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

CASCADES STREAMING TECHNOLOGIES, LLC,	)	
	)	
Plaintiff,	)	13 C 1455
	)	
vs.	)	Judge Feinerman
	)	
BIG TEN NETWORK, LLC,	)	
	)	
Defendant.	)	

MEMORANDUM OPINION AND ORDER

Cascades Streaming Technologies, LLC, alleges in this suit that Big Ten Network, LLC

("the Network"), infringed U.S. Patent No. 8,156,236 ("the '236 patent"). Doc. 35. The parties

dispute the construction of numerous terms in fifteen of the patent's asserted claims, and they

have briefed those disputes pursuant to Local Patent Rule 4.2. Docs. 52, 61, 63, 126, 131-132,

135, 138, 143. After the court conducted a *Markman* hearing, Docs. 99-100; *see Markman v.*

Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996),

the case was reassigned to the undersigned judge's calendar, Doc. 105. Having reviewed the

transcripts and considered all of the written materials, the court construes the disputed terms as

set forth below.

Background

A.   The '236 Patent

The '236 patent, titled "Audio-Video Data Switching and Viewing System," describes

systems and methods for streaming multimedia files over a network and allowing users

seamlessly to switch the files being streamed. Doc. 55 at 4, 9. Cascades alleges that the

Network's "video on-demand products," including its "BTN2GO" service, infringe claims 16-

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22, 25-31, and 34 of the '236 patent. Doc. 35 at ¶ 8. Those claims, with the disputed terms in

italics, read as follows:

Claim	Text
16	A system for viewing and switching of audio-video data, comprising: a plurality of audio and video sources containing information referring to an event; a streaming server for streaming contents of a *first audio file* and a first and second video files from the audio and video sources to a plurality of users over a network, the *first audio file* being *interleaved* with the first video file, the streaming server *establishing separate sessions with the plurality of users by sending each user a separate stream*, at least one of the video files having a *key frame*; and a feed distributor, connected between the audio and video sources and the streaming server, the feed distributor controllably feeding the *first audio file* and first video file to the streaming server, wherein the feed distributor can receive instructions from a user to switch between video files, wherein the video files are differentially compressed before streaming and comprise *key frames*, and wherein switching between the first video file and the second video signal occurs when the *key frame* is encountered.
17	A method for viewing and switching of audio-video data over a network using a client-server system, comprising the steps of: providing a plurality of audio and video sources containing information referring to an event; *streaming on a server* contents of a *first audio file* and a first video file from the audio and video sources to a plurality of users over a network, the *first audio file* being *interleaved* with the first video file; *establishing separate sessions with the plurality of users by sending each user a separate stream*; *controlling on the server the streaming of the video files, so as to switch between video files, and streaming, upon switching, a second video file which is different from the first video file*, wherein the video files are differentially compressed before streaming and comprise *key frames*, and wherein the controlling step switches between the first video file and the second video file when a *key frame* of one of the video files is encountered.

18	A computer-operated method for viewing and switching of audio-video data over a network using a client-server system, comprising the steps of: (a) providing at least a *first audio file* and at least first and second video files containing information referring to same [sic] event; (b) *streaming on a server* contents of the *first audio file* and the first video file to a plurality of users over a network, the *first audio file* being *interleaved* with the first video file; (c) *establishing separate sessions with the plurality of users by sending each user a separate stream*; (d) *simultaneously with step (b)*, outputting the second video file, *the second video file being different from the first video file*; and (e) *controlling on the server side the streaming of video files, so as to switch streaming from the first video file to the second video file for at least one user*.
19	The method of claim 18 wherein upon switching in step (e), the *first audio file* continues to be streamed.
20	The method of claim 18 wherein upon switching in step (e), a second different *audio file* is streamed.
21	The method of claim 18 wherein the video files have a *key frame*, and the step of switching in step (e) occurs when a *key frame* of one of the video files is detected.
22	A system for viewing and switching of audio-video data, comprising: a plurality of audio and video sources containing information referring to an event; a *streaming server* for streaming contents of a first audio file and a first video file from the audio and video sources to a plurality of users over a network, the first audio file being *interleaved* with the first video file, the *streaming server* being configured for *establishing separate sessions with the plurality of users by sending each user a separate stream*; and a feed distributor machine, connected between the audio and video sources and the *streaming server*, the feed distributor machine being configured for controllably feeding the first audio file and first video file to the *streaming server*, the feed distributor machine also being configured for simultaneously outputting a second video file from the audio and video sources, *the second video file being different from the first video file*, the outputting of the second video file occurring without the second video file being streamed to a user,

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	wherein the feed distributor machine comprises a session manager that is configured to switch between video files whereby, upon switching, the feed distributor machine can cause the *streaming server* to stream the second video file to at least one selected user and stops streaming the first video file to the selected user.
25	The system of claim 22 wherein at least one of the video files has a *key frame* and the session manager is configured to instruct the feed distributor machine to switch when the *key frame* is detected.
26	A method for persistently streaming a plurality of multimedia files over a network, the method comprising the steps of: (a) establishing a *persistent connection* with a client by exposing an application-level protocol and initializing a steaming [sic] session with a server having a client side and a server side; wherein, the streaming session encapsulates a plurality of multimedia files that are for acknowledgement by the client *without using bandwidth of the streaming session*; (b) creating one or more instances of a software object comprising one or more of the encapsulated multimedia files to controllably feed a first instance in the streaming session; (c) exposing remote methods of the application-level protocol for exchanging requests and parameters on the server side and the client side to transmit commands to one or more instances of the software object; (d) receiving on the server side a client request for a second instance of the software object; (e) transferring the second instance of the software object to the streaming session; wherein the second instance of the software object is different than the first instance; and (f) switching to the second instance of the software object without interrupting the persistent streaming session.
27	The method of claim 26, wherein the step of switching to the second instance occurs when a *key frame* in one of the multimedia files is detected.
28	A system for persistently streaming a plurality of multimedia files over a network, the system comprising: (a) an application-level protocol for establishing a *persistent connection* with a

	client and initializing a streaming session with a server, the server having a server side and a client side; wherein, the streaming session encapsulates a plurality of multimedia files that are transmitted for receipt by the client *without using bandwidth of the streaming session*; (b) one or more instances of a software object comprising one or more multimedia files to controllably feed a first instance in the streaming session; wherein the one or more multimedia files is selected from the encapsulated plurality of multimedia files; (c) one or more server side objects communicatively coupled to the application-level protocol for exposing one or more remote methods of the protocol for exchanging requests and parameters with a client side object to transmit commands to one or more instances of the software object; and (d) one or more client side objects communicatively coupled to the application-level protocol for exposing one or more remote methods of the protocol for exchanging requests and parameters with the server side object to transmit commands to one or more instances of the software object.
29	The system of claim 28, wherein the plurality of multimedia files comprise differential [sic] compressed video frames.
30	The system of claim 28, wherein the one or more instances of the software object has a persistent streaming session bandwidth that is substantially the same as a single multimedia file.
31	The system of claim 28, wherein the one or more client side objects are requests from a user.
34	The system of claim 28, wherein the plurality of multimedia files comprises live encoded sources.

Doc. 55 at 21-22.

The '236 patent was granted to Filippo Costanzo, Saverio Roncolini, and Antonio Rossi ("the Inventors") on April 10, 2012, based on Application No. 12/497,273 ("the '273 application"), which was filed on July 2, 2009. Doc. 55 at 4. The patent purports to be a continuation of Provisional Application No. 60/218,507 ("the '507 provisional application"),

which was filed on July 15, 2000. *Ibid.*; *id.* at 9, col. 1, ll. 6-10. Cascades alleges that it is the '236 patent's exclusive licensee. Doc. 35 at ¶ 7.

The '236 patent states that the "present invention relates to webcast streaming of audio-visual events. More specifically, the invention relates to an audio-video data switching and viewing system which allows viewing and smooth remote switching from one video signal to another or from one audio signal to another." Doc. 55 at 9, col. 1, ll. 14-18. Before the invention, streaming services switched the streamed file in two ways. Doc. 55 at 9. First, the server could transmit every possible file simultaneously to the user. *Id.* at 9, col. 1, ll. 40-42. That way, if the user wanted to access a different file in the middle of a stream, a buffer for that new file would already be stored on her computer. The problem was that the network resources necessary for streaming would increase in direct proportion to the number of files available to the user, causing it to take longer for all of the files to arrive at the user's computer. *Id.* at 9, col. 1, ll. 49-51. Second, the server could transmit only one file at a time, and then when the user wanted to switch, the server would stop transmitting the first file and start transmitting the second. *Id.* at 9, col. 2, ll. 4-26. The problem was that the switch would disrupt the stream, as the user would have to sit through seconds of nothingness while her computer built up a buffer for the new file. *Ibid.*

The '236 patent (says that it) solves both problems; it allows users to switch seamlessly between the files being received, but does not tax the network connection by transmitting unused data. *Id.* at 9, col. 2, ll. 30-37. In the preferred embodiment, a server receives audio and video data from a "feed distributor" and streams the data to the user's computer. In response to a signal from the user, the feed distributor provides the server with different audio or video data—for instance, video data representing a different point of view of the same event—and the server

passes on that new data to the user. In this way, the user can switch among different audio-visual streams without establishing new connections with the server (which takes time and interrupts the viewing experience) and without the server simultaneously transmitting every file (which slows the transmission). *Id*. at 10, col. 3, ll. 26-33.

B.   Prosecution History

On December 27, 2010, the Patent Office rejected every proposed claim of the '273 application. Doc. 55 at 143-44. It concluded that most of the proposed claims were anticipated by U.S. Patent Application Publication 2002/0038374, filed in 1998 by Anoop Gupta and Nosakhare D. Omoigui. *Id*. at 147; *see* U.S. Patent Application Publication 2002/0038374 (filed Sept. 15, 1998). With respect to those claims, the Patent Office explained:

> Gupta teaches, a computer system for feeding audio-video data to a plurality of users, comprising … a feed distributor, connected between the audio and video sources and the streaming server, the feed distributor controllably feeding the first audio file and first video file to the streaming server, wherein the feed distributor can receive instructions from a user-operated control unit files, wherein upon switching, the feed distributor feeds to the streaming server a second video file which is different from the first video file without altering the first audio file, the second video file being interleaved with the first audio file.

Doc. 55 at 147-48. The other claims were rejected on obviousness grounds. *See id*. at 150-51 (concluding that those claims, while not anticipated by Gupta, were obvious). Although the Gupta application "fail[ed] to disclose" the requirement in those claims that "each [streamed] video file [must] correspond[] to a different point of view of the event," the examiner reasoned that "[i]t would have been obvious at the time the invention was made to a person having ordinary skill in the art to have additional streams that have different content since it does not affect the operation of the prior art Gupta and it is desirable to have different types of data." *Ibid*.

The Inventors filed a response to the rejection. Doc. 55 at 119-37. They argued:

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Gupta is directed to a system that stores multiple "speed" versions of the audio and video content for play back at different speeds. This is completely different than Applicant's invention where the video is switched from one stream to a completely different stream without any alterations to the video or audio. Further, Gupta requires that "the multimedia player repeats a portion of the multimedia content and begins playing at the new speed." This inherently means that the invention in Gupta interrupts the video and audio stream to repeat previously view [sic] material again. Also, unlike Applicant's invention the audio in Gupta will be altered in duration and compensated for the pitch to remain unmodified when the user selects to play the stream at "timelines modified by factors of 0.5, 1.0, and 2.0." Moreover Gupta does not teach a switching streaming technology not in [0082] nor in [0096], the concept of smooth switching is completely absent in Gupta, the term "switch" or a synonym is not present in the cited reference. Applicant's invention does not contain these limitations and in fact overcomes the limitations of Gupta and other prior art streaming methods by allowing the user to smoothly switch views of a streaming broadcast without interruption or repetition.

Id. at 134. The Patent Office reversed its rejection and granted the '236 patent. Doc. 52 at 10.

C.   The Disputed Claim Terms

The parties dispute the construction of the following ten claim terms, and propose the

following constructions:

Claim Term	Cascades's Proposal(s)	The Network's Proposal
"first audio file" (claims 16-19, 22) / "audio file" (claim 20)	An "audio file" is the output of an audio source, including a live feed, representing digitized information that can be used to recreate sounds associated with an event. "First" is one of two or more audio files.	"File" is a collection of data identified as a unit by a unique name. "Audio file" means a collection of audio data identified by a unique name. Therefore, a "first audio file" is one of two or more collections of audio data identified as a unit by a unique name.
"a second video file which is different from the first video file" (claim 17) / "the second video file being different from the first video file" (claims 18, 22)	The second file has different content, for example, a different camera angle or additional image detail, from another video file.	The second of two video files having a different point of view from that in the first video file.

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"interleaved" (claims 16-18, 22)	Multiplexed audio and visual data for optimizing rendering, for example, one-to-one, in a stream, with other adjustable parameters.	Configured into a single stream having segments of the first audio file in an alternating sequence with segments of the first video file.
"streaming on a server" (claims 17-18) / "streaming server" (claims 16, 22)	Receiving one or more audio and one or more video files or sources pertaining to an event at a server computer and relaying data from the server over a computer network, allowing playback to proceed on a user device while further data is being received. A "streaming server" means a computer that receives one or more audio and one or more video files or sources pertaining to an event, and that relays data over a computer network, allowing playback to proceed on a user device while further data is being sent by the computer.	"Streaming" means transmitting data such that playback can proceed on the user's device as data is being received at the device. "Streaming server" means a computer used for streaming.
"establishing separate sessions with the plurality of users by sending each user a separate stream" (claims 16-18, 22)	Establishing a stream, preferably in unicast, that is separate from other communications of the server side with other clients.	Initiating a new, discrete network communication with each end-user that continues for the duration of a separate stream.
"controlling on the server the streaming of the video files, so as to switch between video files, and streaming, upon switching, a second video file which is different from the first	*Initial proposal*: Selecting different video data to be streamed to a user in response to a control signal from the user side, preferably at a key frame.	Determining on the server when to switch from streaming, to at least one user, a stream including the first audio file and the first video file to a stream including the first audio file and the second video file. "User" means a person viewing on a

video file" (claim 17) / "controlling on the server side the streaming of video files, so as to switch streaming from the first video file to the second video file for at least one user" (claim 18)	*Modified proposal*: Determining on the server side the manner of switching the streaming, to at least one user, from one video file to a second video file.	device audio and video files representing an event.
"[step] (d) simultaneously with step (b)" (claim 18)	These steps require [Step (d)]: The playing of a second video stream on the client after the completion of a switching operation.	Steps of method claim 18 performed in the following sequence: 1. Step (a) 2. Steps (b) and (d) performed at the same time 3. Step (c) 4. Step (e)
"key frame" (claims 16-17, 21, 25, 27)	*Initial proposal*: A video frame at which switching from one file to another occurs. *Modified proposal*: A video frame that is not differentially compressed and at which switching occurs.	A frame which is not differentially compressed.
"persistent connection" (claims 26, 28)	*Initial proposal*: Employing the same connection for multiple requests and responses occurring between a server and client, rather than a new connection for every request or every response. *Modified proposal*: A separate network connection between a server and a client that can remain active for multiple requests and responses between server and client.	A single, unique network connection between a server and a client that remains active for multiple requests and responses between server and client for the duration of the user's viewing of the event.

"without using bandwidth of the streaming session" (claims 26, 28)	Without using any bandwidth used for streaming the multimedia files.	Without using any bandwidth of the connection used for streaming the multimedia files.

Discussion

A patent gives the patentee the temporary "right to exclude others from making, using, offering for sale, or selling the patented invention." *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 638 (Fed. Cir. 2015) (en banc) (quoting 35 U.S.C. § 154) (brackets omitted). The scope of the patented invention is determined by the patent's claims—short statements describing what the public cannot do without the patentee's consent. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.") (internal quotation marks omitted). A court hearing a patent infringement suit must construe the patent's claims, both to settle disputes about their scope and to translate technical terms into concise definitions that jurors can understand. *See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement.") (quoting *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997)) (alteration omitted); *AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001) ("[T]he claim construction becomes the basis of the jury instructions, should the case go to trial."). Claim construction is a question of law, though it may require the court to make "subsidiary factual findings." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996) ("[J]udges, not juries, are the better suited to find the

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acquired meaning of patent terms."); *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346 (Fed. Cir. 2015) (en banc).

A court generally should give a claim's words their "ordinary and customary meaning, as they would be understood by one of ordinary skill in the art in question at the time of the invention." *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1321 (Fed. Cir. 2013); *see also Info-Hold, Inc. v. Applied Media Techs. Corp.*, 783 F.3d 1262, 1265 (Fed. Cir. 2015); *Source Vagabond Sys. Ltd. v. Hydrapak, Inc.*, 753 F.3d 1291, 1299 (Fed. Cir. 2014); *Function Media, L.L.C. v. Google, Inc.*, 708 F.3d 1310, 1320 (Fed. Cir. 2013). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314; *see also Shire Dev., LLC v. Watson Pharms., Inc.*, 787 F.3d 1359, 1367 (Fed. Cir. 2015); *Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 805 (Fed. Cir. 2007); *Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001) (noting that terms that "are not technical terms of art" generally "do not require elaborate interpretation"). If a term's meaning is not readily apparent to a generalist, however, the court must consult "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." *Phillips*, 415 F.3d at 1314 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

Publicly available sources fall into two categories—"intrinsic evidence" and "extrinsic evidence." *Phillips*, 415 F.3d at 1317. Intrinsic evidence consists of the patent itself and the official records dealing with the patent's creation, including "the words of the claims themselves, the remainder of the specification, [and] the prosecution history." *Id*. at 1314-17; *see also*

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Kaneka Corp. v. Xiamen Kingdomway Grp. Co., 790 F.3d 1298, 1304 (Fed. Cir. 2015) ("When interpreting claim language, courts consult the intrinsic record, which includes the specification and prosecution history."). Intrinsic evidence is the most important evidence of a term's ordinary meaning. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) ("When construing claims, the intrinsic evidence is the primary resource."); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) ("When construing claims … the intrinsic evidence and particularly the claim language are the primary resources."); *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1329 (Fed. Cir. 2007) ("Extrinsic evidence … may be helpful but is less significant than the intrinsic record in determining the legally operative meaning of claim language.") (internal quotation marks omitted); *Phillips*, 415 F.3d at 1317 ("[W]hile extrinsic evidence can shed useful light on the relevant art, we have explained that it is less significant than the intrinsic record in determining the legally operative meaning of claim language.") (internal quotation marks omitted). "Claim language must be viewed in light of the specification, which is the single best guide to the meaning of a disputed term." *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1324 (Fed. Cir. 2015) (internal quotation marks omitted). However, courts also must take care to avoid "importing limitations from the specification into the claim." *Phillips*, 415 F.3d at 1323; *see also Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) ("While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims."); *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1354 (Fed. Cir. 2012) ("While claim terms are understood in light of the specification, a claim construction must not import limitations from the specification into the claims."). Determinations based solely on intrinsic evidence are legal conclusions, not findings of fact. *See Teva*, 135 S. Ct. at 841 ("[W]hen the

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district court reviews only evidence intrinsic to the patent … the judge's determination will amount solely to a determination of law."); *Williamson*, 792 F.3d at 1346.

Extrinsic evidence is evidence from outside the intrinsic record that "shed[s] useful light on the relevant art," including "expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317. Extrinsic evidence "is less significant than the intrinsic record in determining the legally operative meaning of claim language." *Ibid*. (internal quotation marks omitted); *see also Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 790 F.3d 1329, 1338 (Fed. Cir. 2015) ("Under the circumstances, it was not legal error for the district court to rely on extrinsic evidence, because the extrinsic evidence was not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence."); *H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1332 (Fed. Cir. 2014) ("After considering [the] intrinsic evidence, a court may also seek guidance from extrinsic evidence such as expert testimony, dictionaries, and treatises."). A court relying on extrinsic evidence to construe a claim may need to make "subsidiary factual findings," such as deciding what a person with skill in the art would have understood a term of art to mean at the time of the invention. *Teva*, 135 S. Ct. at 841. After making the determination of fact, however, the court must make the further *legal* decision about what that term means "in the context of the specific patent claim under review." *Ibid*. (emphasis omitted).

The rule that a claim term bears its ordinary meaning has two exceptions: "lexicography and disavowal." *GE Lighting Sol'ns, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014); *see also Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) ("There are only two exceptions to this general rule [that claim terms bear their ordinary meaning]: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when

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the patentee disavows the full scope of a claim term either in the specification or during

prosecution."). "Lexicography" refers to the principle that a patentee is entitled to redefine

terms—to "act as its own lexicographer." *Hill-Rom*, 755 F.3d at 1371 (internal quotation marks

omitted). If the patent's specification "clearly set[s] forth a definition of [a] disputed claim term

other than its plain and ordinary meaning" and "clearly express[es] an intent to redefine the

term," then that definition prevails. *Ibid.*; *see also Braintree Labs., Inc. v. Novel Labs., Inc.*, 749

F.3d 1349, 1356 (Fed. Cir. 2014) ("Under our precedent, the patentee's lexicography must

govern the claim construction analysis."); *SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187,

1195 (Fed. Cir. 2013) ("If the specification reveals a special definition given to a claim term by

the patentee that differs from the meaning it would otherwise possess, the inventor's

lexicography governs.") (internal quotation marks and alterations omitted).

        The second exception, "disavowal," refers to the principle that the patent applicant can

disclaim in statements during prosecution that the patent applies to certain technology, even if

the claims, given their ordinary meanings, would cover that technology. *See Computer Docking

Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1379 (Fed. Cir. 2008) ("Here the sum of the

patentees' statements during prosecution would lead a competitor to believe that the patentee had

disavowed coverage of laptops."). Disavowal is also known as "disclaimer." *See Hill-Rom*, 755

F.3d at 1372 (using the terms interchangeably); *GE Lighting Sol'ns*, 750 F.3d at 1309 ("There

are certainly cases where we have found disavowal or disclaimer based on clear and

unmistakable statements by the patentee that limit the claims."); *Uship Intellectual Props., LLC

v. United States*, 714 F.3d 1311, 1313-16 (Fed. Cir. 2013) (calling the doctrine "disclaimer").

The applicant can make a disavowal in the patent's specification or in other communications

with the Patent Office. *See Pacing Techs., LLC v. Garmin Int'l, Inc.*, 778 F.3d 1021, 1025 (Fed.

Cir. 2015) ("Here, the specification similarly contains a clear and unmistakable statement of disavowal or disclaimer."); *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1367-68 (Fed. Cir. 2007) (holding that the specification disavowed claim scope); *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1317-18 (Fed. Cir. 2006) (same); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343 (Fed. Cir. 2001) (same); *see also Computer Docking Station*, 519 F.3d at 1377-79 (holding that the patentee's communications with the patent examiner disavowed claim scope); *Hockerson-Halberstadt, Inc. v. Avia Grp. Int'l, Inc.*, 222 F.3d 951, 957 (Fed. Cir. 2000) ("HHI's argument therefore reduces to a request for a mulligan that would erase from the prosecution history the inventor's disavowal of a particular aspect of a claim term's meaning."). Courts should not read a statement as a disavowal unless it evinces a "clear and unmistakable" intent to disavow claim scope. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325-26 (Fed. Cir. 2003); *see also Saffran v. Johnson & Johnson*, 712 F.3d 549, 559 (Fed. Cir. 2013) ("[A] prosecution disclaimer requires clear and unambiguous disavowal of claim scope.") (internal quotation marks omitted); *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 833 (Fed. Cir. 2003).

The court now construes the disputed claim terms—explicitly, as the Federal Circuit requires. *See AFG Indus.*, 239 F.3d at 1247 ("It is critical for trial courts to set forth an express construction of the material claim terms in dispute, in part because the claim construction becomes the basis of the jury instructions, should the case go to trial. It is also the necessary foundation of meaningful appellate review.") (citation omitted). The court is not obligated to choose the better of two incorrect proposed constructions; rather, it "has an independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the adversary parties." *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir.

1995) (further noting that "[t]he pursuit of that obligation in this case would have resulted in a determination that [one party's] preferred claim interpretation is incorrect, and that [the other party's] is only partly correct"); *see also Bancorp Servs., L.L.C. v. Sun Life Assurance Co. of Can. (U.S.)*, 687 F.3d 1266, 1274 (Fed. Cir. 2012) ("Just as a district court may construe the claims in a way that neither party advocates, [the Federal Circuit] may depart from the district court and adopt a new construction on appeal.") (citations omitted); *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1323-24 (Fed. Cir. 2008) ("Because the court has an independent obligation to construe the terms of a patent, we need not accept the constructions proposed by either party.").

I. "first audio file" (claims 16-19, 22) / "audio file" (claim 20)

The parties propose the following constructions of "first audio file" and "audio file":

The Network:	"File" is a collection of data identified as a unit by a unique name.
	"Audio file" means a collection of audio data identified by a unique name. Therefore, a "first audio file" is one of two or more collections of audio data identified as a unit by a unique name.
Cascades:	An "audio file" is the output of an audio source, including a live feed, representing digitized information that can be used to recreate sounds associated with an event. "First" is one of two or more audio files.

Doc. 52 at 9; Doc. 61 at 8.

The briefs dispute whether the output of a live feed can be an "audio file," but the Network conceded at the *Markman* hearing that it can be. Doc. 100 at 41:5-7 ("We don't dispute that a file can include, for example, a live source. Clearly one of the things they're talking about here is a live source."). The court treats the concession as a waiver and thus holds that the output of a live feed can be an audio file. *See Astrazeneca AB, Aktiebolaget Hassle, KBI-E, Inc. v. Mutual Pharm. Co.*, 384 F.3d 1333, 1341 (Fed. Cir. 2004) (treating as relevant to claim

construction that, "[a]t oral argument, Astrazeneca conceded that every one of [the listed] preferred solubilizers is a surfactant"); *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 889 (Fed. Cir. 2004) (holding that a party "waived its right to assert a construction other than 'matches or equals' for the term 'meet'" because it agreed to that construction in its briefs).

A live dispute about "first audio file" concerns whether a file must have a unique name; the Network argues that it must, and Cascades disagrees. Doc. 52 at 10-11; Doc. 61 at 9-11. The Network points out that the invention must be able to select audio files to transmit to the user and that it can select the right file only if the files have unique names. Doc. 55 at 12, col. 7, ll. 41-46 (noting that an instance of the invented system is "preferably described" by parameters, including "[l]ogic identifier of each point of view, which is unique and preferably locally defined"); *id*. at 15, col. 13, ll. 51-53 ("On return, the server session manager 26 knows the path of the file containing the audio samples and the path of each file containing the video samples."). So, the Network argues, "audio file[s]" need unique names, at least as the claims use that term. Doc. 52 at 10-11; Doc. 100 at 41:19-24.

The Network is correct that the invention works only if it can uniquely identify the files to stream, but it does not follow that the files need unique names. For one, the Network has not established that only collections of information with unique names can be uniquely identified; that may be true, but the intrinsic evidence does not prove that it is. And even if the Network's submission were true, it would not follow that having a unique name is a defining feature of a file. The fact that every X has a feature does not entail that an X *by definition* has that feature. No Cleveland Browns team has ever been to the Super Bowl (*see Super Bowl History*, http://www.pro-football-reference.com/super-bowl/ (last visited May 3, 2016)), but not having been to the Super Bowl is not part of the definition of "Cleveland Browns team." Similarly, the

supposed fact that every audio file that has ever existed *in fact* has had a unique name does not

mean that audio files *by definition* have unique names. Maybe tomorrow a savvy engineer will

discover another way to make files uniquely identifiable; maybe a savvy engineer working for

Big Ten Network already has. *See Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1371-72

(Fed. Cir. 2008) ("Our case law allows for after-arising technology to be captured within the

literal scope of valid claims that are drafted broadly enough."); *SuperGuide*, 358 F.3d at 878-79

(holding that the claim term "regularly received television signal" was not limited to analog

signals, even though digital signals were not widely broadcast until after the patent was filed).

At the same time, however, the intrinsic record does not *foreclose* a unique-name

requirement. Cascades points out that the '236 patent's specification never uses the phrase,

"unique name." Doc. 61 at 11. But that does not mean anything; if files by definition have

unique names, then the specification would not need to clarify that the invention's files do, too.

See Phillips, 415 F.3d at 1314 ("[T]he claim in this case refers to 'steel baffles,' which strongly

implies that the term 'baffles' does not inherently mean objects made of steel.").

The court therefore turns to the extrinsic evidence. Cascades cites a handful of district

court opinions that construe the term "file" without requiring a unique name. Doc. 61 at 9-10

(citing *Optimize Tech. Sol'ns, LLC v. Staples, Inc.*, 2013 WL 6170624, at *22-23 (E.D. Tex.

Nov. 20, 2013) (construing "personalized data file" and related terms to mean "a distinct

collection of information about or corresponding to a visitor"); *PageMelding, Inc. v. ESPN, Inc.*,

2013 WL 431600, at *6-7 (N.D. Cal. Feb. 1, 2013) (tentatively construing "file" to mean "a

collection of information capable of being stored"); *Intellectual Ventures I LLC v. Check Point*

Software Techs. Ltd., 2012 WL 6200337, at *3 (D. Del. Dec. 12, 2012) (construing "data file(s)"

to mean "a collection of any type of text or binary data that retains cohesion when presented to a

user"); *SSL Servs., LLC v. Citrix Sys., Inc.*, 816 F. Supp. 2d 364, 385 (E.D. Tex. 2011)

("Specifically, the Court concludes that one of ordinary skill in the art would interpret 'files' as 'a set

of data used by a program.'").

The Network responds with three technical dictionaries published around 2000, when the

patentees filed the '507 provisional application. Doc. 52 at 10. Technical dictionaries can be

valuable guides to the meaning of technical claim terms. *See Starhome GmbH v. AT&T Mobility*

LLC, 743 F.3d 849, 856 (Fed. Cir. 2014) ("As evidenced by technical dictionaries, one of

ordinary skill in the art would have understood a 'gateway' to be a connection between different

networks."); *Phillips*, 415 F.3d at 1318 ("We have especially noted the help that technical

dictionaries may provide to a court to better understand the underlying technology and the way

in which one of skill in the art might use the claim terms.") (internal quotation marks omitted).

On balance, however, the dictionaries cited by the Network show that people with skill in the art

would *not* have understood that files by definition have unique names. The Network points out,

for instance, that the Microsoft Computer Dictionary defines a "file" as "[a] complete, named

collection of information, such as a program, a set of data used by a program, or a user-created

document." Microsoft Press, *Microsoft Computer Dictionary* 183 (4th ed. 1999) (reproduced at

Doc. 53-2 at 4). But, as any James Smith who lives on Park Street would confirm, a thing can be

named without being named *uniquely*. *See* Mona Chalabi and Andrew Flowers, *Dear Mona,*

What's the Most Common Name in America?, FiveThirtyEight (Nov. 20, 2014, 7:37 AM),

http://fivethirtyeight.com/features/whats-the-most-common-name-in-america/ (last visited May

3, 2016); Jeff Guo, *We counted literally every road in America. Here's what we learned.*,

Washington Post GovBeat Blog (Mar. 6, 2015),

https://www.washingtonpost.com/blogs/govbeat/wp/2015/03/06/these-are-the-most-popular-

street-names-in-every-state/ (last visited May 3, 2016).

The Network does even worse by the Authoritative Dictionary of IEEE Standards Terms, which provides seven definitions of "file." Standards Information Network, *The Authoritative Dictionary of IEEE Standards Terms* 432 (7th ed. 2000) (reproduced at Doc. 53-1). Five of the definitions, including the first two, do not mention "names" at all. *Ibid.* ("(1) (computers) A collection of related records treated as a unit. … (2) (software) (data management) A set of related records treated as a unit. … (4) An object that can be written to, or read from, or both. … (5) An object that can be written to, or read from, or both. … (7) An abstraction of the mechanism for the allocation, deallocation, initialization, and use of memory resources in a device."). Definition six, meanwhile, states only that a file is "*usually* treated as a named unit of storage," which implies that it is not *always* or *by definition* treated as a named unit of storage. *Ibid.* (emphasis added). Only the third definition—"One named collection of data"—requires files to have names; and, as discussed above, not all names are unique. *Ibid.* In fact, of the nine definitions of "file" in the dictionaries cited by the Network, only one actually supports the Network's position that files inherently have unique names. *See* Bryan Pfaffenberger, *Webster's New World Dictionary of Computer Terms* 211 (8th ed. 2000) (reproduced at Doc. 53 at 3) (defining "file" as "[a] document or other collection of information stored on a disk and identified as a unit by a unique name."). That holds up poorly against the six definitions imposing no naming requirement at all.

In sum, the available extrinsic evidence weighs strongly against the Network's position. The court therefore finds that people having skill in the art at the time of the invention would not have understood the term "file" to refer exclusively to things with unique names. And because the intrinsic evidence does not suggest that the term means something different in the context of the '236 patent, the court holds that "file[s]," as the asserted claims use the term, do not need unique names.

Accordingly, the court construes the term "first audio file" as follows:

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>A "file" is a collection of data that can be identified and treated as a unit by a computer program. An "audio file" is a file containing audio data. A "first audio file" is one of two or more audio files.

II. **"a second video file which is different from the first video file" (claim 17) / "the second video file being different from the first video file" (claims 18, 22)**

The parties propose the following constructions of the disputed terms:

>*The Network*: The second of two video files having a different point of view from that in the first video file.

>*Cascades*: The second file has different content, for example, a different camera angle or additional image detail, from another video file.

Doc. 52 at 11; Doc. 61 at 11.

Claims 17, 18, and 22 (and their dependent claims) apply only when the system switches from streaming one video file to streaming a "different" video file. The Network argues that the video files must represent different points of view of the same event; for example, if one file represents an overhead view of a baseball game, the other might represent a view of the same game from behind the pitcher's mound. Doc. 52 at 11-16. Cascades, by contrast, argues that the claims apply whenever the video files have "different content"—that is, whenever they differ in *any* way. Doc. 61 at 11-14. For example, Cascades asserts that two video files are "different" for the purposes of these claims if they differ only in image quality. *Id*. at 11.

If claim construction always required courts to give terms their ordinary meanings, Cascades would easily win this argument. Because the ordinary meaning of "different" is "not the same," two video files are "different" if they are incongruous in *any* way. It would be obtuse to say that two video files that represent the same event from the same perspective but with different image quality are "not different." But claim construction does not always require courts to give terms their ordinary meanings. As noted above, a patent applicant is entitled to act as a lexicographer, defining terms in the patent's specification to mean something other than

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what they ordinarily do. *See Braintree Labs.*, 749 F.3d at 1356. Moreover, a patentee can disavow—in the patent's specification or in other communications with the Patent Office—that the patent covers certain embodiments. *See Computer Docking Station*, 519 F.3d at 1379.

The Network argues that the Inventors disavowed technology that does not involve switching between video files representing different points of view. It first points to statements in the specification. Doc. 52 at 12-13; Doc. 63 at 7. The specification frequently describes "the present invention," and on occasion mentions that the invention allows users to switch between video files representing different points of view of an event. *E.g.*, Doc. 55 at 9, col. 2, ll. 30-37 ("The present invention solves the prior art problems cited above, by allowing each user to remote controlling [sic] between different cameras …."); *id.* at 10, col. 3, ll. 25-32 ("The present invention overcomes the problems of the prior art in several aspects …. The Internet connection carries, at every time, only one video stream and one audio stream. As a consequence, a virtually unlimited number of different points of view can be used."); *id.* at 10, col. 3, ll. 33-35 ("In accordance with the present invention, there is no need to establish a new session over a new connection each time a switching of point of view occurs."). The Network contends that when a patent's specification states that "the present invention" or "this invention" has a certain feature, it limits the scope of the patent to technology having that feature; so, the '236 patent's specification limits the patent's scope to systems in which the user switches between video files representing different points of view. Doc. 52 at 12-13; Doc. 63 at 7.

The Federal Circuit has sometimes stated broadly that "[w]hen a patent … describes the features of the 'present invention' as a whole, this description limits the scope of the invention." *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007); *see also Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1330 (Fed. Cir. 2009) ("[W]hen the

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preferred embodiment is described in the specification as the invention itself, the claims are not

necessarily entitled to a scope broader than that embodiment.") (quoting *Chimie v. PPG Indus.*

Inc., 402 F.3d 1371, 1379 (Fed. Cir. 2005)); *Honeywell*, 452 F.3d at 1318 ("The public is entitled

to take the patentee at his word and the word was that the invention is a fuel filter."). But the

Federal Circuit has on other occasions cautioned that use of the phrase, "the present invention,"

does not define the patent's scope "where the references to a certain limitation as being the

'invention' are not uniform, or where other portions of the intrinsic evidence do not support

applying the limitation to the entire patent." *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659

F.3d 1121, 1136-37 (Fed. Cir. 2011). And, as noted, the Federal Circuit insists that language in

the specification can overcome the ordinary meaning of claim terms only if the specification's

disavowal of that meaning is "clear and unmistakable." *Thorner*, 669 F.3d at 1366-67; *see also*

GE Lighting Sol'ns, 750 F.3d at 1309 ("The standards for finding lexicography and disavowal

are exacting."); *ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374, 1378 (Fed. Cir. 2003) ("The

specification may limit the scope of a claim if the patentee has disavowed or disclaimed the

scope by using words or 'expressions of manifest exclusion or restriction, representing a clear

disavowal of claim scope.'") (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325

(Fed Cir. 2002)).

Given those standards, the Network's argument is unconvincing. First, the specification

often describes "the present invention" without mentioning different points of view. *E.g.*, Doc.

55 at 9, col. 1, ll. 14-19 ("The present invention relates to webcast streaming of audio-visual

events. More specifically, the invention relates to an audio-video data switching and viewing

system which allows viewing and smooth remote switching from one video signal to another or

from one audio signal to another."); *id.* at 9, col. 2, ll. 39-54 (describing "a first aspect" of "the

present invention" without mentioning different points of view); *id*. at 9-10, cols. 2-3 (same, but with "a second aspect" of "the present invention"); *id*. at 10, col. 3, ll. 4-13 (same, but with "a third aspect"); *id*. at 10, col. 3, ll. 13-22 (same, but with "a fourth aspect"). The Federal Circuit has held that the specification does not clearly and unmistakably impose a limitation on the patent's scope where, as here, it only occasionally describes "the present invention" as having the limitation. *See Voda v. Cordis Corp.*, 536 F.3d 1311, 1320-22 (Fed. Cir. 2008).

Second, the portions of the specification that do refer to switching between different points of view often speak about it as a *possible use* of the invention rather than as an *inherent feature* of it. *E.g.*, Doc. 55 at 9, col. 2, ll. 30-32 ("The present invention solves the prior art problems … by *allowing* each user to remote controlling [sic] between different cameras.") (emphasis added); *Id*. at 10, col. 3, ll. 28-30 ("[A] virtually unlimited number of different points of view *can be used*.") (emphasis added). "An invention may possess a number of advantages or purposes, and there is no requirement that every claim directed to that invention be limited to encompass all of them." *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1370 (Fed. Cir. 2003) (holding that a device could infringe a patent even though the specification described the invention as allowing users to withdraw money from ATMs and the device was too large to fit into an ATM's card slot); *see also Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1331 (Fed. Cir. 2004) (noting that although "the patentees describe their invention as having the ability to rotate through 360°, this particular advantage is but one feature of the invented search light," and holding that the accused device, which could not rotate through 360°, infringed the patent). In *Phillips*, for instance, the specification stated that one advantage of the invention's "baffles" was that they made the invention—a reinforced wall segment—bulletproof. The court held that a wall segment whose internal structures could not stop bullets nevertheless could infringe the

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patent, reasoning: "While [the] statement [in the specification] makes clear the invention envisions baffles that [deflect projectiles], it does not imply that in order to qualify as baffles within the meaning of the claims, the internal support structures must serve the projectile-deflecting function in all the embodiments of all the claims." 415 F.3d at 1325. Just so, the fact that the invention of the '236 patent is useful for switching seamlessly between different points of view does not imply that switching between different points of view is a necessary feature of the invention—and it certainly does not imply that clearly or unambiguously.

Third, as Cascades points out, language in the claims themselves suggests that the claims are not all limited to systems that allow switching between points of view. Claim 12, an independent claim, states in relevant part:

> A method for viewing and switching of audio-video data over a network using a client-server system, comprising the steps of: … streaming, upon switching, a second video file which is different from the first video file without altering the first audio file.

Doc. 55 at 21, col. 25, ll. 28-42. Claim 14 is dependent upon claim 12; that is, it incorporates claim 12 and adds extra limitations, so that it covers a subset of what claim 12 covers. *See* 37 C.F.R. § 1.75(c) ("One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application."). Claim 14 states: "The method of claim 12, wherein the plurality of audio and video source signals comprises a single audio source signal and a plurality of video sources, each video signal corresponding to a different point of view of the event." Doc. 55 at 21, col. 25, ll. 47-50. Claim 14 describes its scope, in other words, as identical to claim 12's, except that claim 14 applies only to methods (1) providing one audio signal and multiple video signals (2) in which the video signals represent different points of view. That implies that claim 12 is not so limited—that it covers methods providing multiple audio signals and methods in which the video signals do not represent

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different points of view. *See Hill-Rom*, 755 F.3d at 1374 ("The presence of a dependent claim

that adds a particular limitation raises a presumption that the limitation in question is not found

in the independent claim.") (internal quotation marks and brackets omitted); *Liebel-Flarsheim*

Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("The juxtaposition of independent

claims lacking any reference to a pressure jacket with dependent claims that add a pressure

jacket limitation provides strong support for Liebel's argument that the independent claims were

not intended to require the presence of a pressure jacket."); *Phillips*, 415 F.3d at 1314 (noting

that the phrase "steel baffles" implies that baffles are not inherently made of steel).

 The Network retorts that Cascades has not alleged infringement of claims 12 or 14. Doc.

63 at 10. That argument is a non sequitur; "[o]ther claims of the patent in question, both asserted

and unasserted, can … be valuable sources of enlightenment as to the meaning of a claim term."

Phillips, 415 F.3d at 1314; *see also SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1368

(Fed. Cir. 2010); *nCube Corp. v. Seachange Int'l, Inc.*, 436 F.3d 1317, 1321-22 (Fed. Cir. 2006)

(reasoning that, because two unasserted claims "specifically described" a limitation, it was

proper not to read that limitation into an asserted claim that did not specifically describe it). The

Network also points out that claim 14 specifies *two* limitations other than those in claim 12—the

video signals must represent different points of view *and* there can be only one audio signal—

and contends that it is therefore irrelevant that claim 14 mentions different points of view. Doc.

63 at 10. It is true that Cascades's "claim differentiation" argument would be stronger if the only

difference between the two claims were claim 14's requirement that the video signals represent

different points of view. *See Andersen*, 474 F.3d at 1370. But the Network is the party fighting

against the claim's ordinary meaning. The language of claims 12 and 14 is evidence that the

asserted claims use "different" in its ordinary sense. That lands a blow against the Network's

position in light of the "heavy presumption" that the ordinary sense is the correct one. *Starhome*, 743 F.3d at 857 (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)).

The Network points to recent statements by the Patent Office to support its interpretation of the '236 patent's specification. Cascades applied for another, related patent in U.S. Patent Application No. 13/403,841 ("the '841 application"). The '841 application is a continuation of the '273 application, and its specification is nearly identical to that of the '236 patent. Doc. 135-2. Proposed claim 12 of the '841 application requires "second video data that is different from the first video data." Doc. 135-3 at 3-4. On October 28, 2015, the Patent Office indicated that it would allow proposed claim 12, but explained that it was doing so only because of its narrow reading of the claim's language:

> As disclosed by the applicant, the first video data and the second video data are data from differing points of view. … U.S. Patent Number 6,937,770 switches, externally from the client, between different MPEG quality streams at I-frames but the data in the '770 patent is actually the same video data at differing qualities. U.S. Patent Application Publication Number 2007/0053428 also showed switching streams, externally from the client, between two streams of differing qualities but it too did not show switching between different video data.

Doc. 135-4 at 7. Cascades responded to the Patent Office's statement two weeks later, arguing that claim 12 was not limited to video files representing different points of view. Doc. 138-3 at 3. But a month later, the Patent Office reaffirmed its position:

> The Examiner stands by the narrow claim interpretation presented in the Examiner's reasons for Allowance. The Examiner could not find any examples in the applicant's specification that would support the first and second video data being from the same point of view. There would be no reasonable interpretation of the specification that would allow for the two different video data to be from the same point of view. The applicant has not cited any in their 11/5/2015 letter. … The applicant was clearly not in possession of the broader claims that they think their application covers.

Doc. 143-1 at 2.

The Network argues that the Patent Office's statements show that "different" in claims 17, 18, and 22 of the '236 patent means "representing different points of view." Docs. 135, 143. Those statements, though, are weak evidence about the meaning of the disputed claim language. A patent examiner's interpretation of claim language in one application *can* provide evidence about the meaning of similar claim language in a related patent. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1343 (Fed. Cir. 2015) (relying on the patent examiner's determination that related claim language, in a subsequent but related patent application, was indefinite). But an examiner's interpretation of a claim is not dispositive, *see 3M Innovative Props.*, 725 F.3d at 1331-32, particularly when it concerns a different patent application. And the Patent Office's justification for its narrow reading of proposed claims 12 in the '841 application is unpersuasive; it explained that it "could not find any examples in the applicant's specification that would support the first and second video data being from the same point of view," Doc. 143-1 at 2, but the Federal Circuit has made very clear that "the scope of the claims is not generally limited to the embodiments disclosed in the patent." *Hill-Rom*, 755 F.3d at 1381; *see also Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009) (en banc) ("When the specification describes a single embodiment to enable the invention, this court will not limit broader claim language to that single application unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.") (internal quotation marks omitted); *Phillips*, 415 F.3d at 1325 ("While [a statement in the specification] makes clear the invention envisions baffles that [deflect projectiles], it does not imply that in order to qualify as baffles within the meaning of the claims, the internal support structures must serve the projectile-deflecting function in all the embodiments of all the claims."); *Liebel-Flarsheim*, 358 F.3d at 906-07 (rejecting an argument that "the absence of any

embodiment that lacks a pressure jacket" limited the patent's scope to devices with pressure jackets). The '236 patent's specification therefore does not establish that the patent uses "different" in a non-ordinary sense.

The patent's prosecution history is a different story. As explained above, the Patent Office rejected most of the proposed claims in the '273 application on the ground that they were anticipated by Anoop Gupta's U.S. Patent Application Publication 2002/0038374. Doc. 55 at 147-48. Gupta's application disclosed a system in which the viewer could switch between different video files that represented the same event but that were stretched out differently, so that switching among them would change the playback speed. The patent examiner believed that Gupta beat the Inventors to the draw on all of the '273 application's proposed claims except for those that required the system to switch among video files representing different points of view. *Id*. at 150-51. The Inventors responded by pointing out several distinctions between Gupta's system and their own. In relevant part, they wrote:

> Gupta is directed to a system that stores multiple "speed" versions of the audio and video content for play back at different speeds. This is completely different than Applicant's invention where the video is switched from one stream to a completely different stream without any alterations to the video or audio.

Doc. 55 at 134.

That statement clearly disavowed Cascades's preferred interpretation of "different." If video files were "different" whenever they "ha[d] different content," then the Gupta system's differently accelerated video files would qualify. But the Inventors made clear that the Gupta system's differently accelerated video files are not "different" for the purposes of the '236 patent. A change to a video file's playback speed is a mere "alteration[]"; the patented invention's video files must instead be "completely different" from each other.

Cascades tries to escape this disclaimer by noting that the examiner never decided that *all* the proposed claims were anticipated. Doc. 61 at 14. Specifically, the examiner decided that proposed claims 9, 48, and 74 were not anticipated because they explicitly required the video files to represent different points of view, and Gupta's system lacked that feature. But that in no way undermines the conclusion that the Inventors disavowed scope in the remaining claims. The examiner thought that the remaining claims were anticipated because they applied to videos that were different in *any* respect; the Inventors assured the examiner that those claims only applied to videos that were "completely different"; and the examiner changed course. That is a textbook disavowal. *See Computer Docking Station*, 519 F.3d at 1376-77.

The Network's proposed construction is not quite right either, though. It equates "completely different" with "representing different points of view," but it is not clear why that should be. The specification shows that one way for video files to be "completely different" is if they represent different points of view. Still, there could be other ways for video files to be completely different; for instance, files produced from the same point of view but representing different innings of the same baseball game might qualify.

There is no need, though, to provide an exhaustive definition of "completely different." Cascades claims that the Network infringed the '236 patent by switching among files containing different levels of image detail, so what matters in this case is how the term applies to those files. Doc. 35-2 at 4-6, 9-10, 12; *see E-Pass Techs., Inc. v. 3Com Corp.*, 473 F.3d 1213, 1219 (Fed. Cir. 2007) ("[A]ny articulated definition of a claim term ultimately must relate to the infringement questions that it is intended to answer."); *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed. Cir. 2006) ("[T]he legal function of giving meaning to claim terms always takes place in the context of a specific accused infringing device or

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process."). As for that, the court holds that video files that differ only by image detail are mere alterations; they are not "completely different," as the asserted claims require.

This result is intuitive. The applicants' statements about the Gupta invention show that a change in playback speed is a mere alteration. A change in image detail is much more like a change in playback speed than it is like a change in perspective. Generally speaking, image detail and playback speed affect how the video file relates its subject—fuzzily or precisely, slowly or quickly. Point of view affects which subject the video file relates—the dugout, the pitcher, the crowd. A person having ordinary skill in the art therefore would understand two video files that differ only in image quality as being mere alterations rather than as being completely different.

Accordingly, the court construes the terms, "the second video file being different from the first video file," and "a second video file which is different from the first video file," as follows:

> The second video file must be completely different from the first video file, and may not be a mere alteration of the first video file. For example, the second video file is completely different from the first video file if it represents a different point of view of an event. Two video files that differ only by the level of image detail they convey are mere alterations.

This holding extends to every asserted claim. The Inventors disclaimed that any of their proposed claims covered technology that switched between video files having only cosmetic differences. That means that none of the asserted claims cover systems whose video files differ only in image detail.

III.   "interleaved" (claims 16-18, 22)

The parties propose the following constructions of "interleaved":

> *The Network*: Configured into a single stream having segments of the first audio file in an alternating sequence with segments of the first video file.

Cascades: Multiplexed audio and visual data for optimizing rendering, for example, one-to-one, in a stream, with other adjustable parameters.

Doc. 52 at 16; Doc. 61 at 15.

The disagreements over the construction of "interleaved" deal entirely with phrasing. Both proposals assume that two files are "interleaved" when they are broken into segments that are then mixed together and transmitted to an end user. The parties also agree that two files can be "interleaved" even if the audio and video segments do not arrive in a regular on-off pattern. Doc. 61 at 16 ("[Interleaved] does not require an 'AVAVAVAV' sequence between audio and video samples."); Doc. 63 at 10 ("Nor does [the Network] dispute that the alternating sequence of files need not be 'one-to-one.'"). And the specification supports that position; it says that while "[a] one-to-one interleaving (audio-video-audio-video …) will be assumed throughout the … application[,] [t]he person skilled in the art will … recognize also different interleaving sequences suitable for the purposes of the … application." Doc. 55 at 15, col. 14, ll. 59-63; *see Sinorgchem Co., Shandong v. Int'l Trade Comm'n*, 511 F.3d 1132, 1138 (Fed. Cir. 2007) ("When the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term.") (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)).

The Network insists that defining "interleaved" as requiring "an alternating sequence" does not imply that the sequence must alternate regularly. Doc. 63 at 10. But "alternating" does imply a regular pattern. When someone says that "men and women should sit in an alternating sequence around the table," she generally means that men should sit next to only women and vice versa. And even if it is possible to use "alternating" in a looser sense, what is the advantage

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of doing so here? There are other, better ways of defining "interleaved" that do not run the risk

of implying that the term is narrower than it is.

The Network is right to point out, though, that "multiplexed" is not one of the better

ways. Doc. 52 at 16. The point of defining a term is to establish what it means. It is useless to

define a term using another term, like "multiplexed," whose meaning is even less understood.

Accordingly, the court construes "interleaved" as follows:

> Two files are "interleaved" if they are configured into a single stream of data
> in which segments of one file and segments of the other file are mixed
> together. The segments of the two files need not be transmitted or received in
> any particular pattern; they need only to be interspersed in some way.

IV.   "streaming on a server" (claims 17-18) / "streaming server" (claims 16, 22)

The parties propose the following constructions of "streaming on a server" and

"streaming server":

> *The Network*: "Streaming" means transmitting data such that playback
> can proceed on the user's device as data is being received
> at the device.
>
> "Streaming server" means a computer used for streaming.
>
> *Cascades*:   Receiving one or more audio and one or more video files
> or sources pertaining to an event at a server computer and
> relaying data from the server over a computer network,
> allowing playback to proceed on a user device while
> further data is being received.
>
> A "streaming server" means a computer that receives one
> or more audio and one or more video files or sources
> pertaining to an event, and that relays data over a
> computer network, allowing playback to proceed on a
> user device while further data is being sent by the
> computer.

Doc. 52 at 17; Doc. 61 at 17.

These proposals are mostly consistent. The parties agree that "streaming" involves

sending data to a user over a network in a way that allows playback to proceed on the user's

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device even as the device is receiving more data. Cascades, however, proposes an additional limitation, contending that "streaming" requires the server to "receiv[e]" the files before it transmits them to the user.

The intrinsic evidence counsels against that reading. First, some of the asserted claims explicitly require the server to receive audio and video files in addition to requiring the server to "stream" those files to the user. Claim 16, for instance, requires both "a feed distributor … controllably feeding" files to the server *and* "a streaming server for streaming contents of" the files received from the distributor. Doc. 55 at 21, cols. 25-26. And in claim 18, step "(a)" involves "providing" audio and video files, while step "(b)" involves "streaming on a server" the contents of those files. *Id*. at 21, col. 26, ll. 35-41. If "streaming" inherently required first receiving audio and video files pertaining to an event, those requirements would be redundant. *See Phillips*, 415 F.3d at 1314 ("[T]he claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel.").

The specification also differentiates between receiving and streaming a file. When it describes the prior art, the specification states that "[a] streaming server … located on the server side receives audio-visual information from a number of different audio-visual files …." The specification then states: "The audio-video content of the … files … is streamed from the server to the client …." Doc. 55 at 9, col. 1, ll. 34-43. Again, if receiving were an inherent feature of streaming, that statement would be redundant.

It is enough that the intrinsic evidence precludes Cascades's proposed construction, *see Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) ("A court may look to extrinsic evidence so long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record."); *N. Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d

1281, 1295 (Fed. Cir. 2000) ("[E]xtrinsic evidence 'may not be used to vary or contradict the claim language' as discerned from the intrinsic record.") (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996)), but for what it is worth, the proposal takes a beating from the extrinsic evidence, too. Not one of the cited dictionary definitions of "streaming" requires that the server first receive the files to be streamed. *See Microsoft Computer Dictionary* (4th ed. 1999), *supra*, at 425 (reproduced at Doc. 54 at 2) ("On the Internet, the process of delivering information, especially multimedia sound or video, in a steady flow that the recipient can access as the file is being transmitted."); Pfaffenberger, *supra*, at 511 (reproduced at Doc. 53 at 5) (defining "streaming audio" as, "[o]n a computer network, a method of sending audio data as a continuous, compressed stream that is played back on the fly," and "streaming video" as, "[o]n a computer network, a method of sending video data as a continuous, compressed stream that is played back on the fly").

Cascades insists that its proposal is "consistent with" the definition provided by a Google search for "define streaming." Doc. 61 at 18. But that definition lends no support to Cascades's approach; it reads, "a method of relaying data (esp. video and audio material) over a computer network as a steady continuous stream, allowing playback to proceed while subsequent data is being received." *Ibid*. True, the definition mentions "data … being received"—but only by the client, not by the server.

Accordingly, the court adopts the Network's proposed constructions:

> "Streaming" means transmitting data such that playback can proceed on the user's device as data is being received at the device. "Streaming server" means a computer used for streaming.

V. "establishing separate sessions with the plurality of users by sending each user a separate stream" (claims 16-18, 22)

The parties propose the following constructions of the disputed term:

> *The Network*: Initiating a new, discrete network communication with each end-user that continues for the duration of a separate stream.
>
> *Cascades*: Establishing a stream, preferably in unicast, that is separate from other communications of the server side with other clients.

Doc. 52 at 18; Doc. 61 at 19.

The first dispute about this term concerns whether it requires the users' streams to be "unicast." A "unicasting" system is one in which each user's stream is independent, such that the system could change the content of one user's stream without changing the content of any other user's stream. It is the opposite of a "multicast" model, in which the server sends the same stream to multiple users, such that if it changed the content of that stream, it would necessarily change the content that each user received. Doc. 55 at 12, col. 7, ll. 14-18; Doc. 100 at 90:10-16.

Cascades asserts that the disputed language requires a unicasting model, Doc. 61 at 19-20, and that is correct. The claims state that the invention must "send[] each user a separate stream." Doc. 55 at 21, col. 25, ll. 65-66; *id.* at 21, col. 26, ll. 22, 43, 66-67. That can mean only that the streams contain independent data. It would be hollow to require the invention to "send each user a separate stream" if streams qualified as "separate" even when their only difference was the identity of the users receiving them. *See Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1348 (Fed. Cir. 2012) (holding that a construction of the claim term, "rearwardly directed free end," was incorrect because it "effectively read[] the term 'free' out of the limitation"); *Absolute Software*, 659 F.3d at 1141 ("We find no error in that interpretation, especially because Stealth's proposed construction would render the word 'terms' meaningless.").

The Network argues that this passage in the specification shows that the claims do not require unicasting: "Data streaming services can adopt a unicasting model or a multicasting model." Doc. 55 at 12, col. 7, ll. 13-14; Doc. 63 at 12. But that passage describes "data streaming services" generally, not the patented invention. The question for the court is whether invention of the '236 patent can adopt a multicast model, not whether data streaming services generally can. *See Anascape, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333, 1336-37 (Fed. Cir. 2010) (noting that a statement in the specification was "not a description of the '525 invention" but instead "a description of prior art," and that therefore it did not support a broader reading of the claim).

A more promising passage for the Network comes later in the same paragraph of the specification: "[T]he present invention *preferably* embodies a unicasting model." Doc. 55 at 12, col. 7, ll. 24-25 (emphasis added). "Preferably" implies "not necessarily." *See Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008) ("[T]he specification states that 'preferably' none of these clays are added; this strongly suggests that absence of clays is simply a preferred embodiment."); *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1357 (Fed. Cir. 2003) ("[T]he use of the term 'preferably' makes clear that the language describes a preferred embodiment, not the invention as a whole."). But that passage, too, is consistent with a construction of the disputed claim language as requiring a unicast model. Different claims can impose different requirements. *See Globetrotter Software, Inc. v. Elan Computer Grp., Inc.*, 236 F.3d 1363, 1369 n.1 (Fed. Cir. 2001) (rejecting as "not relevant" an argument based on "portions of the prosecution history directed at claims having different limitations" from the claim being construed). Not all of the patent's claims contain the phrase, "sending each user a separate

stream." *E.g.*, Doc. 55 at 22, col. 27, ll. 27-52 (claim 26); *id*. at 22, cols. 27-28 (claim 28); *id*. at 22-23 (claim 37). The ones that contain the phrase require unicasting; the rest might not.

Cascades's proposed construction, however, does not accurately convey that requirement. For one, it says "preferably in unicast," which implies "not necessarily in unicast." For another, "unicast" is a piece of jargon that would be useless to a jury. It is better to say something like, "Each user's stream must be independent; in other words, the system or method must be able to change the content of a user's stream without changing the content of any other user's stream."

The second dispute concerns the Network's proposal that the "streaming session" must "continue for the duration of the separate stream." The Network points out that a "session" by definition has "limited duration," Doc. 52 at 19; Doc. 63 at 12, and that appears to be true. *See Microsoft Computer Dictionary* (4th ed. 1999), *supra*, at 405 (reproduced at Doc. 54 at 1) (defining "session" as, "[i]n communications, the time during which two computers maintain a connection"); *The Authoritative Dictionary of IEEE Standards Terms*, *supra*, at 1035 (reproduced at Doc. 53-2 at 1) (defining "session" as "[t]he period of time during which a user of a terminal can communicate with an interactive system, usually equal to elapsed time between logon and logoff"). But so what? "A limited duration" need not be "a duration equal to the length of the stream." A blink has a limited duration; so did the Roman Empire. A session could continue after the user is done watching, or end halfway through the event, and still have a limited duration. There is no good reason, then, to hold that the streaming session must continue for the duration of the user's viewing of the event.

Accordingly, the court interprets the term, "establishing separate sessions with the plurality of users by sending each user a separate stream," as follows:

> Initiating a new network communication with each end user, over which each
> end user receives an independent stream. Each user's stream is independent if

and only if the system or method can change the content of each user's stream without changing the content of any other user's stream.

VI.   **"controlling on the server the streaming of the video files, so as to switch between video files, and streaming, upon switching, a second video file which is different from the first video file" (claim 17) / "controlling on the server side the streaming of video files, so as to switch streaming from the first video file to the second video file for at least one user" (claim 18)**

The parties propose the following constructions of these terms:

The Network: Determining on the server when to switch from streaming, to at least one user, a stream including the first audio file and the first video file to a stream including the first audio file and the second video file.

"User" means a person viewing on a device audio and video files representing an event.

Cascades I: Selecting different video data to be streamed to a user in response to a control signal from the user side, preferably at a key frame.

Cascades II: Determining on the server side the manner of switching the streaming, to at least one user, from one video file to a second video file.

Doc. 52 at 20; Doc. 61 at 21; Doc. 126 at 2. ("Cascades I" refers to Cascades's initial proposal;

"Cascades II" refers to its alternative proposal, Doc. 126.)

The parties initially disagreed about whether the disputed terms require the switch to be

made in response to a signal from the user. Doc. 52 at 20; Doc. 61 at 21-22. They also

disagreed about whether the construction should include the language, "preferably at a key

frame." Doc. 52 at 20-21; Doc. 61 at 22. However, Cascades's alternative construction

concedes that the switch need not be made in response to a user's signal, and it drops the phrase,

"preferably at a key frame." Doc. 126 at 2. The court treats those concessions as waivers. *See*

SuperGuide, 358 F.3d at 889.

Several other disputes remain. First, the parties disagree about whether the audio file being streamed must remain constant as the system switches between video files; the Network argues that it must, and Cascades disagrees. Doc. 52 at 21-22; Doc. 61 at 22-23. Cascades is correct. Nothing in the claims would require the audio stream to remain constant while the video stream is switched. Claim 17 states only that the server must switch "between video files, and stream[], upon switching, a second video file which is different from the first video file." Doc. 55 at 21, col. 26, ll. 24-26. Claim 18 states only that the server must "switch streaming from the first video file to the second video file for at least one user." *Id*. at 21, col. 26, ll. 48-49. Neither claim says anything about switching, or not switching, the audio file being streamed.

Additionally, claims 19 and 20 illustrate that claim 18 cannot require the audio stream to stay constant through the switch. Those two claims are dependent upon claim 18, meaning that they encompass subsets of the technology that claim 18 encompasses. *See* 37 C.F.R. § 1.75(c). Claim 19 reads: "The method of claim 18 wherein upon switching in step (e), the first audio file continues to be streamed." Doc. 55 at 21, col. 26, ll. 50-51. Claim 20 reads: "The method of claim 18 wherein upon switching in step (e), a second different audio file is streamed." *Id*. at 21, col. 26, ll. 52-53. In other words, claims 19 and 20 describe their scope as identical to claim 18's scope except that in claim 19, the invention continues streaming the first audio file, and in claim 20, the invention switches out the audio file as well as the video file. Those dependent claims make explicit, then, that claim 18's application does not depend on whether the accused technology switches audio files simultaneously with switching video files; one subset of infringing methods (those that claim 19 describes) keep the audio stream constant, and another subset of infringing methods (those that claim 20 describes) switch the audio stream. *See Hill-Rom*, 755 F.3d at 1374 ("The presence of a dependent claim that adds a particular limitation

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raises a presumption that the limitation in question is not found in the independent claim.")
(internal quotation marks and brackets omitted).

The Network offers several ineffectual responses. First, it argues that other language in
claim 18 requires the invention to leave the audio stream unaltered. Step (b) of claim 18
provides that the first video file is "interleaved with" the first audio file. Step (e) provides that
the method of claim 18 switches from streaming the first video file to streaming the second video
file. According to the Network, that implies that after the switch, the second video file is
interleaved with the first audio file—and it cannot be interleaved with the first audio file if the
invention stops streaming the first audio file. Doc. 52 at 21.

But claim 18 implies no such thing. Its preamble uses the words, "comprising the steps
of." Doc. 55 at 21, col. 26, l. 34. "The transition 'comprising' creates a presumption that the
recited elements are only a part of the device, that the claim does not exclude additional,
unrecited elements." *MagSil Corp. v. Hitachi Global Storage Techs., Inc.*, 687 F.3d 1377, 1383
(Fed. Cir. 2012) (quoting *Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc.*,
246 F.3d 1336, 1348 (Fed. Cir. 2001)). The Network essentially argues, though, that because the
claim says that the video file switches but not that the audio file switches, a system in which the
audio file switches does not infringe the claim. That line of argument has no place in construing
a "comprising" claim. The fact that such a claim mentions elements A, B, and C, but not D is
not evidence that the claim *rejects* methods featuring D. It shows only that it is possible to
infringe the claim without featuring D. *See id.* at 1384 (construing a "comprising" claim
requiring a "change in the resistance by at least 10%" to include embodiments in which the
resistance changed by any amount greater than 10%). Just so, claims 17 and 18 mention: (1) that
the first audio file and first video file are interleaved; (2) that the system stops streaming the first

video file; and (3) that the system starts streaming the second video file. Nothing in that list implies that, after the switch, the first audio file and second video file are interleaved. They might be, or they might not be—as claims 19 and 20 demonstrate.

Second, the Network argues that the specification lists as a strength of the invention the fact that "switching occurs on the video signal without need for the audio signal to be affected." Doc. 55 at 10, col. 4, ll. 56-57. So, the Network contends, switching video without switching audio is a necessary feature of the invention. Doc. 52 at 22. But that mistakes a capability with a mandate. True, the invention includes embodiments that can switch video files without switching audio files; in the words of the specification, there is no "need for the audio signal to be affected" by the switch. But that does not entail that the invention includes *only* those embodiments. A defendant can infringe a patent without putting the invention to its best use. *See Phillips*, 415 F.3d at 1326-27 ("The fact that the written description of the '798 patent sets forth multiple objectives to be served by the baffles recited in the claims confirms that the term 'baffles' should not be read restrictively to require that the baffles in each case serve all of the recited functions."); *Golight*, 355 F.3d at 1331.

Lastly, the Network argues that the specification does not describe an invention in which the video and audio switch simultaneously. Section 112 of Title 35 requires a patent's specification to provide a "written description" of the invention with enough detail to show that "the inventor actually invented the invention claimed"; a patent that fails to do so is invalid. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). So, the Network contends, the relevant claims will be invalid under § 112 if the court adopts Cascades's proposed construction. Doc. 52 at 21 n.10. This argument, though, falls foul of the settled rule that a court must not construe a claim so as to avoid making it invalid unless the court has run

out of other interpretive tools. *See Hill-Rom*, 755 F.3d at 1374 ("Where the meaning of a claim term is clear, as it is here, we do not rewrite the claim to preserve its validity."); *Phillips*, 415 F.3d at 1327-28 (describing the old "doctrine of construing claims to preserve their validity" as having "limited utility in any event," and noting that the doctrine has "no applicability" when the claim can be construed by other means). The court can interpret the disputed terms by other means—namely, considering the language of the claims themselves, and comparing claim 18 with dependent claims 19 and 20—so it declines the Network's invitation to analyze the claims' validity.

The second dispute is whether the term "user" refers only to the person viewing the stream (as the Network asserts) or also to her computer (as Cascades asserts). Doc. 52 at 22-23; Doc. 61 at 23. The Network notes that the patent uses the word "client" to refer to the viewer's computer and the word "user" to refer only to the viewer herself. *Compare* Doc. 55 at 9, col. 1, ll. 25-27 ("According to the webcast streaming technology, a client-server connection is established, where the server transmits multiple streams or files to each client."), *id*. at 12, col. 7, ll. 15-17 ("A unique session is established between the unique IP address of the server and the unique IP address of the client."), and *id*. at 16, col. 15, ll. 59-65 ("Streaming of Audio/Video Samples from Server to Client[.] At the application layer, data are sent by the server and received by the client in accordance with one of a plurality of known application-level protocols. … Alternatively, data are packaged to compensate for different byte-ordering on the client side."), *with id*. at 9, col. 2, ll. 30-33 ("The present invention solves the prior art problems cited above, by allowing each user to remote controlling [sic] between different cameras, thus creating a customized show with a seamless switching and optimal use of bandwidth."), *id*. at 11, col. 5, ll. 61-66 ("[T]he user can enjoy the event on the video window 50. The user can now switch

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from the current point of view to a different point of view by interacting, for example with the click of a mouse button, with active icons representing alternative points of view."), *and id*. at 12, col. 7, ll. 29-34 ("Advantageously, in the present invention, a particular user can control the switching between points of view or between listening points for a number of other user [sic]. Further, it is also possible for switching commands to be preprogrammed, so that a switching between points of view or listening points occurs automatically, unless differently operated by the user.").

Cascades argues that the last of these statements shows that "user" cannot just mean the person using the system. The specification states that "it is … possible for switching commands to be preprogrammed, so that a switching between points of view or listening points occurs automatically, unless differently operated by the user." So, according to Cascades, the "user" must include the user's computer. Doc. 61 at 23. But that argument rests on the false assumption that claims 17 and 18 require the switch to be made in response to a signal from the user. The claims never say that; in fact, claim 17 states that the switching must be "control[led] on the server," and claim 18 states that the switching must be "control[led] on the server side." Doc. 55 at 21, col. 26, ll. 23, 47.

The third dispute concerns whether the term "the server side" in claim 18 is synonymous with "the server." The Network implausibly asserts that it is. Its entire argument reads:

> The '236 patent claim language and prosecution history confirm that "the server
> side" in claim 18 means "the server." Step (b) of claim 18 recites "streaming on a
> server" and step (e) recites "controlling on the server side the streaming of video
> files …." It is therefore evident that "controlling on the server side the streaming
> of video files" in step (e) of claim 18 occurs on the server referenced in step (b).

Doc. 52 at 20 (citations omitted). True enough, claim 18 requires the streaming to be done "on a server" and the controlling of the streaming to be done "on the server side." But that does not mean that "server side" and "server" are synonymous. One thing could control what streams

while something else does the streaming. In fact, that is exactly what the '236 patent's Figure 2
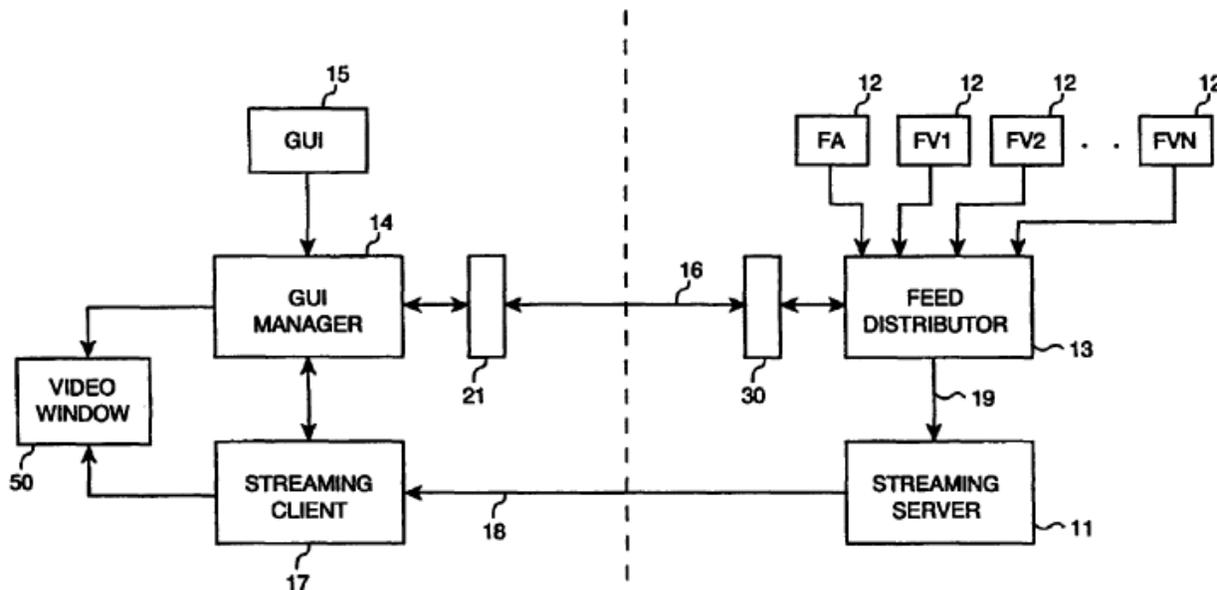
appears to illustrate:

FIG. 2

Doc. 55 at 7. The "feed distributor" (13) is distinct from the "streaming server" (11) in certain

embodiments of the invention, and the feed distributor is the device that controls when to switch

video streams. Doc. 55 at 9-10, cols. 2-3. And the specification, too, differentiates the "server"

from the "server side." *Id*. at 10, cols. 3-4 ("According to the present invention, the *streaming*

server 11 on the *server side* is not directly connected to the audio-visual sources 12.") (emphases

added); *id*. at 11, col. 6, ll. 41-45 ("A first way of implementing the system according to the

invention provides for personal computers on the client side and two server stations on the server

side, the first server station comprising the streaming server 11 and the second server station

comprising the feed distributor 13.").

Accordingly, the court adopts the following construction of the disputed claim language:

Determining on the [server (claim 17) / server side (claim 18)] when to switch from streaming, to at least one user, a stream including the first video file to a stream including the second video file.

"User" means a person viewing audio and video files representing an event.

A device is on "the server side" if it is the streaming server, or if it is any other device with which the user's computer can only communicate through the Internet. An action is taken "on the server side" if it is taken by any device on the server side.

VI.   "[step] (d) simultaneously with step (b)" (claim 18)

For convenience, claim 18 reads:

A computer-operated method for viewing and switching of audio-video data over a network using a client-server system, comprising the steps of:

(a) providing at least a first audio file and at least first and second video files containing information referring to same event;

(b) streaming on a server contents of the first audio file and the first video file to a plurality of users over a network, the first audio file being interleaved with the first video file;

(c) establishing separate sessions with the plurality of users by sending each user a separate stream;

(d) simultaneously with step (b), outputting the second video file, the second video file being different from the first video file;

(e) controlling on the server side the streaming of video files, so as to switch streaming from the first video file to the second video file for at least one user.

Doc. 55 at 21, col. 26, ll. 32-49. The parties propose the following constructions of the method

steps in this claim:

The Network: Steps of method claim 18 performed in the following sequence:

        1. Step (a)
        2. Steps (b) and (d) performed at the same time
        3. Step (c)
        4. Step (e)

> *Cascades*:   These steps require [Step (d)]: The playing of a second video stream on the client after the completion of a switching operation.

Doc. 52 at 23; Doc. 61 at 23.

The parties first dispute whether steps (b) and (d) must be performed at the same time. Step (d) reads, "*simultaneously with step (b)*, outputting the second video file, the second video file being different from the first video file." *Id*. at 21, col. 26, ll. 44-46 (emphasis added). "Simultaneously with X" plainly means "at the same time as X," so that should be the end of it. *See Shire*, 787 F.3d at 1367; *Acumed*, 483 F.3d at 805 ("The task of comprehending th[e] words [of a claim] is not always a difficult one."); *Phillips*, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.").

Cascades argues that step (d) cannot *really* require the method to "output the second video file" at the same time that it "stream[s] … contents of the first audio file and the first video file to … users," because "otherwise, there would be no 'switching' from a first to a second video file." Doc. 61 at 24. Instead, Cascades argues, "'simultaneous' simply means that this second video file is synchronous in time with the now substituted first video file." *Ibid*.

Cascades's proposed construction would require the court to stretch step (d)'s language past recognition. First off, "simultaneously with step (b)" is an adverbial phrase modifying "outputting"; in other words, step (d) requires the practitioner to "output[]" simultaneously with step (b). Cascades asks the court to read "simultaneously with step (b)" as an adjectival phrase modifying "second video file." That is inconsistent with the use of the adverb "simultaneously" rather than the adjective "simultaneous," and with the phrase's placement. *See Lemelson v.*

United States, 752 F.2d 1538, 1551 (Fed. Cir. 1985) ("Because the word 'automatic' expressly modifies another phrase in the same step, this supports not implying 'automatic' for the phrase 'relatively prepositioning.'"). And even if it were possible to read "simultaneously with step (b)" as an adjectival phrase modifying "second video file," the phrase still would require the second video file to be synchronous with "step (b)" as a whole—not, as Cascades insists, with the video file that step (b) describes.

Cascades might be able to justify the verbal gymnastics if it were right that claim 18 could not possibly require "the second video file [to be] streamed to a given user at exactly the same time" as the streaming of the first video file. Doc. 61 at 24. But that is exactly what the claim requires—at least, it requires the server to stream a much-reduced version of the second video file. Step (d) directs the practitioner of the claimed method to "output[] the second video file." Doc. 55 at 21, col. 26, ll. 44-45. The specification uses the word "output" to describe embodiments of the invention in which the user watches the streamed first video file on the main window, but simultaneously has the other available video files playing in smaller "thumbnail windows." *Id*. at 10, col. 4, ll. 28-35 ("A second embodiment could provide a main stream of audio-visual data *output* on a main window of the user, and a plurality of accessory streams *output* on secondary windows (thumbnails), wherein the accessory streams have an extremely reduced bandwidth occupation and wherein the audio-visual contents of the main window can be switched by the user according to the present invention.") (emphases added). And unasserted claims 9 and 45 clearly require the server to transmit the second video file to the user even as it streams the first video file. *Id*. at 21, col. 25, ll. 17-22 ("[Claim] 9. The system of claim 1, wherein said streaming server streams additional audio and video files, the additional audio and video files being output to secondary windows of a screen of the user, the secondary windows

being different from a main window of the screen of the user where said first audio file and said first video file are output."); *id.* at 23, col. 30, ll. 21-25 ("[Claim] 45. The system of claim 37, wherein the streaming server can stream one or more audio and video files, where the one or more audio and video files are output to one or more secondary windows of a screen display, where the secondary windows are different from the main window display."). It is hard to reconcile those claims with Cascades's position that the invention "[p]lainly" does not stream the two video files simultaneously. Doc. 61 at 24.

To be fair, claim 18 is not the clearest statement of the invention's "thumbnail streaming" embodiment. The patent uses the word "outputting" to refer to presentation of the video file to the user, but it also uses the word to describe the creation of video files by video sources (Doc. 55 at 9, col. 1, ll. 28-30; *id.* at 10, col. 4, ll. 61-67; *id.* at 11, col. 5, ll. 30-37) and the passing of video files from the feed distributor to the streaming server (*id.* at 17, col. 18, ll. 6-9, 35-38; *id.* at 22, col. 27, ll. 1-10 (claim 22)). But only the first sense of "outputting" makes sense in the way in which claim 18 uses the word. Only the presentation of video data to the user can be described as an "output" of the invention as a whole; the creation of video files and the movement of video files from the feed distributor to the streaming server are interactions between the invention's component parts.

The parties also dispute the order in which the rest of claim 18's steps must be performed. The Network argues that step (a) must be performed first, then steps (b) and (d) at the same time, then step (c), and then step (e). Doc. 52 at 23. Cascades, by contrast, argues that step (c) must be performed before step (b) and that step (e) must be performed before step (d). Doc. 61 at 24. Neither side is exactly right, but the Network is closer.

Ordinarily, the steps of a method claim need not be performed in a particular order. *See Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001) ("Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one."). However, if the claim's grammar or logic requires a particular order, then only methods performed in that order infringe the claim. *See ibid.* ("However, such a result can ensue when the method steps implicitly require that they be performed in the order written.") (citation omitted); *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70 (Fed. Cir. 2003) ("First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written.").

Claim 18's logic requires certain of its steps to be performed in certain orders. First, step (a) must be performed before any other step. Step (a) provides the audio and video files that the other steps use—explicitly, as with steps (b), (d), and (e), and implicitly, as with step (c). Second, no step besides step (a) can be performed before step (c). The streaming session that step (c) establishes is a necessary antecedent to the streaming itself (which occurs in steps (b) and (d)) and to any switching between streams (which occurs in step (e)). The Network may be right when it insists that steps (c) and (b) can be performed "at the same time," Doc. 63 at 15, but step (b) cannot possibly be performed *before* step (c), as the Network's construction appears to require.

As discussed above, though, the Network is correct that steps (b) and (d) must be performed at the same time. And the Network is also correct that step (e) cannot be performed until after the practitioner begins to perform step (b). It would be impossible to "switch streaming from the first video file to the second video file," as step (e) requires, until the practitioner has already begun "streaming … the first video file," which happens in step (b). *See*

Loral Fairchild Corp. v. Sony Corp., 181 F.3d 1313, 1321-22 (Fed. Cir. 1999); *Mantech Envtl.*

Corp. v. Hudson Envtl. Servs., Inc., 152 F.3d 1368, 1375-76 (Fed. Cir. 1998).

Accordingly, the court adopts the following construction:

> In claim 18, step (a) must be performed before any other step. No step other than step (a) may be performed before step (c). Steps (b) and (d) must be performed, at least in part, at the same time. And step (b) must be performed, at least in part, before step (e).

VIII. "key frame" (claims 16-17, 21, 25, 27)

The parties propose the following construction of "key frame":

> *The Network*: A frame which is not differentially compressed.
>
> *Cascades I*: A video frame at which switching from one file to another occurs.
>
> *Cascades II*: A video frame that is not differentially compressed and at which switching occurs.

Doc. 52 at 24; Doc. 61 at 25; Doc. 126 at 2.

Streaming video often uses what is called "differential compression" to reduce the size of the file without reducing the image quality. It works the same way as algebraic chess notation. It would be possible to describe a chess game by communicating the position of every piece on the board after each move—"There is a pawn at a2; there is a pawn at b2; there is a pawn at c2," and so on. It saves space, though, to describe only the moves themselves—"The pawn at e2 moved to e4." The person reading the description can then reproduce the game by reproducing the moves, understanding that every piece on the board besides the one that moved stayed still. *See* World Chess Federation, *Laws of Chess: For competitions starting on or after 1 July 2014* Appendix C, available online at http://www.fide.com/component/handbook/?view=article&id=171 (last visited May 3, 2016).

A video file that is differentially compressed also saves space by describing changes

rather than states. A video consists of a succession of still images, called "frames." A

differentially compressed video file describes the first video frame in full. After that, it describes

what has changed between each frame. A program reading the file can use that information, with

the understanding that every part of the image *not* described remains the same, to reproduce the

entire video. A key frame is a frame that a video file describes in full, rather than one that the

video file describes merely in terms of how it differs from the previous frame. Playback can

begin only at a key frame, so the first frame in a differentially compressed video file is always a

key frame. However, key frames also can be interspersed throughout the file to allow playback

to begin partway through. The parties agreed about all of this in their briefs and oral

presentations. Doc. 52 at 24 & n.13; Doc. 61 at 6; Doc. 100 at 12:10-25. The specification

supports that understanding. Doc. 55 at 17, col. 18, ll. 44-46 ("With dynamic compression, a

differential compression of each sample with reference to the previous sample is intended."); *id*.

at 17, col. 18, ll. 51-54 ("[I]t is common that a video stream also comprises frames which are not

differentially compressed. Such frames are known as 'static frames' or 'key frames.'").

The only dispute concerns Cascades's insistence that a key frame by definition is a frame

"at which switching occurs." Doc. 61 at 25; Doc. 126 at 2. It is not. Claims 16, 17, 21, 25, and

27 all explicitly require switching to occur at key frames. Doc. 55 at 21, col. 26, ll. 7-10 (claim

16: "wherein switching between the first video file and the second video signal occurs when the

key frame is encountered"); *id*. at 21, col. 26, ll. 28-31 (claim 17: "and wherein the controlling

step switches between the first video file and the second video file when a key frame of one of

the video files is encountered"); *id*. at 21, col. 26, ll. 54-56 (claim 21: "wherein the video files

have a key frame, and the step of switching in step (e) occurs when a key frame of one of the

video files is detected"); *id*. at 22, col. 27, ll. 53-55 (claim 27: "wherein the step of switching to

the second instance occurs when a key frame in one of the multimedia files is detected"). Those

directives would be redundant if "key frame" referred only to frames at which switching

occurred; it would be enough to say only that the invention "comprises key frames." *See*

InterDigital Commc'ns, LLC v. Int'l Trade Comm'n, 690 F.3d 1318, 1325 n.1 (Fed. Cir. 2012)

(use of the phrase "spreading code" implies that "code" does not inherently mean spreading

code); *Phillips*, 415 F.3d at 1314 (use of the phrase "steel baffles" implies that "baffles" does not

"inherently mean objects made of steel").

The court does not adopt the Network's proposal verbatim, though, because it uses a term

of art, "differentially compressed," that is not commonly understood. Instead the court adopts

the following construction:

> A "key frame" is a frame in a video file that the video file describes
> completely, rather than a frame that the video file describes only in terms of
> the frame's relationship to another frame.

IX. "persistent connection" (claims 26, 28)

The parties propose the following constructions of "persistent connection":

The Network: A single, unique network connection between a server
and a client that remains active for multiple requests and
responses between server and client for the duration of
the user's viewing of the event.

Cascades I: Employing the same connection for multiple requests and
responses occurring between a server and client, rather
than a new connection for every request or every
response.

Cascades II: A separate network connection between a server and a
client that can remain active for multiple requests and
responses between server and client.

Doc. 52 at 25; Doc. 61 at 26; Doc. 126 at 2.

The parties initially disputed whether a "persistent connection" is a network connection, but Cascades concedes in its alternative construction that it is. Doc. 126 at 2. The only remaining dispute concerns whether the "persistent connection" in claims 26 and 28 must "remain[] active … for the duration of the user's viewing of the event." Doc. 52 at 20. The Network argues that it must, and Cascades disagrees. Doc. 52 at 26-27; Doc. 61 at 27.

The "persistent connection" of claims 26 and 28 does not need to remain active for as long as the user views the event. The specification does not define "persistent connection," and it is not a term that is commonly used and understood. The Network cites several dictionaries and treatises explaining the term. Doc. 52 at 25-26. Together, they show what a person having skill in the art at the time of the invention would have understood "persistent connection" to mean.

The Internet allows computers to communicate without being directly connected; it routes the communications through a sequence of intermediate computers, like a game of telephone. *See* Lydia Parziale et al., *TCP/IP Tutorial and Technical Overview* § 1.1.1, at 4-6 (IBM 8th ed. 2006), *available at* http://www.redbooks.ibm.com/redbooks/pdfs/gg243376.pdf (last visited May 3, 2016). In doing so, the Internet establishes virtual "connections" between the communicating computers—stable channels of communication in which information is encoded according to certain rules designed to maximize the chance that it will arrive in the same condition that it was sent. *See id*. § 4.3, at 149-70. It takes a certain amount of time and network resources to establish and terminate an Internet connection. The client warns the server to listen for a signal, and the server assures the client that it is listening. After the main transmission ends, the client tells the server to stop listening, and the server notifies the client that it has. *See ibid*.; Oracle Java SE Documentation, *Persistent Connections* (2014) (reproduced at Doc. 54-1 at

27); Network Working Group, *Hypertext Transfer Protocol—HTTP/1.1 IETF RFC 2616* (1999) (reproduced at Doc. 54-1 at 30). The routine works fine if the transaction between the two computers is brief, but if the computers expect to have repeated interactions, they can speed things up substantially by skipping the intermediate hellos and goodbyes. *See* Microsoft Press, *Microsoft Computer Dictionary* 399 (5th ed. 2002) (reproduced at Doc. 54-1 at 16); *Persistent Connections*, *supra* (reproduced at Doc. 54-1 at 27); *Hypertext Transfer Protocol—HTTP/1.1 IETF RFC 2616*, *supra* (reproduced at Doc. 54-1 at 30).

A persistent connection does just that. It is an Internet connection that stays open even after the first transaction using the connection has finished. The computers sharing the connection can then reuse it for their future transactions without having to take the time to terminate and establish new connections. *See Microsoft Computer Dictionary* (5th ed. 2002), *supra*, at 399 (Doc. 54-1 at 16) (defining "persistent connection" as "[a] connection to a client that remains open after a server sends a response. … [P]ersistent connections are used to improve Internet efficiency and performance by eliminating the overhead associated with multiple connections"); David Gourley et al., *HTTP: The Definitive Guide* § 4.5 (O'Reilly 2002) (reproduced at Doc. 54-1 at 19) ("[Internet] connections that are kept open after transactions complete are called *persistent* connections. Nonpersistent connections are closed after each transaction."); *Persistent Connections*, *supra* (Doc. 54-1 at 27) ("HTTP persistent connections … is the idea of using the same TCP connection to send and receive multiple HTTP requests/responses, as opposed to opening a new one for every single request/response pair.").

The Network agrees that a persistent connection is "a network connection that remains open after a server sends a response …." Doc. 52 at 25-26 (internal quotation marks omitted). It proposes that, for the purposes of claims 26 and 28, the persistent connection additionally must

remain open for the entire time the user is viewing the event. And it argues that the specification

requires the departure from the term's ordinary meaning because of how it distinguishes the

patented invention from prior art. One of the ways that users could switch between video

streams before the invention, the specification explains, was that they could initiate new sessions

with the streaming server. Doc. 55 at 9, col. 2, ll. 4-26. According to the Network, the invention

of the '236 patent represented an improvement over that technique because it eliminated the

"need to establish a new session over a new connection each time switching of point of view

occurs." Doc. 55 at 10, col. 3, ll. 33-35. So, the Network argues, the invention must remain

open for the entire duration of the user's viewing of the event. Doc. 52 at 27.

The argument is not compelling. A statement in the specification "must be clear" to

justify a departure from a claim term's ordinary meaning, and the cited passage is not. *Voda*,

536 F.3d at 1320. The Network insists that the invention's connection must persist as long as the

user views the event, a period during which the user could switch views dozens of times. But the

passage from the specification states only that the system would not need a new connection

"each time a switching … occurs." Doc. 55 at 10, col. 3, ll. 33-35. It does not state that the

invention never would need a new connection *any* time switching occurs. Additionally, the

passage states only that that the invention has "no *need* to establish a new session" with each

switch. That is far from saying that the invention does not or must not establish a new session

with each switch, as the Network insists. Again, a capability is not a mandate. *See Phillips*, 415

F.3d at 1327; *Golight*, 355 F.3d at 1331.

Accordingly, the court adopts the following construction:

> A "persistent connection" is a network connection between a server and a
> client that can remain active for multiple requests and responses between the
> server and the client.

X.   "without using bandwidth of the streaming session" (claims 26, 28)

The parties propose the following constructions of "without using bandwidth of the streaming session":

> *The Network*:   Without using any bandwidth of the connection used for streaming the multimedia files.
>
> *Cascades*:   Without using any bandwidth used for streaming the multimedia files.

Doc. 52 at 28; Doc. 61 at 27.

"Bandwidth" is a measure of the quality of an Internet connection. A connection's bandwidth is the amount of data that can theoretically travel across the connection in a given amount of time. Bandwidth is measured in bits or megabits per second. *See Microsoft Computer Dictionary* (4th ed. 1999), *supra*, at 42 (reproduced at Doc. 54 at 3) (defining "bandwidth" as "[t]he data transfer capacity, or speed of transmission, of a digital communications system as measured in bits per second").

Cascades contends that the Network agreed to Cascades's proposed construction at the *Markman* hearing. Doc. 126 at 1-2. That is not right, as the transcript shows. The court asked whether the parties agreed about what it was that claims 26 and 28 prohibited the invention from using. Doc. 100 at 103:6-8 ("Well, are you both—do you both agree that the words 'without using bandwidth of the streaming session,' which is the claim language, refers to line 18 [of Figure 2]?"). The Network's attorney said, "I think so." *Id*. at 103:9. The court then proposed a construction—"[T]he words 'without using bandwidth of the streaming session' refers to—'the streaming session' refers to the bandwidth between the streaming server and the streaming client …"— the Network's attorney said, "I'm good with that," and Cascades's attorney said, "Yeah, yeah. I think that's probably okay." *Id*. at 104:14-18, 21-22. Later, the court said, "I

think you're both agreeing you're talking about line 18," and both parties' attorneys said yes. *Id.* at 105:5-8. Then, the court instructed the parties to try to "put that in a form of agreement on— or withdraw this as a contested claim term, if you can." *Id.* at 105:9-11. The Network's attorney responded, "We'll try to do that, yes." *Id.* at 105:16.

The Network never agreed to Cascades's construction at the hearing because the court never proposed that construction. The court instead proposed that "the bandwidth of the streaming session" was represented by line 18 in the patent's Figure 2:
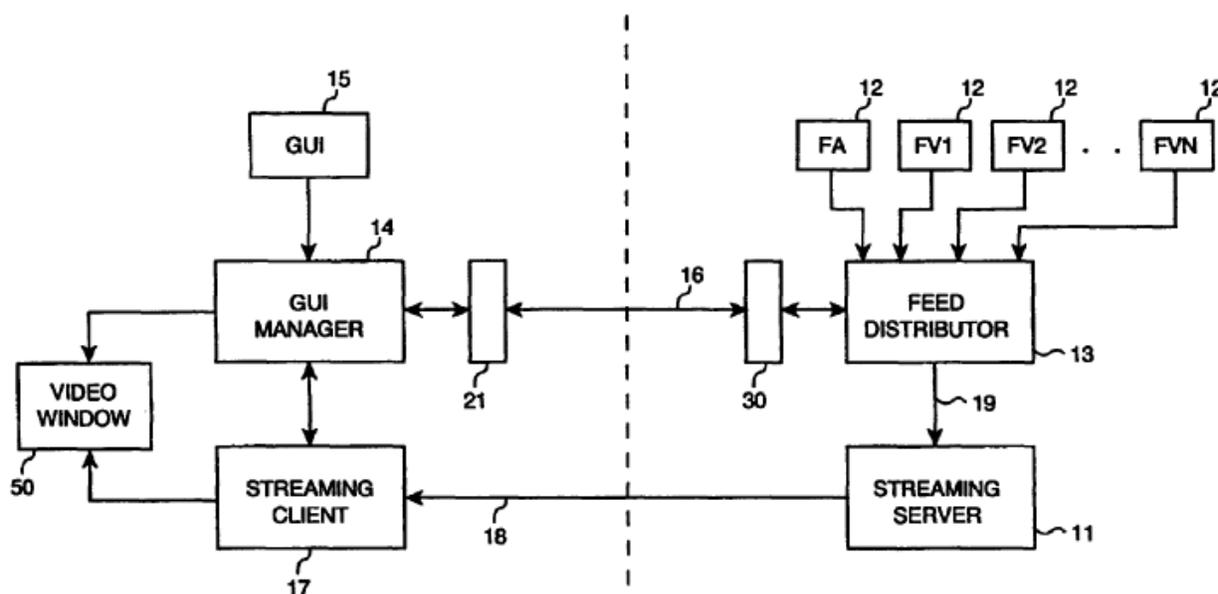

FIG. 2

But that proposition is consistent with both parties' preferred constructions. The Network contends that line 18 represents the Internet connection between the streaming server and the client, and that the invention cannot use that connection's bandwidth. Cascades retorts that line 18 represents the actual stream of data from the server to the client, and that the invention cannot use any bandwidth being used by the stream. In other words, because the parties disagree about

what line 18 represents, it was meaningless for them to agree that "the bandwidth of the streaming session" referred to the bandwidth of whatever it is that line 18 represents.

A genuine dispute remains. Claim 26 requires the invention to make other video files available "for acknowledgement" by the client "without using bandwidth of the streaming session." Doc. 55 at 22, col. 27, ll. 34-36. Claim 28 requires the invention to "transmit[]" other video files "for receipt by the client without using bandwidth of the streaming session." *Id.* at 22, col. 27, ll. 62-64. Cascades argues that a system can satisfy those requirements even if it uses bandwidth of the persistent connection being used for streaming, provided that the system does not use bandwidth being used for streaming. The Network retorts that a system satisfies the requirement only if it makes the other video files available for acknowledgment without using bandwidth of the connection being used for streaming.

The Network is correct: "without using bandwidth of the streaming session" means without using bandwidth of the connection being used for streaming. Cascades's position falsely assumes that the "streaming session" is identical to the stream. That assumption violates the principle that, "[i]n the absence of any evidence to the contrary, [courts] must presume that the use of … different terms in the claims connotes different meanings." *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000); *see also Chi. Bd. Options Exch., Inc. v. Int'l Sec. Exch., LLC*, 677 F.3d 1361, 1369 (Fed. Cir. 2012) ("The general presumption that different terms have different meanings remains."). There is no evidence that "streaming session" and "stream" are synonyms; in fact, the specification repeatedly uses "session" and "streaming session" to describe something that enables a stream. Doc. 55 at 11, col. 5, ll. 39-44 ("The stream producer 34 is a software procedure responsible for performing a streaming session on the server side. More specifically, the stream producer 34 has the task of

establishing a persistent connection with the client, sending stream global parameters to the client, and then sending the audio and video samples to the client.); *id.* at 16, col. 15, ll. 42-56 ("Once a stable network connection has been established, a streaming session on the server side comprises the following steps: 1) Sending global parameters to the client … 2) Iteration through each element of the sample vector and send [sic] sample attributes and sample raw data to the client[—i.e., streaming]."); *id.* at 18, col. 20, ll. 63-66 ("As already explained above, in a streaming session the stream producer 34 first establishes a persistent connection with the client, then sends stream global parameters to the client, and finally sends samples to the client."). And the technical dictionaries in the record define "session" as the period of time during which a connection remains open, which differs from a stream of information. *See Microsoft Computer Dictionary* (4th ed. 1999), *supra*, at 405 (reproduced at Doc. 54 at 1) (defining "session" as, "[i]n communications, the time during which two computers maintain a connection"); *The Authoritative Dictionary of IEEE Standards Terms*, *supra*, at 1035 (reproduced at Doc. 53-2 at 1) (defining "session" as "[t]he period of time during which a user of a terminal can communicate with an interactive system").

The most plausible definition of "streaming session" is the one in the dictionaries; it is the period of time during which the connection used for streaming remains open. Bandwidth is a characteristic of a network connection. The only sensible way to understand "bandwidth of the streaming session," then, is as referring to the bandwidth of the connection belonging to the streaming session—that is, of the connection used for streaming.

Accordingly, the court adopts the following construction:

> "Without using bandwidth of the streaming session" means without using bandwidth of the connection used for streaming.

Conclusion

For the reasons set forth above, the court construes the disputed claim terms as follows:

Disputed Claim Term	Court's Construction
"first audio file" / "audio file"	A "file" is a collection of data that can be identified and treated as a unit by a computer system. An "audio file" is a file containing audio data. A "first audio file" is one of two or more audio files.
"a second video file which is different from the first video file" / "the second video file being different from the first video file"	The second video file must be completely different from the first video file, and may not be a mere alteration of the first video file. For example, the second video file is completely different from the first video file if it represents a different point of view of an event. Two video files that differ only by the level of image detail they convey are mere alterations.
"interleaved"	Two files are "interleaved" if they are configured into a single stream of data in which segments of one file and segments of the other file are mixed together. The segments of the two files need not be transmitted or received in any particular pattern; they need only to be interspersed in some way.
"streaming on a server" / "streaming server"	"Streaming" means transmitting data such that playback can proceed on the user's device as data is being received at the device. "Streaming server" means a computer used for streaming.
"establishing separate sessions with the plurality of users by sending each user a separate stream"	Initiating a new network communication with each end user, over which each end user receives an independent stream. Each user's stream is independent if and only if the system or method can change the content of each user's stream without changing the content of any other user's stream.
"controlling on the server the streaming of the video files, so as to switch between video files, and streaming, upon switching, a second video file which is different from the first video file" / "controlling on the server side the streaming of video files, so as to switch streaming from the first video file to the second video file for	Determining on the [server / server side] when to switch from streaming, to at least one user, a stream including the first video file to a stream including the second video file. "User" means a person viewing audio and video files representing an event. A device is on "the server side" if it is the streaming server, or if it is any other device with which the user's computer can only communicate through the Internet. An action is taken "on the server side" if it is taken by any device on the server side.

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at least one user"	
"[step] (d) simultaneously with step (b)"	In claim 18, step (a) must be performed before any other step. No step other than step (a) may be performed before step (c). Steps (b) and (d) must be performed, at least in part, at the same time. And step (b) must be performed, at least in part, before step (e).
"key frame"	A "key frame" is a frame in a video file that the video file describes completely, rather than a frame that the video file describes only in terms of the frame's relationship to the previous frame.
"persistent connection"	A "persistent connection" is a network connection between a server and a client that can remain active for multiple communications between the server and the client.
"without using the bandwidth of the streaming session"	"Without using bandwidth of the streaming session" means without using bandwidth of the connection used for streaming.

May 4, 2016

_____
United States District Judge