather whether, taken together, they qualified as "a coherent whole document that can be assigned a single prior art date of creation." *Kyocera Wireless Corp.*, 545 F.3d at 1352.

To allow AWS to utilize its four references in the manner it seeks would enable an alleged infringer to identify a system that existed prior to the claimed invention, selectively choose supporting documentation that describes that system in the manner that most closely fits the claims of the asserted patent, and present a combination of those documents to establish the system as prior art. This would undermine section 102's clear mandate that the party seeking to invalidate a patent on anticipation grounds must demonstrate that a *single* prior art reference or printed publication anticipated the claimed invention. *See Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) ("[I]nvalidity by anticipation requires that the four corners of a single, prior art document describe every element of the claimed invention."); *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008) ("[A]nticipation requires all elements of a claim to be disclosed within a single reference.").

Additionally, AWS's expert does not appear to be using the references in the manner that AWS claims. For example, in its invalidity chart for the '640 patent, AWS cites both RFC1034 and DNS & BIND as evidence of anticipation of claim 17:

U.S. Patent No. 7,103,640	Domain Name System (DNS) and, for Claim 24, Karger '618/420
[17.a] a plurality of data repositories configured to store data, wherein the data is associated with a respective identifier string in each data repository;	If this claim language is interpreted to cover the Accused Products, as Kove appears to contend, then DNS discloses this element, for example, as described below.
	"We should be able to use names to retrieve host addresses, mailbox data, and other as yet undetermined information. All data associated with a name is tagged with a type, and queries can be limited to a single type." (RFC1034, 3.) The name space is "used for hosts, mailboxes, etc." (<i>Id.</i>, 9). "A convention for mapping between object names and domain names [is needed as] [t]his describes how information about an object is accessed." (<i>Id.</i>) "The mailbox HOSTMASTER@SRI-NIC.ARPA is represented as a domain name by HOSTMASTER.SRI-NIC.ARPA." (<i>Id.</i>, 9-10.) See also Paul Albitz and Cricket Liu, DNS and BIND, O'Reilly & Associates, Inc., 3rd ed. 1998: "Every domain has a unique name." (p. 5, see also 7.) "Each host on a network has a domain name, which points to information about the host." (p. 6.) "[A] domain name uniquely identifies a single node in the tree." (p. 13.) "The hosts are ... represented by domain names. ... Domain names at the leaves of the tree generally represent individual hosts, and they may point to network addresses, hardware information, and mail routing information. Domain names in the interior of the tree can name a host <i>and</i> can point to information about the domain. Interior domain names ... can represent both the domain that they correspond to and a particular host on the network. For example, <i>hp.com</i> is both the name of the Hewlett-Packard Company's domain and the domain name of a host that runs HP's main web server." (pp. 15-16, see also 19-20.)

Pl.'s Stmt. of Mat. Facts, Ex. K45 at 2-3.

The inclusion of a block quote from DNS & BIND, with no accompanying analysis, sheds no light on how a POSITA would have understood the version of DNS or BIND 8.1 that AWS asserts as the prior art reference. And given that the authors of DNS & BIND suggest that the intended audience for the book includes those who have no knowledge of DNS or BIND, its utility as a tool for understanding the perspective of a POSITA is limited. See Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K98 at x-xi (noting that most readers of the book will not be DNS experts). In addition, Greene's opinion regarding how a POSITA would understand DNS at the time of the invention cannot be used to prove that the prior art includes a claim limitation that is missing from the other references. See *Structural Rubber Prod. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed. Cir. 1984) (rejecting party's attempt to use knowledge of one skilled in the art or additional reference to supply missing claim limitation). This court finds that the

combination of AWS's DNS/BIND 8.1 references constitute an improper attempt to "combine the teachings of the references to build an anticipation [defense]." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1335 (Fed. Cir. 2002) (quoting *Studiengesellschaft Kohle, m.b.H. v. Dart Indus., Inc.*, 726 F.2d 724, 727 (Fed. Cir. 1984)).

As the nonmoving party, AWS receives the benefit of having reasonable inferences resolved in its favor for purposes of summary judgment. But this District's Local Patent Rules require meaningful disclosure of the defendant's defenses. *Wimo Labs LLC v. Polyconcept N.A, Inc.*, 358 F. Supp. 3d 761, 763 (N.D. Ill. 2019). "The Rules were not intended to create or tolerate clever loopholes." *Id.*

AWS has repeatedly expressly identified the BIND 8.1 version of DNS as the prior art reference. For example, in its Fifth and Final Amended Invalidity Contentions AWS listed "Domain Name System (DNS) as described in the next section" among twenty-five prior art references. Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 6. In the referenced section, AWS stated that "BIND 8.1, a prior art Domain Name System (DNS) implementation anticipates and/or renders obvious claims of the Asserted Patents." Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 7. Furthermore, in the invalidity charts appendaged to its final invalidity contentions, AWS asserted that claims 17 and 18 of the '640 patents and claims 6, 8 and 15 of the '170 patent "are anticipated by . . . the BIND 8.1 version of DNS." See Pl.'s Stmt. of Mat. Facts, Ex. K45 at 1; *Id.*, Ex. K44 at 1. AWS cannot circumvent its duty of meaningful disclosure by now claiming that DNS, not BIND 8.1, is the prior art reference it wishes to invoke. And because it did not respond to Kove's arguments regarding the deficiency of

BIND 8.1 as a prior art reference in its reply brief, AWS has forfeited any challenge to Kove's motion on this point. See *Nichols v. Mich. City Plant Planning Dep't*, 755 F.3d 594, 600 (7th Cir. 2014) ("The non-moving party waives any arguments that were not raised in its response to the moving party's motion for summary judgment.").

For these reasons, the Court finds that DNS and BIND 8.1 do not qualify as prior art references for purposes of AWS's anticipation defense. The Court therefore grants Kove's motion to exclude Greene's invalidity opinions regarding DNS and BIND 8.1 as prior art.

ii. Cache Resolver

Kove also objects to AWS's use of the Cache Resolver system as a prior art reference. But AWS's supporting references for the Cache Resolver system do not suffer from the same or similar deficiencies as the DNS/BIND 8.1 references. AWS relies on two documents, Sherman and Karger/Sherman, to define the Cache Resolver System. Kove agrees that the "are contemporaneous, share common authorship, and describe a system by that name." Pl.'s Reply at 76. And unlike the DNS/BIND 8.1 system, AWS clearly disclosed Cache Resolver as a prior art reference. The Court finds that Cache Resolver is a proper prior art reference under section 102 and that the Sherman and Karger/Sherman references can be used to "confirm the contents" of the Cache Resolver system. *Teleflex, Inc.*, 299 F.3d at 1335.

Kove also moves for the exclusion of Greene's invalidity opinions regarding Cache Resolver. Expert testimony on this point is allowed only to the extent that it "does not go beyond explaining what the [prior art] reference would have meant to those skilled in the art" at the time. *Ciba-Geigy Corp.*, 68 F.3d at 487.

Greene opines, with no supporting citation or explanation, that "[a]ll of the features and functionality of DNS are inherent to systems using DNS," including Cache Resolver. Pl.'s Resp. Def.'s Stmt. Mat. Facts, Ex. K42 ¶ 230. AWS argues that, because the Cache Resolver "inherently discloses the DNS system," Greene should be able to rely on the DNS/BIND 8.1 references to define the Cache Resolver System. Def.'s Resp. Pl.'s Mot. Summ. J at 56. Extrinsic evidence may be used to prove that the prior art inherently discloses the claim limitation, not that the prior art references inherently disclose each other's contents. *Cont'l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). And resolution of disputed facts regarding inherency are inappropriate for summary judgment. *Id.* at 1269. Greene's opinions regarding DNS will be admitted to the extent that they demonstrate that a claim limitation not expressly disclosed is inherent to the Cache Resolver, but the DNS references cannot be used to expand the scope of the Cache Resolver as a prior art reference.

iii. Boukobza, Karger '618 and Karger '420 patents

Kove contends that it is entitled to summary judgment on the claim that U.S. Patent No. 6,122,664 (Boukobza), U.S. Patent No. 6,430,618 (Karger '618) and U.S. Patent No. 6,553,420 (Karger '420) do not qualify as prior art under sections 102(a) or (b). In his expert invalidity report, Dr. Greene opined that these patents were prior art because their filing dates precede the priority dates of the asserted patents by more than one year. Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 204. Kove argues that to qualify as prior art, the patents' *issuance* dates, not the filing dates, must precede the priority dates of the Kove patents.

For the purposes of sections 102(a) and (b), a patent is presumed to be invented as of its filing date and patented as of its issuance date. See *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996) (noting that patent holder's evidence was sufficient to overcome presumption of filing date as date of invention). Patents issued from a chain of continuation and continuation-in-part applications may receive the benefit of the filing of an earlier application by claiming priority to the filing date of the original application. *Transco Prod. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 556 (Fed. Cir. 1994). For purposes of section 102(f), "the party asserting invalidity must prove both prior conception of the invention by another and communication of that conception to the patentee." *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1576 (Fed. Cir. 1997). Therefore, to qualify as prior art under sections 102(a), (b) or (f), a patent must have been issued prior to the priority date of the patents in suit.

Boukobza was issued on September 19, 2000. Karger '618 and Karger '420 were issued on August 6, 2022 and April 22, 2003, respectively. AWS does not dispute that the priority dates of the asserted patents precede the issuance dates of the Boukobza, Karger '618 and Karger '420 patents. Def.'s Resp. to Pl's Stmt. of Mat. Facts ¶¶ 64, 66. Because the Boukobza, Karger '618 and Karger '420 patents were issued after the priority dates of the Kove patents, they cannot be prior art under sections 102(a) or (b). And if AWS contends that the issue of the Boukobza, Karger '618 and Karger '420 patents communicated the allegedly anticipated invention to the inventors of the patent-at-issue, then the patents cannot serve as prior art under section 102(f).

AWS attempts to rescue its anticipation defense regarding the Boukobza, Karger '618 and Karger '420 patents by arguing that its invalidity contentions are sufficient to

support an argument that the patents are invalid under section 102(e). The operative date for a prior art reference under section 102(e) is the date of "application," i.e. the filing date of the patent. See 35 U.S.C. § 102(e)(2). The Boukobza patent application was filed on June 27, 1997, the Karger '618 patent application was filed on March 13, 1998, and the Karger '420 patent application was filed on June 2, 1998. Def.'s Stmt. Add'l Mat. Facts ¶¶ 26-29. Kove does not claim a date of invention for its patents earlier than its priority dates of October 28, 1999 or June 2, 2000. The facts in the record are sufficient to establish that Boukobza, Karger '618 and Karger '420 patents may qualify as prior art under section 102(e).

Kove argues that AWS's reliance on section 102(e) as a ground for invalidity based on anticipation amounts to an unauthorized amendment of its final invalidity contentions. Greene did not include section 102(e) in his expert invalidity report, but AWS contends that it is not limited to the opinions of its expert witness. AWS also failed, however, to include section 102(e) as a basis for invalidity in its final invalidity contentions. In its invalidity charts, AWS asserted that "Karger '618/420 is prior art under pre-AIA 35 U.S.C. § 102(a), (b), and/or (f), e.g." Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 392. AWS also contended that the Boukobza patent is "prior art under pre-AIA 35 U.S.C. § 102(a), (b), and/or (f)." *Id.* at 518

AWS did not expressly include section 102(e) in its invalidity arguments regarding these three prior art references, but the references were included in the list of prior art items that AWS alleged "either anticipate or render obvious" the patents-in-suit. Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 4-6. Local Patent Rule (LPR) 2.3(b) requires a party asserting invalidity to include in its invalidity contentions "a

detailed statement of whether it allegedly anticipates or renders obvious each asserted claim" and a chart identifying where specifically in each alleged item of prior art each element of each asserted claim is found" for each prior art reference. N.D. ILL. LOCAL PATENT R. 2.3. AWS has complied with the LPR requirements for prior art references in this instance. Kove has not identified a provision in the Local Patent Rules that requires a party to identify the specific provisions within a statute upon which it plans to rely for its anticipation claims, and "limitations that do not exist should not be engrafted onto a statute or rule." *Wimo Labs LLC*, 358 F. Supp. 3d at 766 (citing *Hart v. United States*, 910 F.2d 815, 817 (Fed. Cir. 1990)). This Court concludes that AWS may rely on the Boukobza, Karger '618 and Karger '420 references as prior art for purposes of a section 102(e) defense.

iv. Steen

AWS asserts as prior art an article titled "Locating Objects in Wide-Area Systems" (Steen). Def.'s Final Am. Invalidity Contentions, dkt. no. 596-A at 6. Marteen van Steen is the lead author of the article, which was published in IEEE Communications Magazine. AWS argues that Steen qualifies as a printed publication under section 102 and therefore can be used as prior art.

To qualify as a "printed publication" under § 102, a prior art reference must have been made "publicly accessible." *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (quoting *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989)). To be considered publicly accessible, the prior art reference must have been "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter

or art exercising reasonable diligence, can locate it." *Kyocera Wireless Corp.*, 545 F.3d at 1350.

AWS alleges that the face of the document, an archived table of contents from the January 1998 edition of IEEE Communications Magazine, and citations to the article by four other papers demonstrates that the article was published in 1998 and publicly accessible at the time. Def.'s Resp. to Pl.'s Mot. for Summ. J. at 58-59. Kove argues that no reasonable jury could find that the Steen article was publicly accessible, but this argument is unpersuasive.

Whether a prior art reference is publicly accessible is a question of fact. *Jazz Pharms., Inc. v. Amneal Pharms., LLC*, 895 F.3d 1347, 1356 (Fed. Cir. 2018). Kove has provided no evidence to counter the date on the face of the article, table of contents or academic citations but instead notes only AWS's failure to provide specific evidence of factors that have been used to demonstrate public accessibility in the past, such as the feasibility of indexing and other research tools to locate the reference. Pl.'s Reply at 16. But the case law regarding public accessibility is not as narrow as Kove suggests. See *GoPro, Inc. v. Contour IP Holding LLC*, 908 F.3d 690, 693 (Fed. Cir. 2018) ("We have interpreted § 102 broadly, finding that even relatively obscure documents qualify as prior art so long as the relevant public has a means of accessing them."); *In re Lister*, 583 F.3d at 1312 ("Neither cataloging nor indexing is a necessary condition for a reference to be publicly accessible."). The date on the face of the article and the table of contents are evidence of the article's publication date, and AWS indicates it intends to use the academic citations to establish that interested members of the relevant public could locate the Steen article. Based on the evidence in the record, the Court cannot

conclude that no reasonable juror could find in AWS's favor. Kove's objections at best demonstrate that questions of fact remain regarding the public accessibility of the Steen article. Thus Kove is not entitled to a determination on summary judgment that the article cannot qualify as a prior art reference.

In conclusion, this Court holds that DNS/BIND 8.1 may not be used as prior art references; Cache Resolver qualifies as a prior art reference under section 102; and the Boukobza patent, Karger '618 patent and Karger '420 patents qualify as prior art references under section 102(e).

2. Equitable defenses

Kove also seeks summary judgment on AWS's defenses of equitable estoppel, waiver, and inequitable conduct. AWS contends that a ruling on its equitable defenses are not appropriate at the summary judgment stage. But courts in this district have considered summary judgment motions on these equitable defenses, and the Federal Circuit has affirmed grants of summary judgment motions on such defenses. *See, e.g., Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336 (Fed. Cir. 2017) (affirming district court's grant of patentee's summary judgment motion on inequitable conduct defense); *Robertson Transformer Co. v. Gen. Elec. Co.*, 149 F. Supp. 3d 919, 934 (N.D. Ill. 2015), *opinion corrected*, 191 F. Supp. 3d 826 (N.D. Ill. 2016) (granting patentee's summary judgment motion on equitable estoppel and waiver defenses). The Court finds that consideration of Kove's summary judgment request is appropriate at this stage.

a. Equitable estoppel and waiver

Equitable estoppel is a defense that acts as a complete bar to patent

infringement. *John Bean Techs. Corp. v. Morris & Assocs., Inc.*, 887 F.3d 1322, 1327 (Fed. Cir. 2018). The three elements that the defendant must prove to establish equitable estoppel are:

(1) misleading conduct, which may include not only statements and actions but silence and inaction, leading another to reasonably infer that rights will not be asserted against it; (2) reliance upon this conduct; and (3) due to this reliance, material prejudice if the delayed assertion of such rights is permitted.

Mabus v. Gen. Dynamics C4 Sys., Inc., 633 F.3d 1356, 1359 (Fed. Cir. 2011) (quoting *Lincoln Logs Ltd. v. Lincoln Pre-Cut Log Homes, Inc.*, 971 F.2d 732, 734 (Fed. Cir. 1992)).

The first element, misleading conduct, "occurs when the alleged infringer is aware of the patentee or its patents, and knows or can reasonably infer that the patentee has known of the allegedly infringing activities for some time." *High Point SARL v. Sprint Nextel Corp.*, 817 F.3d 1325, 1330 (Fed. Cir. 2016). Misleading conduct can include "statements, action, inaction, or silence where there was an obligation to speak." *John Bean Techs. Corp.*, 887 F.3d at 1327. When the alleged infringer attempts to establish misleading conduct by silence alone, "mere silence must be accompanied by some *other* factor which indicates that the silence was sufficiently misleading as to amount to bad faith." *Id.* (quoting *Hemstreet v. Comput. Entry Sys. Corp.*, 972 F.2d 1290, 1295 (Fed. Cir. 1992)).

AWS contends that Kove misled AWS by not raising potential infringement concerns during communications between the companies that took place in 2017 and 2018. During his deposition, Overton testified that he never sent a potential infringement notice to AWS and was not aware of any other Kove employees who had done so. Def.'s Stmt. of Mat. Facts, Ex. 75 at 116:16-117:15; *Id.* at 324:17-326:4.

Overton also acknowledged that an email he sent to an Amazon employee during communications over the sale of XFM contained a proposal stating that "Amazon and Kove could offer additional 10x-50x performance uptick to" multiple Amazon products, including DDB. Def.'s Stmt. of Mat. Facts, Ex. 75 at 297:11-298:9; *id.*, Ex. 77 at KOV_00164170.

In cases in which courts have determined that the patentee's silence was misleading, the patentee's conduct typically involved a threat of litigation or an express objection to the allegedly infringing activities followed by years of silence. *Ferring B.V. v. Allergan, Inc.*, 980 F.3d 841, 853 (Fed. Cir. 2020). This set of facts is not always required for an equitable estoppel finding. *ABB Robotics, Inc. v. GMFanuc Robotics Corp.*, 52 F.3d 1062, 1064 (Fed. Cir. 1995). Nevertheless, the absence of evidence that Kove threatened an infringement action or raised a particular objection to the accused products significantly reduces the likelihood that a reasonable juror could infer that Kove's silence misled AWS.

In response to Kove's cross-motion for summary judgment, AWS notes that the parties dispute whether Kove's failure to mention the asserted patents during the XFM sale negotiations was intentional. But intentional or not, silence can give rise to estoppel only if the patentee had a "clear duty to speak" or if its continued silence "reenforces the defendant's inference from the plaintiff's known acquiescence that the defendant will be unmolested." *A.C. Aukerman Co. v. R.L. Chaides Const. Co.*, 960 F.2d 1020, 1029 (Fed. Cir. 1992) (en banc) (*abrogated in part by SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC*, 137 S. Ct. 954 (2017)). AWS has not adduced evidence that Kove breached any duty to disclose the asserted patents amid

negotiations for the sale of an unrelated product. *See R2 Med. Sys., Inc. v. Katecho, Inc.*, 931 F. Supp. 1397, 1417-18 (N.D. Ill. 1996) (holding patentee's failure to raise potential infringement claim amid communications over safety concerns was not misleading conduct). And notably, AWS does not attempt to establish that it was aware of the asserted patents to support its equitable estoppel defense. In fact, to advance its argument that this Court should grant summary judgment of no willful infringement, AWS strongly contests Kove's allegation that it had any knowledge of the asserted patents prior to filing this lawsuit. Def.'s Mot. for Summ. J. at 30 ("And there's no evidence that any Amazon employees relevant to this lawsuit . . . knew of Kove's patents-in-suit before this matter.").

Even were the Court to find a genuine factual dispute regarding whether Kove's alleged silence was misleading, AWS still cannot survive summary judgment on its equitable estoppel defense because it has not adduced evidence of reliance or material prejudice. AWS argues that it "could have implemented a variety of non-infringing alternatives" if Kove had alleged infringement earlier. Def.'s Stmt. of Add'l Mat. Facts ¶ 12. But on reliance, the relevant question is not whether AWS would have acted differently if it was aware of the possibility of infringement action. Rather, the question is whether AWS relied upon Kove's conduct in deciding to develop the accused products in their current forms rather than pursue these non-infringing alternatives. *See Hemstreet v. Computer Entry Sys. Corp.*, 972 F.2d 1290, 1294 (Fed. Cir. 1992) (reversing summary judgment where alleged infringer had failed to establish its actions were taken in reliance upon patentee's conduct). There is no evidence in the record to support the conclusion that AWS took into account Kove's silence "in connection with

taking some action." *Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1311 (Fed. Cir. 2010) (citation omitted). Consequently, no reasonable juror could find that any actions taken regarding the accused products were taken due to its belief that the asserted patents would not be enforced. See *A.C. Aukerman Co.*, 960 F.2d at 1043 (noting that alleged infringer's ignorance of asserted patents undermined reliance claim).

Similarly, AWS fails to produce or identify evidence that creates a genuine factual dispute regarding whether it suffered material prejudice due to Kove's silence and/or inaction. Prejudice may consist of a change of economic position or a loss of evidence. *Id.* But AWS has not suggested that it suffered economic or evidentiary harm due to Kove's conduct. At best, AWS has offered evidence that if it had known that Kove might sue for infringement, AWS would have pursued alternate design options. But investment in the development of the allegedly infringing product is insufficient to demonstrate material prejudice. *Hemstreet*, 972 F.2d at 1294.

AWS relies upon the same set of operative facts to support its waiver defense as it did for its equitable estoppel defense. Sustaining a waiver defense requires "clear and convincing evidence that '[the patentee's] conduct was so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such right has been relinquished.'" *Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1348 (Fed. Cir. 2011) (alteration in original) (quoting *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1019 (Fed.Cir.2008)). The only conduct AWS points to is Kove's silence throughout the XFM sale negotiations. But AWS cites no legal authority to support the proposition that silence alone is sufficient to induce an alleged infringer to believe that

the patentee is relinquishing its infringement enforcement rights.

Even drawing all reasonable inferences from the underlying facts in the light most favorable to AWS, no reasonable factfinder could rule in AWS's favor on its equitable estoppel or waiver defenses. This Court therefore grants Kove's motion for summary judgment on AWS's defenses of equitable estoppel and waiver.

b. Inequitable conduct

AWS asserted an inequitable conduct counterclaim against Kove, arguing that Overton, the inventor, failed to disclose material prior art to the USPTO during the prosecution of the asserted patents. Specifically, AWS alleges that a 1997 article by David Karger entitled " Consistent Hashing and Random Trees: Distributed Caching Protocols for Relieving Hot Spots on the World Wide Web" was material to the approval of the asserted patents, and that Dr. Overton was aware of the article at the time the patent applications were submitted but deliberately did not disclose it to the USPTO. Kove contends that AWS has not presented sufficient evidence to permit a reasonable finding in its favor regarding inequitable conduct.

"Inequitable conduct is an equitable defense to patent infringement that, if proved, bars enforcement of a patent." *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1285 (Fed. Cir. 2011). A patent applicant has engaged in inequitable conduct when the applicant breaches its duty of candor, good faith and honesty to the PTO. *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1342 (Fed. Cir. 2005). This breach of duty occurs when the patent applicant "(1) misrepresented or omitted information material to patentability, and (2) did so with specific intent to mislead or deceive the PTO." *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1344

(Fed. Cir. 2013) (quoting *In re Rosuvastatin Calcium Patent Litig.*, 703 F.3d 511, 519 (Fed. Cir. 2012)). As the party asserting inequitable conduct, AWS bears the burden of showing by "clear and convincing evidence" that the patent applicant "knew of the reference, knew that it was material, and made a deliberate decision to withhold it." *Therasense*, 649 F.3d at 1290. In the absence of direct evidence, a court may rely on indirect and circumstantial evidence to infer intent to deceive. *Id.*

Here, AWS points to two pieces of circumstantial evidence that it contends show that at least one of the inventors knew of the prior art reference. First, AWS produced metadata that it asserts demonstrates that Dr. Overton saved a copy of the Karger article to his computer as early as January 1999. During his deposition, Overton acknowledged that the metadata indicates that the document was created on January 3, 1999 and that he was the custodian of that document. Pl.'s Stmt. of Mat. Facts, Ex. 85 at 709:9-710:15. Second, AWS points to a 2005 letter Overton drafted to an investor. In the letter, Overton assured the investor that the hash table technology described in the Kove patents "predates al [sic] the MIT and Stanford research" Def.'s Stmt. of Add'l Mat. Facts, Ex. 91 at 2. AWS asserts that Overton's mention of "MIT and Stanford research" is an indirect reference to the research of Karger, who was an MIT professor at the time. Def.'s Resp. to Pl.'s Mot. for Summ. J. at 49.

Kove disputes AWS's characterization of the metadata, noting that the date that the document was created does not prove that Overton possessed the document on that date. And Kove disputes that Overton's mention of "MIT and Stanford research" can be construed as a reference to the Karger article. Kove's expert also testified that he was uncertain if the Karger article "would ris[e] to the level of something that just

would be known to a person of ordinary skill in the art generally." Pl.'s Resp. to Def.'s Stmt. of Add'l Mat. Facts ¶ 17. Given the divergent interpretations of the metadata and the letter, as well as the competing expert testimony, there is an issue of fact as to whether Overton knew of the Dr. Karger article at the time of the prosecution of the asserted patents.

Next, AWS has the burden of establishing that Overton was aware of the Karger article's materiality. A prior art reference is material if "in the absence of the withholding or misrepresentation," the USPTO's knowledge of the reference "would have prevented a patent claim from issuing." *Ohio Willow Wood Co.*, 735 F.3d at 1345.

To demonstrate knowledge of materiality, AWS relies on Greene's expert invalidity report. Greene opined that "a POSITA at this time would have considered this article highly relevant to the purported invention described in the Asserted Patents." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts ¶ 232. But after briefly reviewing the Karger article, Overton testified that he didn't consider the reference "germane" to the asserted patents because the article described caching, and one of the critical components of Kove's patented technology was the *elimination* of caching. *Id.* at 732:14-733:12. The speculation of the party's respective expert witnesses shed little, if any, light on Overton's knowledge of materiality at the relevant time. But, drawing all reasonable inferences in favor of AWS, the 2005 letter may be understood to suggest that Overton was aware of similarities between the technology described in the Karger article and the asserted patents. His testimony that he considered the Karger research "very different" gives rise to a genuine factual dispute regarding whether he knew the reference was material. See Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, K37 at 717:15-20.

Neither side presents direct evidence of but-for materiality, but AWS directs the court to the testimony of its expert witness. Greene opined that "[i]n [his] view, this article and Karger's work at MIT are material to the subject matter of the applications that became the Asserted Patents." Pl.'s Resp. to Def.'s Stmt. of Mat. Facts, Ex. K42 ¶ 231. Kove points to no contradictory evidence regarding materiality, and thus it has not shown the absence of a genuine dispute of material fact on this element.

Kove is correct that for AWS to prevail on its inequitable conduct defense, "specific intent to deceive must be the single most reasonable inference able to be drawn from the evidence." *Therasense*, 649 F.3d at 1290. But in *Therasense*, the Federal Circuit was setting forth the standard for proving inequitable conduct at trial, not at the summary judgment stage.

Kove cites *Baxter International, Inc. v. CareFusion Corp.*, No. 15 C 9986, 2022 WL 981115 (N.D. Ill. Mar. 31, 2022), for the proposition that a court must grant summary judgment in its favor if a reasonable jury would not be *required* to find specific intent to deceive. See Pl.'s Reply at 7. But some district courts have cast doubt on the proposition that, at the summary judgment stage, a nonmovant must offer evidence that would permit a reasonable finding that deceptive intent is the single most reasonable inference. See, e.g., *Sysmex Corp. v. Beckman Coulter, Inc.*, No. CV 19-1642-JFB, 2022 WL 1503987, at *4 (D. Del. May 6, 2022) ("So [nonmovant] should not be required to prove its case now—i.e., it should not have to actually demonstrate that deceptive intent is the single most reasonable inference."); *Sprint Commc'ns Co. LP v. Charter Commc'ns, Inc.*, No. CV 17-1734-RGA, 2021 WL 982728, at *4 (D. Del. Mar. 16, 2021) (denying plaintiff's motion for summary judgment because genuine issues of material

fact remained regarding specific intent to deceive).

The Court concludes that at this stage, AWS's burden is not as high as Kove contends. A reasonable factfinder could conclude that specific intent to deceive is the single most reasonable inference to draw from Overton's conduct. Thus Kove is not entitled to summary judgment on the inequitable conduct defense.

Conclusion

For the foregoing reasons, the Court grants the defendant's motion for summary judgment in part and denies it in part [dkt. no. 686]. The Court allows the defendant's request for further claim construction, but only to the extent set out in the body of this opinion; denies the defendant's motion for summary judgment of non-infringement regarding the plaintiff's '640, '170 and '978 patents as well as on the question of willful infringement. The Court denies the defendant's motion to strike expert Goodrich's infringement analysis regarding hierarchical topologies. The Court grants-in part and denies-in part the plaintiffs' cross-motion for summary judgment [dkt. no. 699]. Specifically, the Court grants summary judgment for the plaintiff on the defenses of section 101 patent ineligibility, equitable estoppel, and waiver, as well as on the invalidity contentions relying on the "DNS" prior art reference; denies the plaintiff's motion for summary judgment on the defenses of inequitable conduct and double patenting; and grants the plaintiff's motion to strike expert Grama's "parent-child" hierarchical theory and expert Greene's double patenting opinions that rely on the patent specifications as prior art. The case is set for a telephonic status hearing on February 8, 2024 at 9:20 a.m. to discuss reasonable time limits for the jury trial set for April 1, 2024 and the schedule and other details for filing motions *in limine* and the final

pretrial order. The following call-in number will be used: 888-684-8852, access code 746-1053.

Date: February 6, 2024


MATTHEW F. KENNELLY
United States District Judge