

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION**

TIR TECHNOLOGIES LIMITED,

Plaintiff,

v.

AMAZON.COM SERVICES LLC, AMAZON
WEB SERVICES, INC., AMAZON
DEVELOPMENT CENTER U.S., INC., AWS
SECURITY ASSURANCE SERVICES LLC,
and AMAZON DATA SERVICES INC.,

Defendants.

Case No. 1:25-cv-00865-RP

JURY TRIAL DEMANDED

**PLAINTIFF TIR TECHNOLOGIES LIMITED'S
RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Plaintiff Tir Technologies Limited (“Tir”) submits this claim construction brief concerning U.S. Patent Nos. 8,792,347 (the “’347 Patent”), 9,800,633 (the “’633 Patent”), 10,375,444 (the “’444 Patent”) and 10,484,442 (the “’442 Patent”) in response to Defendants Amazon.com Services LLC, Amazon Web Services, Inc., Amazon Development Center U.S., Inc., AWS Security Assurance Services LLC, and Amazon Data Services Inc. (collectively, “Amazon”) Opening Claim Construction Brief, Dkt. No. 62 (“Br.”).

II. “ORIGIN SERVER”

Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“server that provides original source files for caching at other servers”

Amazon fails to justify limiting the scope of the term “origin server.” Amazon seeks to improperly narrow the scope of the term by requiring the existence of both additional components (“other servers,” which Amazon describes as “edge”/“cache” servers) and functionality (“provides original source files for caching”). *See Morpho Komodo LLC v. Blu Prods. Inc.*, No. 2:15-CV-1100-JRG-RSP, 2016 WL 3976491, at *7 (E.D. Tex. July 25, 2016) (“Defendants’ construction does not define the disputed term ‘computer,’ but instead improperly narrows the term to ‘a laptop or desktop computer.’”). But Amazon does not point to any disclaimer or lexicography that justifies limiting the term “origin server” to the additional components and functionality required in its proposed construction. *See Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1369 (Fed. Cir. 2012) (“Absent disclaimer or lexicography, the plain meaning of the claim controls.”). Indeed, Amazon admits that the claims and specification do not “include a definitional statement.” Br. at 5, 6.

Amazon argues that its construction is intended to differentiate the “origin server” from an “edge server” or a “cache server,” and primarily relies on inapposite dictionaries and textbooks to support this distinction. Br. at 8-9. But Amazon’s extrinsic evidence is divorced from the context of the patents, which do not differentiate between an “origin server” and “edge/cache server” that communicate with user devices. More importantly, Amazon does not identify any intrinsic evidence that supports the architectural distinction it seeks to import into the claims. This is likely because claims directly refute Amazon’s construction and show that Amazon’s purported architecture is not required. For example, claim 1 of the ’347 Patent recites “a network data flow between an origin server and a user device,” confirming that the user device communicates with the “origin server” and that no intermediary “edge/cache server” is required. Similarly, claim 1 of the ’444 Patent recites “the embedded media file being streamed to the user device by an origin server,” again confirming that no “edge/cache server” is required. The prosecution histories further confirm that the patents do not distinguish an “edge/cache server,” where the examiner broadly applied the term “origin server” to devices that cache content.¹

The term “origin server” is used in the claims of the ’347, ’633 and ’444 Patents with a specified role in each of the patents that is understood in light of its plain and ordinary meaning. In the ’347 Patent, the “origin server” is the beginning of a “network data flow” to a “user device.” See ’347 Patent at 23:4-8, 24:10-24, 25:27-31 (“a network data flow between an origin server and a user device, the data flow for delivering media content from the origin server to the user device

¹ For example, during prosecution of the ’347 Patent, the examiner mapped “origin server” to Parker (US20120233311) which discloses a content distribution system 130 that is described as caching content from the provider. See Ex. 1 at [0016]; Ex. 2 at TIR-AMZ-00002049. During prosecution of the ’444 Patent, the examiner mapped “origin server” to Knowlson’s (US20100169502) “controlling device 114” which is a PC in a home and not limited to Amazon’s narrow construction. See Ex. 3 at [0037]-[0039]; Ex. 4 at TIR-AMZ-00001658-1659.

in response to a request for the media content from the user device”); *see also* Ex. 5, Goodrich Decl. at ¶ 34. In the ’633 Patent, the “origin server” stores the “original source file.” *See* ’633 Patent at 22:31-33, 23:57-59 (“an original source file ... stored on an origin server”); *see also* Ex. 5, Goodrich Decl. at ¶ 36. In the ’444 Patent, the “origin server” is the source for an “embedded media file being streamed to the user device.” *See* ’444 Patent at 15:46-48, 16:43-45, 17:46-18:2 (“the next portion and one or more remaining portions of the embedded media file being streamed to the user device by an origin server”); *see also* Ex. 5 Goodrich Decl. at ¶ 35. The patents do not distinguish an “edge/cache server,” and the term does not require any further construction.

Amazon asserts that “[e]ach of the patents describe an ‘origin server’ as an upstream network device that stores content and provides that content for caching at downstream servers, *e.g.*, video optimization servers.” Br. at 4 (citing ’633 and ’444 Patents). Amazon also asserts that “every embodiment and example of an ‘origin server’ in the specifications includes the functionality and role of an ‘origin server’ that [Amazon’s] construction captures.” *Id.* at 6. These assertions are incorrect. First, for the ’347 Patent, there is no description of caching at “downstream servers.” Indeed, Amazon does not cite to any aspect of the ’347 Patent for its assertion. While the patent describes a “flow cache” to store network data flow information and statistics, it does not describe a cache to store source files. *See* ’347 Patent at 8:16-17, 9:4-5; *see also* Ex. 5, Goodrich Decl. at ¶ 38. The ’347 Patent, in addition to describing that the “video optimizer 150 and the origin server 160 are typically formed of one or more computers,” also describes that a “single server may also ... serv[e] optimized video content.” ’347 Patent at 6:34-42; *see also* Ex. 5, Goodrich Decl. at ¶ 38. To that end, Amazon’s proposed construction improperly seeks to import limitations in a manner that excludes a preferred embodiment teaching the use of only a “single server.” *See Epos Techs. Ltd. v. Pegasus Techs.*, 766 F.3d 1338, 1347

(Fed. Cir. 2014) (“A claim construction that excludes a preferred embodiment is rarely, if ever correct and would require highly persuasive evidentiary support.”).

Second, with respect to the ’633 Patent, the claims already recite “an original source file ... stored on an origin server.” ’633 Patent at 22:31-33, 23:57-59; *see also* Ex. 5, Goodrich Decl. at ¶¶ 36, 42. The claims also recite a “first portion” and a “segment” of an “optimized version” of the “original source file” are stored in the caches of “video optimization servers.” ’633 Patent at 22:36-40, 22:52-54, 23:63-67, 24:12-14; *see also* Ex. 5, Goodrich Decl. at ¶¶ 36, 42. Amazon’s expert confirms that “the ‘origin server’ is distinct from [] the ‘video optimization server’.” Dkt. 62-10, Bhattacharjee Decl. at ¶¶ 36, 44. Moreover, the specification of the ’633 Patent does not describe that “other servers,” including the “video optimization servers,” store or cache an “original source file.” *See* Ex. 5, Goodrich Decl. at ¶ 42. Rather, as Amazon acknowledges, the ’633 patent “describes that the video optimizer may ‘cache’ the transcoded content in its local cache.” Br. at 7. Amazon claims that this “confirm[s] that the video optimizer is a downstream ... server that caches the origin server’s content,” *id.*, but provides no evidence from the intrinsic evidence that the ’633 Patent discloses such a scenario. Put simply, the ’633 Patent does not teach that the “video optimizer” “caches the “original source file” (i.e., the “origin server’s content.”).² Amazon’s construction seeks to import limitations that are not described in the ’633 Patent.

Third, with respect to the ’444 patent, the claims do not recite an “original source file,” nor do they recite “caching” “of an “original source file” “at other servers.” *See* Ex. 5, Goodrich

² Amazon asserts that “the ’633 specification discusses ‘purging’ copies of original source files throughout the content delivery network if the copyrighted file is ‘no longer available from the copyright holder.’” Br. at 8 (citing ’633 Patent at 3:50-54). The specification dictates that “only optimized versions of the source file as currently available from the copyright holder are provided to the user device.” ’633 Patent at 3:50-54. It does not say anything about “purging” copies of original source files.

Decl. at ¶¶ 39, 41. While the claims do recite a “cache,” that “cache” is on the “user device,” not a server. *See* ’444 Patent at 15:32-33, 16:29-30, 17:32-33 (“stor[e][ing] the first portion of the embedded media file in a file cache of the user device.”); *see also* Ex. 5, Goodrich Decl. at ¶ 40. Furthermore, while the specification describes a server cache, that cache stores transcoded “source file data,” not an “original source file.” *See* ’444 Patent at 8:15-21 (“the cache database 160 stores the location of cached optimized versions of source files i[n] association with the source file and their associated parameters for identification by the cache source 155”); *see also* Ex. 5, Goodrich Decl. at ¶ 41, *see also* Dkt. No. 62-10, Bhattacharjee Declaration at ¶ 49 (“The specification explains that, ‘as transcoded versions of the source file ... are generated, they can be placed into a cache on the server-side so that the next time a user device requests the source file with similar parameters, it does not need to be transcoded again,’ and that such cached versions may be purged when not frequently requested.” (citing ’444 Patent at 3:1-18)). Amazon claims that this “confirms that the ‘origin server’s’ content is cached at intermediate servers within the network,” Br. at 8, but the evidence they provide from the ’444 Patent does not disclose such a scenario. The ’444 Patent does not teach that an intermediate server “caches the “original source file” (i.e., the “origin server’s content.”). Rather, the patent teaches that a “cache database” is upstream from the “origin server,” which contradicts Amazon’s alleged architecture that requires an “edge/cache” server that communicates with the user. As with the ’633 Patent, Amazon’s construction seeks to import limitations that are not described in the ’444 Patent.

The extrinsic evidence cited by Amazon is inapposite. *See* Br. at 8-9. As the Federal Circuit has repeatedly held, the intrinsic evidence is given primacy and a Court should only look to extrinsic evidence to construe claims only if it is consistent with the intrinsic evidence. *See Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973, 977 (Fed. Cir. 2014); *see also Phillips*, 415

F.3d at 1318 (“[A] court should discount any expert testimony ‘that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history.’”) (citation omitted). Amazon makes no attempt to reconcile the cited extrinsic evidence with the teachings of the patents, nor can it. The ’347 Patent does not claim or teach caching of an original source file. The ’633 Patent teaches caching of “optimized versions” of an “original source file,” not the caching of the “original source file.” Similarly, the ’444 Patent teaches caching of transcoded “source file data,” not the caching of the “original source file.” The patents do not claim nor describe an “origin server” employing the architectural distinction of an “edge/cache” server that Amazon seeks to import into the claims.

Lastly, Amazon contends that “Tir’s proposal fails to acknowledge that the modifier ‘origin’ affects the type and functionality of the ‘server.’” Br. at 9. This is incorrect. As discussed above, Tir’s proposed construction is correct because the claims themselves define the role for the “origin server.” In the ’347 Patent, the “origin server” is where a “network data flow” to a “user device” begins. *See* ’347 Patent at 23:4-8, 24:10-24, 25:27-31; *see also* Ex. 5, Goodrich Decl. at ¶ 34. In the ’633 Patent, the “origin server” stores the “original source file.” *See* ’633 Patent at 22:31-33, 23:57-59; *see also* Ex. 5, Goodrich Decl. at ¶ 36. In the ’444 Patent, the “origin server” is the source for an “embedded media file being streamed to the user device.” *See* ’444 Patent at 15:46-48, 16:43-45, 17:46-18:2; *see also* Ex. 5, Goodrich Decl. at ¶ 35. Tir’s “approach” is consistent with the claims and the specifications of the three patents.

III. “ESTIMATING BANDWIDTH”

Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“calculating bandwidth to be consumed based on bytes transferred over time”

Amazon seeks to redraft the claims of the '347 Patent reciting “estimate[ing] bandwidth to be consumed” to require an express “calculati[on]” of “bandwidth to be consumed” based on a specific formula—“bytes transferred over time.” “Absent disclaimer or lexicography, the plain meaning of the claim controls.” *Toshiba Corp.*, 681 F.3d at 1369. Amazon fails to identify any disclaimer or lexicography that justifies limiting the scope of the term “estimat[ing] bandwidth to be consumed.” The intrinsic evidence teaches that there are various ways to “estimate bandwidth to be consumed,” and the Court should reject Amazon’s attempt to construe the term in a manner that excludes preferred embodiments and renders dependent claims superfluous.

The '347 Patent claims already explain the requirements for “estimating bandwidth to be consumed”: the “estimate” is “based on the statistic information collected for the data flow and the historical bandwidth provided to the subscriber.” That is, the independent claims recite that the “estimate” is derived from two sources: (1) “the statistic information collected for the data flow” and (2) “the historical bandwidth provided to the subscriber.” Those concepts are further taught through the embodiments of the '347 Patent. *See, e.g.*, '347 Patent at 2:63 – 3:14, 8:10 – 9:20. Amazon’s proposed construction adds a third, unclaimed requirement—that the estimate be calculated specifically as “bytes transferred over time”—that appears nowhere in the independent claim language and cannot be imported from the specification.

There is no basis for treating the term “estimate” as equivalent to “calculate,” as Amazon’s proposed construction requires. The patentee expressly distinguishes between “calculating” bandwidth and “estimating” bandwidth in both the '347 Patent claims and specification. For example, dependent claim 5 recites:

5. The method of claim 1, wherein estimating the bandwidth to be consumed on the service provider network by the data flow comprises:

receiving an update on the transmitted or received bytes to the flow record;
and

calculating the bandwidth by dividing a difference between the transmitted or received bytes since last update by an interval of time since the last update.

Dependent claim 13 is similar. Under basic term interpretation and differentiation principles, the “estimating the bandwidth to be consumed” recited in claim 1 must be broader than dependent claim 5. However, if claim 1’s “estimating the bandwidth” was already limited to Amazon’s proposed bytes-over-time calculation, claim 5 would not provide any limitation to claim 1, and would be redundant and otherwise rendered meaningless. *See Phillips*, 415 F.3d at 1315 (Fed. Cir. 2005) (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”).

The ’347 Patent also teaches potential ways to “estimate[e] bandwidth to be consumed” that extend beyond calculating only “bytes transferred over time,” which confirms that Amazon’s proposed construction is unduly narrow. For example, the ’347 Patent teaches that user flows may be categorized based on the use of “buckets based on the size of the objects being transferred,” where “[t]he estimated bandwidth is calculated by summing the bandwidth estimated from each of the buckets for the current interval.” ’347 Patent at 17:33 – 18:12. The ’347 Patent further explains that “[o]nly when the combined weight from each of the buckets exceeds a threshold value, is the estimated bandwidth updated[.]” *Id.* at 18:18-22. This bucket-and-weighting methodology is not reducible to a simple bytes-over-time calculation.

In addition, the ’347 Patent teaches “measured bandwidth is stored in a queue data structure,” where “each time a non-zero bandwidth is measured in an interval, the measured bandwidth is pushed into the tail of the queue.” *Id.* at 18:23-26. Under that method, the ’347 Patent teaches that the “[e]stimated bandwidth can be calculated from an average, a maximum or a minimum value from the queue.” *Id.* at 18:26-28. Amazon’s brief cites this very passage in

purported support of its construction, Br. at 12, but then fails entirely to explain how deriving an estimated bandwidth from “an average, a maximum or a minimum value from the queue” requires calculating bytes over time. This is because it does not. Taking a minimum or maximum value from a queue of previously measured bandwidths is a distinct operation from dividing bytes by time, and is improperly excluded from Amazon’s construction.³ See *Epos Techs.*, 766 F.3d at 1347 (Fed. Cir. 2014) (“[A] claim construction that excludes a preferred embodiment ... is rarely, if ever correct and would require highly persuasive evidentiary support.”).

Based on the foregoing, Amazon’s sole reliance on the teachings of Figure 7 is unpersuasive. Br. at 11-12. For example, Amazon’s argument hinges on a statement in the ’347 Patent that “[t]he estimated bandwidth 734 in a user flow block 700 *can be* calculated as follows” Br. at 11 (citing ’347 Patent at 17:14-15). But Amazon ignores the permissive, non-limiting nature of that language. The ’347 Patent is explicit that it is teaching one way in which estimated bandwidth “*can*” be calculated—not that it must be calculated only using that method. This understanding is consistent with the ’347 Patent’s teachings of different ways to ascertain the “estimated bandwidth”—for example, bucket-based summation, queue-based averaging, and sliding window techniques. ’347 Patent at 17:33 – 18:39.

Finally, Amazon’s cited cases are unpersuasive. For example, Amazon relies on *Gemalto S.A. v. HTC Corp.*, 754 F.3d 1364, 1369 (Fed. Cir. 2014), for the proposition that “[c]laims cannot be of broader scope than the invention that is set forth in the specification.” Br. at 10. But *Gemalto* does not support limiting “estimating bandwidth” to a single bytes-over-time formula. For

³ The ’347 Patent further teaches that “[i]n another example, a sliding window technique is used in conjunction with a longer queue to smooth out variation as well as to track quick changes.” ’347 Patent at 18:36-39. This sliding window technique operates on stored bandwidth measurements over time and it is not the simple bytes-over-time division formula required by Amazon’s construction.

example, unlike *Gemalto*, the '347 Patent expressly discloses multiple alternative methods for estimating bandwidth—including bucket-based, queue-based, and sliding window approaches—and it is not proper to limit the scope of the claims to any one particular means for ascertaining “estimating bandwidth.”

IV. “OPTIMIZE” TERMS

The Court should reject Amazon’s attempt to rewrite the claims of the '633 and '442 Patents to replace the term “optimize” with “transcode.” Amazon cannot identify any disclaimer or lexicography that justifies departing from the plain and ordinary meaning of the term “optimize” and its proposed construction should be rejected. *See Hill-Rom Servs.*, 755 F.3d at 1371 (“We depart from the plain and ordinary meaning of claim terms based on the specification in only two instances: lexicography and disavowal.”).

Amazon is wrong that the “patentee used ‘optimize’ and ‘transcode’ interchangeably.” Br. at 13. Quite the contrary, the patentee deliberately drafted the '633 and '442 Patent claims to address transcoding only when the act of “transcoding” is required for practicing a specific claim. For example, independent claim 1 does not recite any steps concerning “transcoding.” However, dependent claim 7 of the '442 Patent expressly does recite “transcoding”:

7. The method of claim 1, further comprising:

determining a second segment of the optimized version of the original source file is not stored by the plurality of other video optimizers;

transcoding, responsive to the determination, the second segment of the original source file;

storing the transcoded second segment in the local cache of the video optimizer; and

stitching the transcoded second segment with the stitched optimized version of the original source file.

Likewise, dependent claims 8, 9, and 17-19 of the '442 Patent and dependent claims 7-9 and 16-18 of the '633 Patent all recite express limitations directed to “transcoding.”

The express “transcoding” limitations in the dependent claims demonstrate that the patentee made a deliberate decision not to require “transcoding” in the broader independent claims from which those claims depend. Had the patentee intended to include requirements regarding “transcoding” in the independent claims, it would have specified those requirements as it did in the dependent claims. *See Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1305 (Fed. Cir. 1999) (“the narrower claim 11 adds a thermal compensation function expressly not included in the broader claims 3, 5, and 8. Had Rodime intended or desired to claim thermal compensation as a function of the positioning means in the asserted claims, it could have done it explicitly, as in claim 11.”). The fact that the patentee deliberately included a “transcoding” requirement in some, but not all of the ’633 and ’442 Patent claims, refutes Amazon’s argument that “optimizing” and “transcoding” are synonymous. Indeed, rewriting “optimizing” to mean “transcoding,” as Amazon proposes, would improperly conflate the distinct limitations recited in the various claims. *See Board of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008) (“Different claim terms are presumed to have different meanings.”).

The fact that the independent claims do not require “transcoding” by the “video optimization server” makes sense in light of the “caching” aspects of the invention. The ’633 and ’442 Patents teach that “[t]he disclosure generally relates to improving user experience on a network, and more specifically, to optimizing video caching in a network.” ’633 Patent at 1:17-18. The patents further teach:

Embodiments disclosed herein include a cache database for monitoring local caching of optimized video occurring at numerous video optimizers. The cache database maintains entries corresponding to each optimized video locally cached at a given optimizer. In turn, when a user requests the optimization of a given source file on a source server at a video optimizer, the cache database is able to provide the video optimizer with the locations and addresses of other optimizers that have previously optimized and stored the given source file in their local cache. The optimizer receiving the optimization request for the source file may then **retrieve**

the optimized file from another optimizer or redirect the user device to the second optimizer, thus eliminating the need to generate redundant optimized source files. By accessing existing optimized source files rather than repeatedly transcoding the same source files, fewer video optimizers are needed to provide resource heavy transcoding operations.

Id. at 2:55 – 3:5. That is, the '633 and '442 Patents teach that a core aspect of the claimed invention is precisely that a video optimizer does not need to transcode a file every time it receives a request—a fact that is fatal to Amazon's construction. *See also, e.g., id.* at 4:20-23 (“the source file has already been previously transcoded by another optimizer and an optimized version having the desired parameters is stored in a local cache of one of the other optimizers.”). The patents also teach the use of a “cache database” that “enhances the performance of the video optimizer 150 by eliminating the need to transcode source files that have already been previously optimized by another video optimizer 150.” *Id.* at 9:7-10. Where a request to “optimize” can be satisfied without any transcoding at all—by retrieving a previously optimized file from another optimizer—it is plainly incorrect to read “optimize” as synonymous with “transcode.”

Amazon is also wrong that “[t]he specification consistently describes optimization as transcoding.” Br. at 13. The '633 and '442 Patent specification treats optimizing and transcoding as distinct (albeit related) concepts. While an “optimized” file may be “transcoded,” the '633 and '442 Patents teach optimization more broadly than the mere act of “transcoding.” For example, the patents teach that “[t]he video optimizer 150 ingests source file content directly from an origin server 170 or other source and produces a reduced bit rate stream in real-time. The **transcoded and optimized** stream can be stored temporarily in a local storage.” '633 Patent at 7:42-47. The use of “and”—“transcoded *and* optimized”—treats these as distinguishable concepts: the stream is *both* transcoded *and* optimized, confirming they are not synonyms. Amazon's brief acknowledges this usage but attempts to explain it away as “the means and the

end.” Br. at 18. But that post-hoc rationalization finds no support in the specification and cannot override the ordinary meaning of a conjunctive phrase.

Finally, Amazon is also wrong that applying the plain and ordinary meaning of the term “optimize” somehow fails to “give meaning” to the term and would somehow “expand the claims beyond what the patent teaches and the inventors disclosed.” Br. at 14. Tir seeks only to ensure that “optimize” be construed in accordance with the full scope of the teachings of the ’633 and ’442 Patents, embracing all of the preferred embodiments and respecting the patentee’s deliberate decision to expressly require “transcoding” in certain claims and not others. While optimization can encompass transcoding, the broader use of the term “optimize” by the patentee should not be restricted to only “transcoding.”

A. “Video optimization server(s)”; “video optimizer(s)”; “address of another video optimizer”

“video optimization server(s)” (’633 Patent) / “video optimizer(s)” (’442 Patent)	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“server(s) that transcode video”
“video optimizer(s)” (’633 Patent)⁴	
Tir’s Proposed Construction	Amazon’s Proposed Construction
“video optimization server”	“server(s) that transcode video”
“address of another video optimizer” (’633 Patent)	
Tir’s Proposed Construction	Amazon’s Proposed Construction
“address of another video optimization server”	“address of another server that transcodes video”

⁴ As Amazon acknowledges, “the parties agree that ‘video optimization server(s)’ and ‘video optimizer(s)’ are the same and that the ‘address of another’ language does not require separate construction.” Br. at 15; *see also* ’633 Patent at 7:25-28 (“‘video optimizer 150 is a computer server that provides source file ... optimization and delivers optimized video and image content to the user devices”). A POSITA would therefore recognize that the term “video optimizer” in the claims of the ’633 Patent is referring to a “video optimization server.”

Amazon’s proposed construction of the “video optimization server(s)” as “server(s) that transcodes video” is unduly narrow and should be rejected. Amazon does not identify any lexicography or disclaimer that warrants limiting “video optimization server(s)” / “video optimizers” to only “transcod[ing] video.”

The ’633 and ’442 Patents contain embodiments where a file is transcoded by *other* video optimizers, meaning there is no requirement that the server that receives a “request” for an optimized file be the optimizer that performs “transcoding.” *See, e.g.*, ’633 Patent at 4:32-34 (“the optimizer may request the optimized source file from the second optimizer that has locally cached the optimized version of the source file.”). The ’633 and ’442 Patents expressly teach that “[i]n some embodiments, the video optimizer can simply transcode the video itself, while in other embodiments, the video optimizer may have to redirect the request to other video optimizers.” ’633 Patent at 11:15-17; *see also* 3:61-4:41 (“In an embodiment, the source file has not been previously transcoded.... In another example embodiment, the source file has already been previously transcoded by another optimizer....”). Amazon’s construction improperly limits the claims to one embodiment—where the video optimizer transcodes the video—to the exclusion of the other expressly disclosed embodiment where a video optimizer “redirect[s] the request” to another optimizer without performing any transcoding at all. A construction that excludes a disclosed embodiment is presumptively incorrect. *See Phillips*, 415 F.3d at 1323. Amazon’s proposed construction should be rejected on this basis alone.

The claims use the terms “video optimization server(s)” / “video optimizers” consistent with the teachings of the specification. For example, the ’633 and ’442 Patents explain that “[t]he video optimizer 150 is a computer server that provides source file, such as video and image, **optimization** and delivers **optimized** video and image content to the user devices 110 via the

network 120.” ’633 Patent at 7:25-28. Critically, the specification defines the video optimizer by reference to its delivery of *optimized* content—not by reference to the act of transcoding. The patents also teach a variety of potential configurations for a “video optimizer”:

While only one server of each video optimizer 150, cache database 160 and origin server 170 is shown in the environment 100 of FIG. 1, different embodiments may include multiple web servers and video servers operated by a single entity or multiple entities. In other embodiments, a single server may also provide different functionalities, such as delivering web content as a web server, as well as serving optimized video content.

’633 Patent at 9:57 – 10:1; *see also id.* at 20:36-38 (“structures and functionality presented as a single component may be implemented as separate components.”). Further, “[s]everal video optimizers 150 may be combined into a video caching cluster, where locally cached optimized source files may be shared between the individual video optimizers 150.” *Id.* at 7:59-62. In addition, the ’633 and ’442 Patents teach that the “video optimizers” perform functions beyond transcoding, including cache maintenance, load balancing, database updates, and redirecting requests. *See, e.g., id.* at 13:14-26, 14:18-30, 14:18-30. These varied configurations and functionalities—which include serving cached, previously optimized content rather than performing transcoding—confirm that “video optimizer” cannot be reduced to simply “a server that transcodes video.”

Amazon’s reliance on claim 7 of the ’633 Patent only underscores the issues with its proposed construction. Claim 7 expressly provides for “**transcoding** the second segment of the original source file” when “determining a second segment of the optimized version of the original source file is not stored by the plurality of other video optimization servers.” Amazon argues that “[t]his language uses ‘video optimization server’ and ‘transcoding’ in the same limitation, confirming that the video optimization server is the server that transcodes the video.” Br. at 16. But as detailed above, the fact that the patentee deliberately wrote claim 7 to require that the

“video optimization server” “transcod[e]” a “second segment” only when that segment was never previously transcoded—and expressly did not require any such “transcoding” in the independent claims—demonstrates precisely the opposite of what Amazon argues. The patentee knew how to specify when transcoding is required and chose not to impose that limitation on the independent claims. No construction is necessary.

B. “Request to optimize”

“request to optimize”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“request to transcode”

Amazon also cannot justify redrafting the term “request to optimize” as a “request to transcode.” Notably, Amazon seeks to redraft the claims such that the recited “key” be used for “encod[ing] both the source file signature and the transcoding parameters.” Br. at 16. But that is not what the claims recite, and Amazon does not identify any lexicography or disclaimer that justifies rewriting the claims in the manner it requests.

The claims are clear there must be (1) a “request to optimize an original source file” and (2) that the “request” “includ[es] a key specifying parameters for optimizing the original source file.” As to the first aspect, the ’633 and ’442 Patents expressly teach a “request to optimize” can be fully satisfied without any transcoding whatsoever—by retrieving an “optimized” file from other optimizers. *See, e.g.*, ’633 Patent at 2:59 – 3:5 (“when a user requests the optimization of a given source file on a source server at a video optimizer, the cache database is able to provide the video optimizer with the locations and addresses of other optimizers that have previously optimized and stored the given source file in their local cache.”); 12:35-42 (a “cache hit” “indicates that the video optimizer 150 **does not have to transcode** the source file in order to

send an optimized version of the source file to the user device 110.”). A “request to optimize” that is satisfied without transcoding cannot be a “request to transcode,” as Amazon contends.

As to the second aspect—the “key specifying parameters for optimizing the original source file”—the independent claims use the “key” to identify and obtain an optimized file from the cache infrastructure, not to direct a transcoding process. The independent claims are otherwise agnostic to the use of those parameters in transcoding. Amazon fails to justify importing any such transcoding requirements into the claims.

Amazon argues that dependent claims 7, 8, and 9 somehow demonstrate that a “request to optimize” is “a request to transcode a copy of the original source file according to the parameters specified in the key.” Br. at 16-18. But, as explained above, the patentee’s deliberate decision to only require “transcoding” in those dependent claims underscores that the independent claims are broader and do not require “transcoding.” Dependent claims 7, 8, and 9 are focused on “transcoding” a “second segment of the original source file” in circumstances where that segment was never previously optimized — a different circumstance than the one contemplated in the independent claims. The independent claims concern utilizing a “key” to query a database to receive the “address of *another* video optimizer storing” a “segment of the optimized” file—meaning there is no need to “transcode” that “segment.” Accordingly, the Court should reject Amazon’s attempt to redraft the “request” to require a “request to transcode.”

Finally, Amazon’s reliance on the teachings of the specification also fails. Br. at 17-18. For example, Amazon cites the following to argue that a “request to optimize” is a “request to transcode”:

When a source file is transcoded and optimized by a video optimizer, for example, it may be saved into a local cache. Local caching allows the video optimizer to store the transcoded source file (**or optimized version** of the source file) for a short duration and respond to a user’s requests (e.g., replaying the video or skipping in

the timeline of the video) without having to re-retrieve the source file for transcoding.

'633 Patent at 2:29-36. Amazon argues that “the use of disjunctive ‘or’ when referring to storing the transcoded or optimized version of the source file is not referring to two different things.” Br. at 17. But Amazon’s position is directly contrary to the express teachings of the ’633 and ’442 Patents, which explain the intended use of the disjunctive “or”:

Further, unless expressly stated to the contrary, “or” refers to an inclusive or and not to an exclusive or. For example, a condition A or B is satisfied by any one of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

'633 Patent at 22:1-6. To that end, Amazon’s quotation only undermines its argument because the patents expressly teach that the use of “or” in “the transcoded source file (or optimized version of the source file)” refers to two different things.

C. The “specifying parameters” for the “optimizing terms”

“specifying parameters for optimizing the original source file” / “specifying parameters to optimize the original source file” / “specifying parameters of an optimized version of a source file”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“specifying parameters for transcoding the original source code file” “specifying parameters to transcode the original source code file” “specifying parameters of a transcoded version of a source code file”

Tir does not dispute that the ’633 and ’442 Patents teach that the “parameters” can be utilized in connection with transcoding the original source file. Br. at 18-19. But that is not the focus of the independent claims of the ’633 and ’442 Patents. Rather, the claims only recite “parameters” as a characteristic of a “key” that is matched against “reference keys” to identify the location of a particular optimized file in the claimed caching infrastructure. The claim language

describes a “key” and recites that a feature of that key is that it “specif[ies] parameters to optimize the original source file”—the purpose being to enable matching, not to direct transcoding. *See* ’633 Patent at 12:32–47 (describing how the key is used to search the cache database for a matching optimized version). The independent claims are otherwise agnostic to the use of those parameters in the transcoding process.

The specification confirms that the parameters’ primary role in the claimed system is identification and matching: “The cache database 160 searches 318 its database based on the received key to determine whether the database contains any reference key entries that match the key.” ’633 Patent at 12:32-35. The specification further teaches that the key “can be used to identify particular optimized version[s] of the source file that are stored in the cache of various video optimizers 150.” *Id.* at 7:14-17. This identification-and-matching function is what the independent claims capture. The broader parameters-for-transcoding teaching of the specification describes one mechanism by which those parameters are generated—it does not limit the claims to that mechanism.

Amazon’s reliance on ’633 Patent 6:44–50—describing parameters such as “target bit rate, frame width, frame height, sample rate, audio properties and the like for transcoding the source file”—does not compel a different result. That passage describes how the network controller *generates* the optimization parameters; it does not define the scope of what the independent claims require of those parameters once generated. The independent claims capture the *use* of those parameters to identify and retrieve optimized files, without limitation to the transcoding process that may have been used to generate them.

D. The “optimized version” terms

“optimized version of the original source file”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“transcoded version of the original source file according to the specified parameters in the key”
“plurality of optimized versions”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“plurality of transcoded versions according to the specified parameters in the corresponding reference key”

Amazon cannot justify re-writing the term “optimized version(s)” as “transcoded version(s)” in claims 1 and 11 of the ’633 and ’442 Patents. For all the reasons explained above, “optimized” is not synonymous with “transcoded,” and Amazon has not identified any lexicography or disavowal necessary to justify departing from the plain and ordinary meaning.

Amazon is wrong that claim 8 of the ’633 Patent “uses ‘transcoded’ and ‘optimized version’ interchangeably in the context of the reference key” and somehow “demonstrates that the ‘plurality of optimized versions’ in the independent claims are copies of transcoded versions.” Br. at 20. Independent claim 1 of the ’633 Patent recites “a plurality of reference keys corresponding to a plurality of optimized versions of source files.” Claim 8 then recites “a reference key corresponding to the **transcoded** second segment of the **optimized version** of the source file.” That claim 8 uses the word “transcoded” to describe a specific dependent-claim circumstance where a segment was not previously available and had to be freshly transcoded—does not transform the broader “optimized version” language of independent claim 1 into a “transcoded version.” To the contrary, it confirms that the patentee knew how to use the word “transcoded,” and chose not to do so in the independent claims.

Amazon is also wrong that construing the terms based on their plain and ordinary meaning “does not address the ambiguity by multiple optimized versions of the same source file.” Br. at

21. The claimed invention already resolves this question through the key-matching mechanism. The claims contemplate a “request” including “a key specifying parameters for optimizing the original source file and uniquely identifying the original source file,” which is then compared against “reference keys” where each “reference key specif[ies] parameters of an optimized version of a source file.” The key-matching limitations ensure that only the “optimized version” with the required parameters will be identified as a match. *See* ’633 Patent at 12:32-42. The key-matching infrastructure already ensures that the correct “optimized version” is identified and a narrowing construction of “optimized version” is neither necessary nor appropriate.

Finally, Amazon’s proposed construction appends the phrase “according to the specified parameters in the key” to “optimized version of the original source file.” But this language does not appear in the claim term and would improperly import a limitation from the key-matching mechanism into the definition of “optimized version” itself. The claims already separately recite the “key” and its “parameters”—adding that requirement into the definition of “optimized version” would create redundancy and improperly narrow the term beyond what the claim language requires.

V. “STITCHING” TERMS

“stitching” / “stitch” / “stitched”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	“combining into one file” “combine into one file” “combined into one file”

Amazon fails to justify limiting the scope of the “stitching” terms. Amazon seeks to narrow the scope of the term by improperly requiring the existence of additional functionality (“combining *into one file*”). *See Morpho Komodo*, 2016 WL 3976491, at *7 (“Defendants’ construction does not define the disputed term ‘computer,’ but instead improperly narrows the term to ‘a laptop or

desktop computer.”). But Amazon does not point to any disclaimer or lexicography that justifies limiting the “stitching” terms to the additional functionality required in its proposed construction. *See Toshiba Corp.*, 681 F.3d at 1369. Nothing in the claims, specification, or prosecution history suggests that “stitching” requires “combining into one file.”

Amazon argues that the “the two-step sequence, *i.e.*, stitch and then stream, recited in the claims requires generating a combined file and then streaming it.” Br. at 21; *see also id.* at 23 (“Tir’s non-construction fails to address the parties’ dispute of whether the segments must first be stitched before streaming.”). But there is no dispute that the claims require “stitch[ing] the first portion of the optimized version ... with the segment of the optimized version ... to generate a stitched optimized version,” and then “stream[ing] the stitched optimized version ... for playback on the client [computing] device.” ’633 Patent at 22:55-61, 24:15-21; ’442 Patent at 22:62-67, 24:16-22. Amazon’s argument manufactures a dispute where there is none—to introduce an additional limitation into the claims—and should be rejected.

The ’633 and ’442 Patents describe a system where video optimizers store optimized “portions” or “segments” of a “source file” in their caches. *See* ’633 Patent at 8:17-20 (“To more effectively manage the limited storage space in the local cache 155 of a video optimizer 150, the cache 155 may only store small segments or clips of an optimized source file.”); *see also id.* at 16:15-18. This is desirable “[b]ecause users typically do not watch an entire video streamed to and played back on a user device 110, storing an entire optimized source file in the local cache 155 is an inefficient use of storage space.” *Id.* at 8:21-25.

The ’633 and ’442 Patents further describe that the optimized “portions” or “segments” of a “source file” may be stored across the caches of multiple video optimizers, with a single video optimizer retrieving those “portions” or “segments” from the caches of the other video optimizers

and stitching the “portions” or “segments” together for streaming. *See id.* at 8:32-37 (“If different segments of a source file have been stored as optimized video preview files in local caches 155 of different video optimizers 150, a single video optimizer 150 may also be able to retrieve the segments from the different local caches 155 and stitch the segments together ...”); *see also id.* at 17:1-10. As an example, the patents describe a scenario where “three consecutive video segments may be cached in a cluster of video optimizers 150, each video optimizer 150 holding a different segment.” *Id.* at 17:11-13:

A first video optimizer may stream a stored preview from the optimized version of the source file and subsequently retrieve the source file beginning from a last key frame of the stored preview and transcode the source file from the last key frame, stitching the newly transcoded stream at the key frame to provide seamless playback on the user device 110. The first video optimizer continues transcoding the source file and streaming the optimized version until it reaches the beginning of an optimized video segment identified on another video optimizer. The first video optimizer may then retrieve the segment that has already been transcoded from the corresponding video optimizer. The first video optimizer 150 may continue requesting segments from the other video optimizers until the user stops watching the video or no optimized segments are available for a portion of the source file.

Id. at 17:13-29; *see also id.* at 15:42-50.

As part of the retrieval of optimized “portions” or “segments” from the caches of multiple video optimizers and the “stitching” together of these “portions” or “segments,” the ’633 and ’442 Patents do not describe that “stitching” involves “combining into a file,” as Amazon proposes. As demonstrated above, the patents do not describe “stitching everything together into a combined file, and caching it,” as Amazon argues. *Br.* at 23. Amazon’s reliance on the prosecution history of the ’633 Patent, *id.*, is similarly misplaced. Neither the specification nor the prosecution history indicates that the “stitching” process involves “combining into a file.” Amazon’s proposed construction is therefore contrary to the intrinsic record. As a result, Amazon cannot identify any lexicography or clear and unmistakable disclaimer that warrants redefining the scope of the term

“stitching.” See *Hill-Rom*, 755 F.3d at 1371 (“[w]e depart from the plain and ordinary meaning of claim terms based on the specification in only two instances: lexicography and disavowal.”). Accordingly, the Court should reject Amazon’s improper construction.

VI. INDEFINITENESS OF THE ’444 PATENT TERMS

Amazon cannot meet its burden to prove indefiniteness by clear and convincing evidence. See *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017) (“Indefiniteness must be proven by clear and convincing evidence.”). As an initial matter, Amazon’s invalidity arguments are directly contradicted by its own lack of assertion of indefiniteness of the same or similar terms in the Patents-in-Suit. For example, the claims of the ’633 and ’442 Patents both recite a “first portion of [an] optimized version of the original file” and “a segment of the requested optimized version of the original source file,” yet Amazon does not argue that these terms are indefinite. See ’633 Patent at 22:39-40, 22:53-54, 23:66-67, 24:13-14, ’442 Patent at 22:47-48, 22:60-61, 24:1-2, 24:15-16.

A claim is not indefinite so long as it informs a POSITA about the scope of the invention with “reasonable certainty.” *Nautilus, Inc. v. Biosig Instrus., Inc.*, 572 U.S. 898, 910 (2014). Amazon argues that a “POSITA would not have been able to understand with reasonable certainty the scope of ‘first portion,’ ‘next portion,’ and ‘providing last data’ in the context of the ’444 patent.” Br. at 24. Amazon’s arguments, however, are divorced from the clear structure of the claims, the teachings of the specification, and the knowledge of a POSITA.

A. “first portion” / “next portion”

“first portion”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	Indefinite.
“next portion”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	Indefinite.

Amazon argues that “first portion” and “next portion” are indefinite “because they are defined relative to each other, and nothing in the claims nor intrinsic record provide any objective boundaries for a POSITA to understand where the ‘first portion’ ends and the ‘next portion’ begins.” Br. at 25. But the terms are defined functionally and structurally within the claims. The claims recite: (i) “pre-fetch[ing] a first portion of an embedded media file,” ’444 Patent at 15:31, 16:28, 17:31; (ii) “stor[e][ing] the first portion of the embedded media file in a file cache of the user device,” *id.* at 15:32-33, 16:29-30, 17:32-33; (iii) “in response user-playback of the embedded media file, provid[e][ing], from the file cache, data from the first portion of the embedded media file for playback, *id.* at 15:34-36, 16:31-33, 17:34-36; (iv) “request[ing] a next portion of the embedded media file,” *id.* at 15:37, 16:34, 17:37; and (v) “in response to providing last data from the first portion of the embedded media file from the file cache for playback, switching to providing data from the next portion of the embedded media file,” *id.* at 15:43-46, 16:40-43, 17:43-46. *See also* Ex. 5, Goodrich Decl. at ¶ 45. The claims collectively constrain the “first portion of an embedded media file” with reasonable certainty: the “first portion” is that part of the embedded media file that is (i) pre-fetched before user-initiated playback, (b) stored in the user device’s file cache, and (c) played first when the user initiates playback and before any other parts of the embedded media file are played back. *See id.* at ¶ 46. As Dr. Goodrich explains, “that ‘only the first portion’ is stored in the file cache, from where it is provided on playback, further clarifies that

the ‘first portion’ is less than the entire ‘embedded media file’ because the claims also expressly require ‘request[ing] a next portion of the embedded media file.’” *Id.* (“A POSITA reading this language would understand precisely what kind of content qualifies as the ‘first portion’: the pre-fetched, locally (to the user device) cached initial segment of the media file used to enable immediate playback, and without retrieving the entire ‘embedded media file.’”).

The specification of the ’444 Patent provides further detail as to the length of the “first portion” that a POSITA would identify as disclosing the scope of the “first portion” and the “next portion” with reasonable certainty. More specifically, the ’444 Patent teaches that “the pre-fetch portion of the source file provides 5-30 seconds of playback.” ’444 Patent at 2:15–18. Similarly, the patent teaches that “additional source file data requested to continue video playback through the media player 111 may be requested in partial pieces or segments (e.g., 5 or 30 seconds at a time, a duration similar to the partial video pre-fetch).” *Id.* at 5:54-59. As Dr. Goodrich explains, the range of 5-30 seconds:

[D]efine[s] the size of the “first portion” with more than reasonable certainty while providing significant and necessary flexibility to implement the invention of the claims of the ’444 Patent. For example, a POSITA would take into account the following factors when determining the appropriate length of the “first portion”: desired encoding parameters (resolution bit rate, etc.), the nature of the network connection (and conditions) between the server and user device (persistent versus non-persistent connections), network capability (including, for example, the ability to handle jumbo packets, i.e., packets above 1,500 Bytes in length), and server efficiency. Shorter segments can reduce latency and improve adaptability under adverse network conditions and lesser network capability, while longer segments can improve quality under good network conditions and greater network capability and server efficiency.

Ex. 5, Goodrich Decl. at ¶ 47 (“first portion”); *see also id.* at ¶ 52 (“next portion”). Thus, Amazon is incorrect that the “specification provides no objective measure for selecting a specific duration within” the disclosed range. Br. at 27. The claims do not require numerical precision as Amazon

suggests. *Sonix Tech.*, 844 F.3d at 1377 (“[A] patentee need not define his invention with mathematical precision.”).

Amazon further argues that “the specification does not establish any relationship among ‘pre-fetch portion,’ ‘initial portion,’ and ‘first portion.’” Br. at 27. Amazon is incorrect because the specification uses these terms interchangeably. For example, while “initial portion” is used in describing an instance “where ABR is supported,” *see* ’444 Patent at 6:30-38, the term is also used in the preceding paragraph that does not describe an instance “where ABR is supported”. *See id.* at 6:13-18 (“the network fetcher 117 may request an initial portion (e.g., 5-30 seconds) of each video source file to populate the file cache 115 with a video pre-fetch for each video”); *see also* Ex. 5, Goodrich Decl. at ¶ 49. Furthermore, the specification generally uses the term “segment” to refer to those “portions” of an “embedded media file” after the “first portion.”⁵ There is no ambiguity in the ’444 Patent’s interchangeable use of the terms “portion” and “segment.”

Amazon similarly asserts that “the specification also provides no objective measure for a POSITA to determine whether a length of time outside of the 5 to 30 second meets the claim scope,” Br. at 27, and that it “provides a POSITA with no objective boundaries for determining how much of a video is too much to be a first portion,” *id.* at 27-28. In doing so, Amazon asserts that the 30 second boundary is hard and fast, but they provide no basis for such a boundary. Regardless, a POSITA would understand that the scope of the “first portion” and the “next portion”

⁵ *See* ’444 Patent at 2:19-26 (“In an example automatic video play application, the pre-fetch portion of the source file may loop to provide a preview of the source file. In turn, if the user chooses to play the source file, the user device initiates playback of the pre-fetched portion to begin presentation of the video and requests the remaining data of the source file to continue video playback. ***The remaining data of the source file may also be requested in segments.***”), 5:54-59 (“***additional source file data requested to continue video playback*** through the media player 111 ***may be requested in partial pieces or segments*** (e.g., 5 or 30 seconds at a time, a duration similar to the partial video pre-fetch”); *see also* Ex. 5, Goodrich Decl. at ¶ 52.

with reasonable certainty. *See* Ex. 5, *Goodrich Decl.* at ¶¶ 48 (“A POSITA would be aware of the network and video streaming techniques that would be employed (1) on the server side to properly fragment the ‘first portion,’ and then packetize and transmit over the network, and (2) on the user device side to properly receive and reassemble the ‘first portion.’”), 51 (same).

Finally, Amazon argues that the prosecution history does not resolve the ambiguity of the specification. Br. at 28. Because the claims and specification of the ’444 Patent already apprise a POSITA with reasonable certainty as to the scope of “first portion” and “next portion,” the prosecution history, which does not detract from that appraisal, has no impact. *See* Ex. 5, *Goodrich Decl.* at ¶ 50.

The fact that the claimed “first portion” and “next portion” provide some breadth and flexibility and allow for the claimed invention to be implemented in different ways does not mean that the terms are indefinite. *See, e.g., Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1347 (Fed. Cir. 2022) (“a claim is not indefinite just because it is broad.”); *CyWee Grp., Ltd. v. Huawei Device Co.*, No. 2:17-cv-00495 WCBRSP, 2018 WL 6419484, at *20 (E.D. Tex. Dec. 6, 2018) (“That the claim is drafted broadly enough to cover multiple embodiments does not render the claim indefinite.”). Viewed in light of the overall claim and specification, the claims of the ’444 Patent inform a POSITA about the scope of “first portion” and “next portion” with reasonable certainty, and no construction is necessary for these terms. Amazon’s indefiniteness argument fails.

B. “providing last data”

“providing last data”	
Tir’s Proposed Construction	Amazon’s Proposed Construction
No construction necessary.	Indefinite.

Amazon argues that “providing last data” is “independently indefinite because the claim language and specification fail to specify when the last data is ‘provided.’” Br. at 30. More specifically, Amazon contends that “‘providing last data’ could refer to ... the last byte read from the file cache, the last byte delivered to the media player, the last decoded frame displayed, the last audio sample, or a boundary aligned to a segment, frame, or keyframe.” Br. at 30; Dkt. No. 62-10, Bhattacharjee Decl. at ¶ 84. However, as Dr. Goodrich explains, a POSITA would recognize that dependent upon the architecture of the user device, some of the given examples (within the knowledge of a POSITA) could be used to determine when to “provide [the] last data”:

[A] POSITA would understand that the exact point at which “last data” is “provided” will be dependent upon numerous factors, including the architecture and design of the decoder (e.g., a software-based decoder versus a hardware or ASIC-based decoder) and the architecture and design of the memory management. For example, if a software-based decoder is used, with a decoder and memory manager characterized by longer latency, a POSITA would recognize that “providing last data” could be considered to occur as early as with the last keyframe (a frame with complete data for the entire frame, the complete data serving as a reference point for subsequent compressed frames which are sometimes called delta frames) of the “first portion” such that the first keyframe of the “next portion” is ready to be processed by the decoder when it has completed processing of the last frames of the “first portion.” In another example, if a hardware-based decoder is used, with a decoder and memory manager characterized by very short latency, a POSITA would recognize that the last byte delivered to the media player, i.e., to the decoder, could be the exact point at which the switch is made (assuming that the user device could provide the “next portion” to the decoder on the next “clock cycle”).

Ex. 5, *Goodrich Decl.* at ¶ 54. “[A] POSITA, in view of the disclosure of the ’444 Patent, would view ‘providing last data’ with more than reasonable certainty given the necessary flexibility a POSITA would recognize to implement the invention of the claims of the ’444 Patent.” *Id.* (citing ’444 Patent at 11:29-35 (“The source multiplexer 113A switches from the file cache 115 to the network fetcher 117 once the pre-fetch segment is consumed in order to return 313B the source file data for the second (and any additional) segment to the media player 111 to allow continuation of source file playback at the user device.”)).

The fact that the claimed “providing last data,” like “first portion” and “next portion,” provides some breadth and flexibility and allows for the claimed invention to be implemented in different ways does not mean that the terms are indefinite. *See Niazi Licensing*, 30 F.4th at 1347; *CyWee Grp.*, 2018 WL 6419484, at *20. Viewed in light of the overall claim and specification, the claims of the ’444 Patent inform a POSITA about the scope of “providing last data” with reasonable certainty, and no construction is necessary for this term. Amazon’s indefiniteness argument fails.

VII. CONCLUSION

For the foregoing reasons, Tir respectfully requests that the Court adopt its proposed construction for each of the disputed claim terms.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that this document is being served upon counsel of record on April 22, 2026 via electronic service.

/s/ Brett Cooper
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