IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

EVERTZ MICROSYSTEMS LTD., Plaintiff, v. LAWO INC., LAWO NORTH AMERICA CORP., and LAWO AG, Defendants.	)	C.A. No. 19-302-MN-JLH

REPORT AND RECOMMENDATION

Pending before the Court are the parties' claim construction disputes related to terms in United States Patent Nos. 8,537,838 (the "'838 Patent"), 9,100,217 (the "'217 Patent"), 9,473,322 (the "'322 Patent"), 9,654,391 (the "'391 Patent"), 9,942,139 (the "'139 Patent"), 10,164,877 (the "'877 Patent"), and 8,270,398 (the "'398 Patent"). I held a *Markman* hearing on August 5, 2020. I recommend that the Court adopt the constructions as set forth below.

I recommend that the claim terms with agreed-upon constructions be construed as follows:

	Term	**Court**
1	"unique global identification code" / "global identification code" ('838 Patent, Claim 1; '322 Patent, Claims 1, 2, 4, 10, 12; '217 Patent, Claims 1, 2, 9-10, 15, 17-19)	"A signal identifier unique to each packet source signal, such that each packet source signal may be identified using the signal identifier."

Further, as announced at the hearing, I recommend that the following disputed claim terms be construed as follows:

	Term	**Court**
1	"input processor" ('838 Patent, Claims 1, 4; '322 Patent, Claims 10-11; '217 Patent, Claims 9, 15-16)	No construction. (The Court rejects Lawo's proposed construction.)
2	"processed signal" ('838 Patent, Claims 1-3; '322 Patent, Claims 1, 7-8, 10-11; '217 Patent, Claims 1, 7-9, 12-13, 15-16)	"a signal that has been altered in some fashion"
3	"couple"/ "coupling"/ "coupled" ('838 Patent, Claims 1, 4; '391 Patent, Claims 1, 2, 9, 10, 14-17; '139 Patent, Claims 1, 8, 9, 16; '877 patent, Claim 1)	"connect"/ "connecting"/ "connected"
4	"video router" ('391 Patent, Claims 1-13, 19; '139 Patent, Claims 1-3, 11, 14-19; '877 patent, Claims 1, 11)	"a router for video signals"
5	"[line card] cross-point switch" / "[fabric card] cross-point switch" ('391 Patent, Claims 1, 2, 5, 7, 13-19; '139 Patent, Claims 1-6, 9, 11, 14-18, 20; '877 patent, Claims 1, 11)	No construction. (The Court rejects Lawo's proposed construction.)
6	"frame input terminals" ('398 Patent, Claims 1, 3-6, 9-12)	"ports for receiving one or more input signals"
7	"frame output terminals" ('398 Patent, Claim 1)	"ports for producing one or more output signals"

I. LEGAL STANDARDS

The purpose of the claim construction process is to "determin[e] the meaning and scope of the patent claims asserted to be infringed." *Markman v. Westview Instruments*, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). When the parties have an actual dispute regarding the proper scope of claim terms, their dispute must be resolved by the judge, not the jury. *Id.* at 979. The Court only needs to construe a claim term if there is a dispute over its meaning, and it only needs to be construed to the extent necessary to resolve the dispute. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

"[T]here is no magic formula or catechism for conducting claim construction." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1324 (Fed. Cir. 2005). But there are guiding principles. *Id.*

"The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *Id.* at 1313. In some cases, the ordinary meaning of a claim term, as understood by a person of ordinary skill in the art, is readily apparent even to a lay person and requires "little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314. Where the meaning is not readily apparent, however, the court may look to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). Those sources include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.*

"The claims themselves provide substantial guidance as to the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314. For example, "the context in which a term is used in the

asserted claim can be highly instructive." *Id*. Considering other, unasserted, claims can also be helpful. *Id.* "For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Id.* at 1314-15.

In addition, the "claims must be read in view of the specification, of which they are a part." *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The specification "is always highly relevant to the claim construction analysis." *Id.* (quoting *Vitronics*, 90 F.3d at 1582). The specification may contain a special definition given to a claim term by the patentee, in which case, the patentee's lexicography governs. *Id.* at 1316. The specification may also reveal an intentional disclaimer or disavowal of claim scope. *Id.* However, "even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal marks omitted).

Courts should also consider the patent's prosecution history. *Phillips*, 415 F.3d at 1317. It may inform "the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* Statements made by a patentee or patent owner during inter partes review may also be considered. *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017).

In appropriate cases, courts may also consider extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. For example, dictionaries,

especially technical dictionaries, can be helpful resources during claim construction by providing insight into commonly accepted meanings of a term to those of skill in the art. *Phillips*, 415 F.3d at 1318. Expert testimony can also be useful "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Id.*; *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331-32 (2015).

II. THE COURT'S RULING

My Report and Recommendation regarding the disputed claim terms of the '838, '217, '322, '391, '139, '877 and '398 Patents was announced from the bench at the conclusion of the hearing as follows:

> At issue in this case are seven patents, across three patent families. The parties originally requested that the Court construe 18 disputed terms. I ordered the parties to narrow that down to 10 terms, and the parties filed a letter on July 29, 2020 (D.I. 129), which listed 7 terms that the parties agree should be construed at the *Markman* hearing today.
>
> The first patent family includes three patents. U.S. Patent No. 8,537,838 is the parent patent and is titled "Packet Based Transmission of Multiple Data Signals." U.S. Patent No. 9,100,217 is a continuation of the '838 Patent and is titled "Apparatus, Systems and Methods for Packet Based Transmission of Multiple Data Signals." Patent No. 9,473,322 is a continuation of the '217 Patent and is also titled "Apparatus, Systems and Methods for Packet Based Transmission of Multiple Data Signals." The first patent family has three terms to be construed.
>
> The second patent family also includes three patents. U.S. Patent No. 9,654,391 is the parent patent and is titled "Video Router." U.S. Patent No. 9,942,139 is a continuation of the '391 Patent and is also titled "Video Router." And U.S. Patent No. 10,164,877 is a continuation of the '139 Patent and also has the same name, "Video Router." This patent family has two terms to be construed and an additional term that appears in both the first and second families.

The third family has just one patent; that's U.S. Patent No. 8,270,398, which is titled "System and Method for Signal Processing." The '398 Patent has two terms to be construed.

I am prepared to issue a ruling on the disputes argued today. I will not be issuing a separate written report and recommendation, but I will issue a written report and recommendation that incorporates my oral ruling today.

I want to emphasize before I announce my decisions that, while I am not issuing a separate opinion, we have followed a full and thorough process before making the decisions I'm about to state. We have reviewed the patents-in-suit. There was also full briefing on each of the disputed terms. The parties submitted their briefing in accordance with my procedures, so each side had an opportunity to submit two briefs and they were combined into one joint claim construction brief incorporating all arguments—that is, arguments from Plaintiff's opening brief, Defendants' answering brief, Plaintiff's reply, and Defendants' sur-reply

The parties' joint claim construction brief also attached several exhibits. Those exhibits included portions of the prosecution histories relied on by the parties. Plaintiff and Defendants submitted technology tutorials as well. Neither party elected to put on live expert testimony, but the Court permitted lengthy oral argument today. All of that has been carefully considered.

To be clear, while my oral ruling will cite to the intrinsic and extrinsic evidence that I conclude best support my recommended constructions, my failure to cite to other evidence provided by the parties does not mean that I ignored or failed to consider it. As I stated, I have considered all the arguments and evidence cited by the parties.

Now as to my rulings. As an initial matter, I'm not going to read into the record my understanding of the general legal principles of claim construction. I set forth those standards in my opinion in *3Shape A/S v. Align Tech., Inc.*, C.A. No. 18-886, 2020 WL 2188857, at *1-2 (D. Del. May 6, 2020), and I incorporate that articulation by reference.

Of course, a claim term is supposed to be given the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. Although the parties' briefing frequently refers to how a person of skill in the art would understand

a certain term or what is "common knowledge" about a term's usage, neither side included an expert declaration with their briefing.

The record before me does not indicate the qualifications of a person of skill in the art in the technology of these patents. I asked each of the parties that question today, and the point of my question was this. Regardless of the exact qualifications, I am quite certain that I am not a person of skill in the art in the data packetizing or video routing fields. Nor do I have the common knowledge that a person of ordinary skill in the art would have had in 2003, 2006, or 2013. In other words, the parties' references to what a person of skill in the art might think, without providing testimony from a such a person, were generally unhelpful. Similarly, statements that a term has a common usage in the field, without any citation to evidence, were unhelpful.

I will nevertheless construe the terms to the extent I am able, in view of the intrinsic evidence and in accordance with the governing legal principles of claim construction.

I also note that the Federal Circuit has explained, for example in the *Vivid Techs.* case, that "only those terms need to be construed that are in controversy, and only to the extent necessary to resolve the controversy." *Vivid Techs.*, 200 F.3d at 803. For all of the terms in dispute today, Evertz has argued that they do not need to be construed and that Lawo is seeking to import inappropriate limitations. Lawo, on the other hand, argues that Evertz is seeking to broaden the scope of the claims beyond that which was invented. Lawo argues that the disputed terms should be construed narrowly, *i.e.*, that they should be construed to have certain requirements as set forth in Lawo's proposed constructions.

In other words, all of the disputes between the parties boil down to whether the disputed terms have the requirements that Lawo says they do. Since, under the law, I only need to construe the terms to the extent to resolve the controversy, where I can understand what the controversy is, my general approach will be to decide whether Lawo's proposed requirements are appropriate.

I will start with the disputed terms in the first family—that's the '838, '217, and '322 Patents.

1. "input processor"

The first term is the "input processor" term. That term is found in the '838 Patent in claims 1 and 4, in the '322 Patent in

claims 10 and 11, and in the '217 Patent in claims 9, 15, and 16. For example, claim 1 of the '838 Patent states:

> 1. A system for receiving one or more input signals and for producing one or more output signals, the system comprising: . . .
>
> (b) an input processor having:
>
> (i) one or more input ports for receiving the input signals;
>
> (ii) one or more input signal processors for processing the input signals to provide one or more processed signals;
>
> (iii) an input processor memory system for buffering the input signals and the processed signals, wherein at least some of the buffered signals are designated as packet source signals;
>
> (iv) one or more packetized signal output ports;
>
> (v) one or more packetized signal output stages for retrieving one or more of the packet source signals from the input processor memory system and for producing one or more packetized signals at the packetized signal output ports, wherein each of the packetized signals includes a series of packetized signal packets, wherein each of the packetized signal packets contains the unique global identification code corresponding to one of the packet source signals and data corresponding to the same packet source signal; and
>
> (vi) an input processor local controller for controlling the operation of at least the signal processors and the packetized signal output stages in

> response to the input processor control signals . . . .

The parties agree that "input processor" should be construed the same across all three patents in the first family.

Evertz argues that the term "input processor" needs no construction because the claim itself already sets forth what the input processor does. Evertz says that the plain and ordinary meaning of input processor is "a processor that receives one or more input signals." Lawo proposes the construction, "a processor that processes input signals and generates a combined packetized signal stream."

I decline to adopt Lawo's construction. Its proposed construction appears to be adding two requirements. First, it requires that the input processor process input signals. Evertz said in the hearing today that it doesn't dispute that the input processor has to process input signals, but Evertz thinks it's inappropriate to construe "input processor" to include the phrase "that processes input signals." I agree with that. My analysis starts and ends with the claims. Independent claim 1 of the '838 Patent, which I just read, already includes limitations directed towards numerous features of the claimed "input processor," including that it is "having . . . input signal processors for processing the input signals." The rest of the claims have similar limitations. In short, I'm not seeing why it's necessary to incorporate that requirement into the construction of "input processor" and I do not think it's appropriate.

Lawo also seeks to add the requirement that the input processor generate a combined packetized signal stream. I also conclude that it is inappropriate to have that requirement in the construction. My analysis here also starts and essentially ends with the claims. Again, the parties agree that the term should be construed the same across all three patents. Looking at claim 9 of the '217 Patent, the other limitations already contemplate that "one or more input signals" are combined to "generate the packetized signal," which suggests that a person of ordinary skill in the art would not understand the term "input processor" to inherently include the requirement that the processed input signals be combined. And, looking at claim 1 of the '838 Patent, it refers to one or more packetized signals but there is nothing in the claim that relates to whether they must be combined into a signal stream.

Moving on to the specification, I am unpersuaded that the portions cited by Lawo support its contention that a person of skill

in the art would understand the phrase "input processor" to include the requirement that it "generate a combined packetized signal stream" from the input signals.

I also agree with Evertz that Lawo's proposed construction is unhelpful and that the reference to a "combined packetized signal stream" potentially introduces more ambiguity and may even cause more confusion over what the phrase means, particularly since it's not used in the patent. There was discussion during the hearing today about what "combined packetized signal stream" means and whether it's a term of art. Regardless of the answers to those questions, it's not clear to me the phrase would help the jury understand what the claimed "input processor" means.

Accordingly, I reject Lawo's construction and, on this record, I agree with Evertz that the term "input processor" need not be construed.

2. "processed signal"

The next term is "processed signal." That term is found in the '838 Patent in claims 1 through 3, the '322 Patent in claims 1, 7, 8, 10, and 11, and the '217 Patent in claims 1, 7, 8, 9, 12, 13, 15, and 16. Claim 1 of the '838 Patent is representative of how the term is used. It states:

> 1. A system for receiving one or more input signals and for producing one or more output signals, the system comprising: . . .
>
> (b) an input processor having:
>
> (i) one or more input ports for receiving the input signals;
>
> (ii) one or more input signal processors for processing the input signals to provide one or more processed signals; [and]
>
> (iii) an input processor memory system for buffering the input signals and the processed signals, wherein at least some of the buffered signals are designated as packet source signals; . . . .

Another example of how this term is used is in claim 1 of the '322 Patent. It requires that, upon determining the signals derived from the one or more input signals required to generate the packetized signal, "processing at least one input signals to provide a corresponding processed signal, wherein the corresponding processed signal is required to generate the packetized signal, and buffering the corresponding processed signal in the memory system."

Evertz argues that this term needs no construction because the claims already contain substantial limitations relating to the claimed "processed signal." Evertz argues that, to the extent the term does need to be construed, the term's plain and ordinary meaning is "a signal that is produced by operating on the data payload of the input signal." Lawo proposes the construction, "a signal that has been altered in some fashion by modifying at least one parameter or format or characteristic associated with the original signal."

To be honest, I'm not really sure what the dispute is here, or even if there is one. During the hearing today, both parties agreed that they were okay with the language, "a signal that has been altered in some fashion." However, Evertz wants additional language to make clear that the alteration has to be on the data in the actual signal and not just on how the signal is packaged. I don't know if Lawo really even disputes that.

Accordingly, I will construe the term to mean "a signal that has been altered in some fashion." If there is an additional dispute about whether that refers to the actual signal as opposed to how it is packaged, you can bring it up at the summary judgment stage. But I'm not going to spend time on it now when I don't know if there's a dispute and it wasn't the focus of the parties' briefing.

3. "couple"/"coupling"/"coupled"

The next group of terms is "couple"/"coupling"/"coupled." Those terms are found in the '838 Patent at claims 1 and 4, the '391 Patent at claims 1, 2, 9, 10 and 14 through 17, the '139 Patent at claims 1, 8, 9, and 16, and the '877 Patent at claim 1.

According to the parties, the terms "couple," "coupled" and "coupling" are used similarly between the patent families and should be construed the same for all families. Claim 1 of the '838 Patent, for example, states:

> 1. A system for receiving one or more input signals and for producing one or more output signals, the system comprising: . . .
>
> (d) a communications link coupled between the one or more packetized signal output ports and the one or more packetized signal input ports.

As another example, claim 1 of the '391 Patent states:

> 1. A video router comprising:
>
> . . . a plurality of line cards, each line card including: a plurality of input ports and output ports, each input port and output port is coupled to a respective external signal through the backplane; . . . [and]
>
> a line card controller coupled to the line card cross-point switch to selectively couple some of the input switch terminals to the output switch terminals . . . .

Evertz argues that the coupling terms are well understood terms of "common patent parlance" that, accordingly, need no construction. Evertz does not cite any support for that proposition, nor has it provided the testimony of one of ordinary skill in the art indicating that is so. Evertz argues that, if the term needs to be construed, the plain and ordinary meaning is "connected, directly or indirectly through one or more intermediate components." Lawo argues that the plain and ordinary meaning of "coupled" is "physically connected." Yet, like Evertz, Lawo also fails to provide any authority supporting its asserted "plain meaning," or authority supporting its contention that it can't include non-physical connections.

Both parties agree that the term means to "connect" in some way. The primary dispute is whether the connection must be "physical." Lawo contends that it must. But I'm not sure what it means by physical. The reason is that Lawo has not adequately explained what the dispute is. Physical versus what? Is this an issue about direct versus indirect couplings? Physical versus logical couplings? Wired versus wireless couplings? I don't know.

Evertz agrees that the specification supports a construction that includes physical connections, but it points out that physical connections are not required. According to Evertz, nothing in the claim language requires a physical connection as opposed to any other type of connection.

Lawo may be right about how a person of ordinary skill in the art would understand the coupling terms as a matter of science. But the record is insufficient to make a finding about that. This is a dispute where the Court would have greatly benefited from having input from a person of ordinary skill in the art about what the term "coupling" means both in general and in the specific context of these patents. Having carefully read all of the patents, it's not clear to me that "coupling" does mean the same thing across these patent families; nevertheless, the parties have agreed that it should be construed the same way.

What I will say is this: I'm unpersuaded as a matter of patent law that the term "coupling" as used in these patents is restricted to a physical connection. Starting with the claims, claim 1 of the '838 Patent requires a communications link "coupled" between one or more output ports and one or more input ports. Nothing in claim 1 of the '838 Patent appears to require that the data be transmitted over a physical connection.

The specification of the '838 Patent also talks about what the communication link that is coupled to those ports might be. It says it "may be a cable or may be a LAN, WAN, the Internet or another communication system." ('838 Patent at 14:20-22.) In other words, the specification suggests that the communications link, which is what couples the output and input ports, can be any medium in which data is transferred, *i.e.*, a logical as opposed to physical coupling.

Other parts of the specification refer to direct and indirect couplings in one context (*e.g.*, *id.* at 1:41-42), to static and dynamic couplings in another context (*id.* at 6:29-31), and to permanent couplings (*id.* at 6:16-20), but none of those references really informs the physical/non-physical dispute before me. I do note that the '838 Patent at column 1, line 19 refers to prior art devices that were "physically coupled." ('838 Patent at 1:19.) That suggests that the patentee did not understand the term "coupling" to inherently mean physical coupling.

Lawo says that the figures support a physical connection, for example, Figure 2 of the first patent family or Figure 4 of the second

patent family, but those figures are logical or block diagrams, and I'm unpersuaded that they inform the construction of coupling for the dispute here.

All of this suggests that I should reject Lawo's construction, and I will reject it. That said, the claims sometimes use the "coupling" terms in a way that is suggestive of a physical coupling and may turn out to actually require a physical coupling depending on the context in which they are used. Accordingly—and I do not take Evertz to disagree with this—where the claims themselves use "coupling" in a way that must include a physical coupling, that limitation must be met. For example, where the '391 Patent requires something to be coupled to backplane connections, it has to be coupled to backplane connections. But I am not, on this record, going to import Lawo's proposed "physical" requirement into all uses of the term "coupling" across both patent families.

To sum up, the parties want me to construe this term the same way across all of the patents. It's possible that a person skilled in the art, in certain contexts, would understand the term to refer to physical couplings, but the record is insufficient for me to make a finding about that. The intrinsic evidence, however, suggests that the patentee used the term "coupling" to refer to any medium in which data is transferred, *i.e.*, a logical coupling. Accordingly, I will reject Lawo's proposed construction.

I don't know if there is a dispute about direct v. indirect couplings, as set forth in Evertz's proposed construction. So I will simply construe the terms "couple," "coupling" and "coupled" as "connect," "connecting" and "connected," respectively. If there is an additional dispute not relating to "physical" coupling, the parties can raise it at the summary judgment stage.

4. "video router"

The next term is "video router." That appears in claims 1 through 13, and 19 of the '391 Patent, claims 1 through 3, 11, and 14 through 19 of the '139 Patent, and claims 1 and 11 of the '877 Patent. It is used in independent claim 1 of the '391 Patent as follows in pertinent part:

> 1. A video router comprising:
>
> a backplane . . . ;
>
> a plurality of line cards, . . . ;

> one or more fabric cards, . . . ; and
>
> a controller communication network coupled to each of the line cards and fabric cards to control the operation of the fabric card controllers and the line card controllers.

Independent claim 1 of the '139 Patent also requires a "video router," and it says that the video router comprises, in pertinent part: at least one line card, a plurality of input ports and output ports, a line card cross-point switch, and at least one fabric card. Independent claim 1 of the '877 Patent also requires a video router, and it says that the video router comprises, in pertinent part: a backplane, a line card, a line card cross-point switch, and a fabric card.

Like the other terms, Evertz argues that "video router" needs no construction. Lawo proposes the following construction: "a physical device consisting of line cards and fabric cards physically connected that can transfer streams on input ports to output ports, under the control of a controlling device."

The central disagreement here seems to be whether the "video router" and its components must be solely physical components. Evertz acknowledged during the video hearing today that some of the claimed components have physical elements. But it disputes Lawo's proposal to the extent Lawo is trying to require that all of the elements of the claimed "video router" are met by physical as opposed to logical components. According to Lawo, a person of skill in the art would understand the elements of the video router described in the claim to be solely physical components. But Lawo has submitted no testimony supporting that.

As an initial matter, I agree with Evertz that it is inappropriate to import into the construction of "video router" the requirements that it have line cards, fabric cards, input ports, output ports, and a controlling device. Those requirements are elsewhere in the claim, so a person of skill in the art reading this patent would not understand the term "video router" to inherently include them or how they are connected to each other.

I also agree with Evertz that Lawo's use of the phase "consisting of" is confusing. I don't know what Lawo was originally going for there, but to the extent it is trying to say that the video router cannot include additional unclaimed physical or non-

physical components, that is wrong as matter of law because the claims themselves use the word "comprising."

Lawo also argues that the specification supports its construction because the figures show physical components. I don't disagree that some of the figures do show physical components, for example Figures 1 and 2, and, indeed, Evertz agrees that the claims include some physical limitations. But it doesn't follow that the asserted claims cover only systems that use physical components and no virtual components.

I also reject Lawo's argument that many of the diagrams clearly show physical connections, for example, Figure 3. That appears to be a logical diagram and I'm unpersuaded by Lawo's attorney argument that a person of skill in the art would understand it to refer solely to physical connections.

And, finally, Lawo argues that Evertz disclaimed non-physical components during patent prosecution. The pertinent portion is set forth in Exhibit K to the joint claim construction chart at JA-281-82. (D.I. 91, Ex. K at JA-281-82.) That portion, however, does not appear to totally disclaim the use of non-physical components, much less clearly and unambiguously. And Exhibit K as a whole, while showing that the patentee argued that the present invention has different components than the cited prior art reference, does not clearly require that all of those components must be physical. I also agree with Evertz that if there was a disclaimer, Lawo hasn't explained how its proposed construction ties to that disclaimer.

In sum, all I have before me is intrinsic evidence. I reject Lawo's assertion that, as a matter of patent law, the "video router" term includes only physical components and would be understood by a person of skill in the art to include the particular physical components set forth in Lawo's proposed construction.

I construe this term to mean "a router for video signals."

5. "[line card] cross-point switch"/"[fabric card] cross-point switch"

The last set of terms in the second family are "[line card] cross-point switch" and "[fabric card] cross-point switch." Those terms are used in the '391 Patent in claims 1, 2, 5, 7, and 13 through 19, in the '139 Patent in claims 1 through 6, 9, 11, 14 through 18,

and 20, and the '877 Patent in claims 1 and 11. Claim 1 of the '391 Patent recites, in part:

> 1. A video router comprising . . .
>
> a plurality of line cards, each line card including: . . .
>
> a line card cross-point switch having a plurality of input switch terminals and a plurality of output switch terminals such that a first plurality of input and output switch terminals are coupled to the respective plurality of input and output ports and a second plurality of input and output switch terminals are coupled to the plurality of backplane connections;
>
> a line card controller coupled to the line card cross-point switch to selectively couple some of the input switch terminals to the output switch terminals; [and]
>
> one or more fabric cards, each fabric card including:
>
> a fabric card cross-point switch having a plurality of input switch terminals and a plurality of output switch terminals coupled to the plurality of back-plane connections . . . .

Evertz again argues that no construction is needed. Lawo argues that a construction is needed and proposes, "a physical switch consisting of a variety of input ports that can be connected to any of a variety of output ports."

The primary dispute is whether the claimed cross-point switch must be an entirely physical device. Evertz agrees that a cross-point switch has some physicality to it, but argues that a cross-point switch would be understood by one of skill in the art to include a physical device that has a logical switch.

Starting with the claims, Lawo makes the conclusory assertion that the claims inform the analysis because claim 1 of the

'391 Patent covers "dedicated hardware." I reject that for the same reasons stated in my construction of "video router."

Moving to the specification, Lawo asserts that all of the embodiments and figures show physical switches. As for the figures, I reject Lawo's argument for the same reasons explained in my analysis of the "video router" term. Moreover, Lawo has not persuasively explained how the specification informs a person of skill in the art's understanding of a cross-point switch as a physical switch. Lawo has not pointed to any place in the specification that even uses the word "physical."

Lawo again argues that the term was limited during patent prosecution, again citing Exhibit K at JA-281-82. (D.I. 91, Ex. K at JA-281-82.) For the reasons explained earlier, I disagree that the excerpted portion demonstrates a clear and unambiguous disclaimer of systems that use non-physical components.

At various points in its briefs, Lawo asserts that "cross-point technology" is a specific technology and is a physical switch. It says that this is "well known" and that its plain and ordinary meaning is a specific kind of physical switch. But none of that is clear to me from the intrinsic evidence, and I certainly can't say it as a matter of law.

At Exhibit L, Lawo provided extrinsic evidence in the form of a definition of "crossbar switch" from the Illustrated Dictionary of Electronics, 7th Edition. (D.I. 115, Ex. L at JA-310.) But Lawo does not explain or support with evidence why a person of skill in the art would understand a crossbar switch to be the same as a cross-point switch. What's more, Evertz provided its own dictionary definition from Newton's Telecom Dictionary, 18th Edition, which suggests that cross-point switch is not the same as crossbar switch, and that a cross-point switch might encompass physical as well as logical contacts. (D.I. 115, Ex. M at JA-328.) I therefore disregard Lawo's extrinsic evidence regarding the definition of crossbar switch.

At the end of the day, I am not a person of ordinary skill in the art and I have not been provided testimony from someone who is. The record before me is insufficient to make a finding that a person of skill in the art would understand "cross-point switch" to be limited in accordance with Lawo's construction. All I can do is construe the term in view of the intrinsic evidence before me and the rules of claim construction. And I conclude there is no requirement

that the claimed "cross-point switch[es]" consist solely of physical components.

Evertz also objects to Lawo's use of the phrase "consisting of," its use of the word "ports" instead of "terminals" and its use of the word "variety" instead of "plurality." I reject Lawo's use of the phrase "consisting of" for the reasons stated earlier. I agree with Evertz that Lawo's use of the phrases "input ports" and "output ports" instead of "input terminals" and "output terminals" is also inappropriate in view of the claims, which refer to the claimed cross-point switches as having terminals, not ports. And I agree with Evertz that Lawo's introduction of the word "variety" is imprecise and injects more ambiguity into the claims. The claims require a "plurality" of terminals, not a "variety." In other words, the claim requires more than one terminal, not various types of terminals.

Accordingly, I'm going to reject Lawo's construction. As I don't understand there to be any more disputes, I decline to further construe this phrase.

6. "frame input terminals"

The next term is "frame input terminals." That term appears in the '398 Patent at claims 1, 3 through 6, and 9 through 12. Independent claim 1 recites, in part:

> 1. A modular system for processing signals comprising:
>
> a plurality of frame input terminals for receiving a plurality of input signals; [and]
>
> a plurality of input modules coupled to the frame input terminals to receive the input signals . . . .

The dependent claims recite that the "frame input terminals" are configured to receive specific types of signals, including radio frequency signals, optical signals, data signals, and video signals.

Evertz argues that the term needs no construction. Evertz argues that if it needs to be construed, it should have its plain and ordinary meaning, which is "ports for receiving one or more input signals." Lawo proposes the following construction: "physical connection points on or at a physical input interface, receiving signals in its original format."

I understand there to be two disputes here: one, whether the frame input terminal must receive data via a physical connection, and, two, whether the frame input terminal must receive the signal in its original format.

The first, and primary, dispute is whether the frame input terminals must have physical connection points. I'll start with the claims. Lawo argues that the language of the claims "obviously speak to a system made of physical components" and it argues that the claim's usage of "frame input terminal" must input signals from a physical cable on or at the input interface. Having carefully reviewed the claim language, I'm unpersuaded that they obviously require that the frame input terminal receives data through a physical connection.

Moving on to the specification, Lawo points to column 3, lines 3 through 7, which states: "The signal flow between the frame input terminals and output processor input terminals operates in the electrical domain and each signal is switched through the cross point array in its original format, as received at the frame input terminals." ('398 Patent at 3:3-7.) Lawo argues that there is no debate that "in the electrical domain" means "physical electrical signals." I don't take Evertz to dispute that. However, Evertz points out, and I agree, that the specification is talking about what happens to the signal within the system. It doesn't answer the question of whether the signals are received via a physical connection at the frame input terminal.

Lawo asserts that the quoted portion of the specification "only makes sense where the frame input terminal is a physical connection point." I don't know if Lawo is correct as a matter of science, but I have no testimony before me on that fact. What I can say is that this portion of the specification does not, as a matter of patent law, rule out input ports that receive data other than through a physical connection.

Lawo also points to the figures, but I agree with Evertz that they are not informative on this question, as those diagrams appear to illustrate not only physical structures but also the flow of data.

Evertz also submitted extrinsic evidence in the form of a definition of "terminal" set forth in the Illustrated Dictionary of Electronics, which states as the fourth definition "in a data-communications system, a point of data input or output." I don't rely on that definition in rejecting Lawo's construction, but I do note

for the record that the definition is more consistent with Evertz's position.

In sum, the construction of "frame input terminal" does not include the requirement that it receive data via a physical connection.

The second dispute is about whether the frame input terminal must receive the signal in its original format, as Lawo proposes. To the extent that Lawo's construction is inserting a requirement that the input frame terminal receive only signals that are in their original format, I reject that. The claims don't require that, and the specification doesn't require that. The specification at column 3, lines 3 through 7, which I quoted a minute ago, refers to the flow of data through the system in its original format "as received at the frame input terminals," but that doesn't bear on the question of what has happened to the signal before it is received at the frame input terminal.

In sum, I think Lawo's proposed construction introduces confusion. I think Evertz's construction is consistent with the claims and specifications and I will recommend that it be adopted as "ports for receiving one or more input signals."

7. "frame output terminals"

The last term is "frame output terminals." It appears in claim 1 of the '398 Patent. Claim 1 states, in part:

> a controller coupled to: . . .
>
> > at least one of the output processors to controllably configure the at least one output processor to processor input signals received at the one or more processor input terminals of the at least one output processor to provide one or more output signals at the one or more frame output terminals of the at least one output processor.

Evertz argues that the term needs no construction and should have its plain and ordinary meaning, which is "ports for producing one or more output signals." Lawo proposes the following construction: "physical connection points on or at a physical output interface, receiving a processed output signal."

The dispute here is whether the frame output terminal outputs data via a physical connection. I reject Lawo's position for

> the same reasons as the last term. Lawo again says that the claims "obviously speak to a system made of physical components." It is not obvious to me, however, that the claims require the data to be outputted via a physical connection.
>
> Moving to the specification, I am unpersuaded that the cited portions, including column 2, lines 49 through 52, support a requirement that the frame output terminals output data via a physical connection. They are consistent with a construction that includes a physical connection, but nothing in the specification requires that.
>
> Accordingly, I will adopt Evertz's proposal and I construe the phrase to mean "ports for producing one or more output signals."
>
> And that concludes my ruling.

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B),(C), Federal Rule of Civil Procedure 72(b)(1), and District of Delaware Local Rule 72.1. Any objections to the Report and Recommendation shall be filed within fourteen days and limited to ten pages. Any response shall be filed within fourteen days thereafter and limited to ten pages. The failure of a party to object to legal conclusions may result in the loss of the right to *de novo* review in the district court.

The parties are directed to the Court's "Standing Order for Objections Filed Under Fed. R. Civ. P. 72," dated October 9, 2013, a copy of which can be found on the Court's website.

Dated: August 13, 2020

The Honorable Jennifer L. Hall
United States Magistrate Judge