

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
Richmond Division

LIMELIGHT NETWORKS, INC.,  
Plaintiff,

v.

Civil Action No. 3:15-cv-720-JAG

XO COMMUNICATIONS, LLC  
and AKAMAI TECHNOLOGIES INC.,  
Defendants.

**OPINION**

In this patent litigation, the defendant, Akamai Technologies, Inc., (“Akamai”) filed a motion *in limine* to exclude the plaintiff’s expert testimony regarding the interpretation of the term “neighboring server” in Limelight’s U.S. Patent No. 8,683,002 (the “‘002 Patent”) and also moved for summary judgment on non-infringement due to the Patent and Trademark Appeals Board’s (“PTAB”) interpretation of the term “second values” in Limelight’s U.S. Patent No. 8,750,155 (the “‘155 Patent”). The parties briefed the issues and the Court held a hearing on December 1, 2017, on the motions and the parties’ proposed claim constructions. For the ‘002 Patent, the Court rejects Akamai’s proposed construction of the term “neighboring server” because it unduly limits the term in light of the patent’s claims and specification. The Court denies the motion *in limine* as moot and will not allow either party’s expert to present testimony that contradicts the Court’s construction. For Limelight’s ‘155 Patent, the Court construes the term “second values” in the same way as the PTAB. The Court therefore grants partial summary judgment to Akamai on that issue, but will allow the parties to further brief whether Akamai’s products nevertheless infringe on Limelight’s ‘155 Patent based on the new construction.

**I. AKAMAI'S MOTION *IN LIMINE* REGARDING INTERPRETATION OF  
LIMELIGHT'S '002 PATENT**

Akamai moves to strike Limelight's expert testimony regarding the meaning of "one or more neighboring servers" in Limelight's '002 Patent. The motion is better styled as a request for claim construction, and the Court rejects Akamai's proposed construction.

The definition of the term "neighboring servers" matters in this case because Akamai had a prior art service that, beginning in 2001, would ping all servers within a local group of peer servers known as a Point of Presence ("POP") to find requested content if it could not find the content at the first edge server. In 2009, after the issuance of Limelight's '002 Patent, Akamai changed its system such that it would ping only a specifically chosen set of servers. Relevant here, if the '002 Patent's "neighboring servers" term simply means all local servers, then Akamai has not infringed on the patent because its prior art did just that. If "neighboring servers" means a specific subset of servers chosen for a particular reason, then Akamai's system, beginning in 2009, may have infringed on the '002 Patent.

Akamai proposes that the Court give the term "one or more neighboring servers" its plain meaning or construe it to mean "one or more nearby servers." Limelight proposes that the Court construe the term as "servers that are gathered in a group as neighbors with respect to a piece of content." The Court rejects Akamai's contention that neighboring servers simply means all local servers and construes "one or more neighboring servers" as "servers that are gathered in a particular group as neighbors with respect to a piece of content." Based on this interpretation, a jury must determine whether Akamai infringes on Limelight's patent.

**A. The '002 Patent**

The '002 Patent claims a method of optimizing a content delivery network ("CDN") in order to get internet content to end-users in the fastest way possible. Relevant here, the '002

Patent seeks to overcome the technological limitation that a CDN cannot store all of the content on the internet on each of the network's physical server locations distributed geographically throughout the country. When an internet user requests content on the internet through the CDN and first server to receive the request does not have the content, this results in a "cache miss" and the '002 Patent describes how to best find the requested content and deliver it to the user. The patent's claims look to "neighboring servers" for the missing content.

The '002 Patent's claims do not themselves define neighboring servers. Claim 15 states that the first server to receive a request exists in a first POP. If the first server does not have the information sought by a user, the system looks for the information in "one or more neighboring servers." The '002 Patent's specification discusses "neighbors" in a number of places throughout the patent. First, it says that "caches gathered in a particular group as neighbors can be other servers in the current POP . . . , servers having the capability to process the content object, a subset of servers assigned to a customer using the CDN to serve the content object, or some other grouping of servers in the POP." ('002 Patent at 4:24–29.) The patent continues that "content may be found in neighboring edge servers in the same POP, *in another POP*, in CDN origin servers, *or even an external origin server.*" (*Id.* at 4:67–5:6.) (emphasis added).

### **B. Legal Standard**

*Phillips v. AWH Corp.* and its progeny set forth the principles of claim construction. 415 F.3d 1303 (Fed. Cir. 2005). A district court must give a patent's words the ordinary and customary meaning they would have to a person of ordinary skill in the art. *Id.* at 1313. "[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

The claim language itself stands at the top of the source hierarchy, followed by other intrinsic evidence—the written description and prosecution history. *Id.* at 1314. “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Despite the specification’s important role, “‘one of the cardinal sins of patent law [is] reading a limitation from the written description into the claims.’” *Id.* at 1320 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)). “[C]laims must ‘not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.’” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015) (quoting *Innova/Pure Water, Inc., v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004)).

“[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.” *Alloc, Inc. v. ITC*, 342 F.3d 1361, 1370 (Fed. Cir. 2003)). For example, the Federal Circuit found that the undefined term “board” necessarily needed to be made of wood where “there was nothing in the intrinsic record to support the conclusion that a skilled artisan would have construed the term ‘board’ more broadly than a piece of construction material made from wood cut from a log.” *Nystrom v. TREX, Co.*, 424 F.3d 1136, 1145 (Fed. Cir. 2005) (“Throughout the written description, Nystrom consistently used the term “board” to describe wood decking material cut from a log.”) .

After considering intrinsic evidence, the Court may look to extrinsic evidence, including inventor testimony, dictionaries, and learned treatises. Extrinsic evidence, however, cannot contradict the intrinsic record. *Phillips*, 415 F.3d. at 1322–23.

### C. Discussion

The ‘002 Patent says that “neighboring servers could be a group of the entire POP [Point of Presence] or a sub-group of the servers within the POP.” Neighboring servers could even include a group of servers spanning multiple POPs. The patent’s specification repeatedly makes clear that neighboring server does not merely mean any server nearby. Indeed, the specification first introduces the term neighbor by describing “caches gathered in a particular group as neighbors . . . .” (‘002 Patent, 4:24–29.) By the specification’s own terms, what makes caches neighbors is the fact that they have been gathered together in a particular group. The patent specification then provides examples of particular groups of neighboring servers, including “other servers in the current POP . . . , servers having the capability to process the content object, a subset of servers assigned to a customer using the CDN to serve the content object, or some other grouping of the servers in the POP.” (*Id.*) Although the patent certainly allows for neighboring servers to all exist within a POP, what makes them neighbors is not their proximity but the fact that they have been “gathered in a particular group.” Reading the claims in light of the full patent, the Court construes “neighboring servers” as “servers that are gathered in a particular group as neighbors with respect to a piece of content.”

## II. AKAMAI’S MOTION FOR SUMMARY JUDGMENT

Akamai moves for summary judgment on the non-infringement of Limelight’s asserted ‘155 Patent. This issue first requires claim construction and then the Court can reach the summary judgment motion

The first issue before the Court hinges on the construction of one phrase in Claim 1 of the '155 Patent which says that “the second values of the attributes for the first connection thereafter influencing utilization of the available processing or memory capabilities of the part or all of the system supporting the first connection.” (‘155 Patent Claim 1.) The phrase falls in the middle of a set of steps in which second values get modified, and the parties disagree as to whether “the second values of attributes” in the quoted text refers to the second values either before or after the modification. Akamai argues that the term “second values” means “the second values (i.e., the original values) of the attributes for the first connection thereafter influencing utilization of the available processing or memory capabilities . . . .” Limelight claims that the term “second values” means “the modified second values of the attributes for the first connection thereafter influencing utilization of the available memory or processing capabilities” based on the context of the patent claims. The Court agrees with Akamai’s interpretation, and construes “second values” to mean “the second values (i.e., the original values) of the attributes for the first connection thereafter influencing utilization of the available processing or memory capabilities . . . .”

After construing the term, Akamai claims that its products do not infringe on the '155 Patent. Limelight says that Akamai’s products still infringe on the '155 Patent even if the Court accepts Akamai’s proposed construction. As stated in the accompanying Order, the Court remains unclear as to Limelight’s arguments on this issue and directs the parties to further brief Limelight’s new infringement claims.

### **A. The '155 Patent**

The '155 Patent is generally directed to methods of adjusting performance parameters of connections between computers based on the settings of certain attributes such as the size of messages and the amount of traffic over a connection. Claim 1 recites the following:

A method for managing delivery of content in a system comprising a server and an end user computer, comprising:

establishing a first connection at the server for communicating with the end user computer;

receiving a request for content from the end user computer over the first connection, the request include a universal resource locator (URL);

determining one or more parameters relating to the performance of the first connection using information from the request, wherein the determined one or more parameters relate to utilization of available processing or memory capabilities of part or all of a system supporting the first connection;

determining one or more first values of attributes based on the URL and the one or more parameters;

modifying second values of attributes for the first connection at a transport layer to result in the determined one or more first values, the second values of the attributes for the first connection thereafter influencing utilization of the available processing or memory capabilities of the part or all of the system supporting the first connection;

changing, on a connection-specific basis, a connection protocol stack operator based upon the modified values of the attributes; and

sending the requested content from the server to the end user computer such that the transport layer manages delivery of the content in accordance with the modified second values of the attributes.

('155 Patent, Claim 1.) Broken down, there is a request for content and the system determines certain network parameters related to performance. Next, the system determines one or more first values of attributes on the network based on the parameters of the network. The system then

modifies a second set of values to result in the determined first values. Then “the second values of the attributes” thereafter influence processing and memory capabilities.

### **B. Background**

Akamai petitioned the Patent and Trademark Appeal Board (the “PTAB”) for *inter partes* review seeking to find the patent invalid based on Akamai’s prior art. Akamai presented the PTAB with Limelight’s proposed claim construction. The PTAB decided *not* to initiate *inter partes* review because it *rejected* Akamai’s proffered interpretation of the patent and found that the *actual* patented claims (as the PTAB interpreted them) are not invalid. The PTAB found that the patent clearly says that the non-modified “second values” influence later processing or memory utilization as opposed to saying that the modified second values or “determined first values” influence that utilization. The PTAB recognized that Akamai did not provide much in the way of argument for the interpretation proposed by Limelight in this litigation, but it nonetheless rejected the interpretation as inconsistent with the plain language of the claim.

Akamai asks that this Court adopt the PTAB’s interpretation of the ‘155 Patent, which it argues should result in summary judgment because Akamai’s accused products do not operate in the way that the PTAB interpreted the ‘155 Patent to work.

From the beginning of the case, Limelight interpreted “second values of the attributes for the first connection thereafter influencing utilization” as referring to *modified* second values (*i.e.* the determined first values) as opposed to the initial, non-modified second values. Akamai did not request claim construction, but its expert, Dr. Bhattacharjee, challenged Limelight’s construction in his report.



### C. Claim Construction

As accurately stated by the PTAB, “according to the express language of Claim 1, it is the second values of the attributes (i.e. the original values, not the new, determined first values) that thereafter influence the utilization of available processing or memory capabilities.” (PTAB Opinion at pg. 10.) The Court agrees with the PTAB as to this initial assessment, and Limelight fails to show that other parts of the patent should lead the Court to interpret the term differently than its express language.

Limelight says that Claim 1 expressly uses “modified values” and “modified second values” to change connection stack operators and send requested content. It claims that these steps show that the modified second values, as opposed to the original second values, influence the utilization of available processing and memory. The Court rejects this argument because the use of “modified values” and “modified second values” elsewhere in the patent claim shows that the patent *could* have referred to “modified second values” had it wanted to in the earlier part of Claim 1 but instead referred to only second values. *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”).

Rather than offering strong reasons for why the Court should interpret the ‘155 Patent differently than the PTAB, Limelight says that the parties somehow agreed to its interpretation and points to a single Akamai slide from the *Markman* hearing that says the “second modified

value influenc[es] utilization of processor or memory capabilities.” Neither of these facts outweighs an independent analysis of the patent’s plain terms.<sup>1</sup>

#### **D. Summary Judgment**

Having rejected Limelight’s proposed interpretation of the ‘155 Patent, the Court now turns to Akamai’s summary judgment motion. Akamai says that it is undisputed that the Akamai system *does not* use original, non-modified values to influence the utilization of memory and processing and asks for summary judgment on non-infringement. In response, Limelight has proffered new infringement theories claiming that Akamai’s products still infringe on the ‘155 Patent even with the new construction. The Court has discretion to prevent Limelight from changing its infringement theory so late in the litigation. *See Neonatal Prod. Grp., Inc. v. Shields*, No. 13:-cv-2601, 2017 WL 3674961, at \*2–4 (D. Kan. Aug. 24, 2017) (“[T]he rules were ‘designed specifically to ‘require parties to crystallize their theories of the case early in the litigation’ so as to ‘prevent the ‘shifting sands’ approach to claim construction.”) The Court understands, however, that Limelight did not seek out this new construction and that it has been thrust upon it late in the litigation. For that reason, the Court will allow Limelight to support its new infringement theories based on evidence already contained in the record. Limelight attempted to do this as a part of its summary judgment briefing, but Limelight’s overall infringement theories remain unclear to the Court due to the complexity and technical nature of its arguments. Limelight points to a number of places in the record that show that Akamai’s system “retains and later uses the original values of the ‘second values’ even after the second values have been modified.” (Almeroth Decl., Dk. No. 536-7, at ¶ 20.) Limelight fails to show

---

<sup>1</sup> The Court also rejects Limelight’s argument that it would not make sense to use non-modified values after having modified them. Limelight argues in its summary judgment briefing that Akamai’s products actually do use non-modified values after having modified them, which undercuts its claim that doing so would never make sense.

in its briefing, however, that by “retaining and using” the values, that Akamai uses them to “influence memory and processing.” Within 14 days of this Opinion, the parties may submit simultaneous ten-page briefs on this issue.


### III. CONCLUSION

For the reasons stated above, the Court denies the defendant’s motion *in limine* and construes “one or more neighboring servers” as “servers that are gathered in a particular group as neighbors with respect to a piece of content.” On the defendant’s motion for summary judgment, the Court also grants partial summary judgment and construes “second values” to mean the “second values (i.e., the original values) of the attributes for the first connection thereafter influencing utilization of the available processing or memory capabilities . . . .” The Court grants the parties leave to file simultaneous ten-page briefs on whether Limelight may show patent infringement based on this interpretation.

The Court will enter an appropriate Order.

Let the Clerk send a copy of this Opinion to all counsel of record.

Date: January 19, 2018  
Richmond, VA

/s/   
\_\_\_\_\_  
John A. Gibney, Jr.  
United States District Judge