

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

CHARTER COMMUNICATIONS, INC., et al.,
Defendants.

C.A. No. 17-1734-RGA

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

MEDIACOM COMMUNICATIONS CORP.,
Defendant.

C.A. No. 17-1736-RGA

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

WIDEOPENWEST, INC., et al.,
Defendants.

C.A. No. 18-361-RGA

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

ATLANTIC BROADBAND FINANCE, LLC, et al.,
Defendants.

C.A. No. 18-362-RGA

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

GRANDE COMMUNICATIONS NETWORKS, LLC,
et al.,
Defendants.

C.A. No. 18-363-RGA

SPRINT COMMUNICATIONS COMPANY LP,
Plaintiff,

v.

FRONTIER COMMUNICATIONS CORP.,
Defendant.

C.A. No. 18-536-RGA

MEMORANDUM OPINION

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December 20, 2019


ANDREWS, U.S. DISTRICT JUDGE:

Currently before the Court is the issue of claim construction of various terms in U.S. Patent Nos. 6,452,932 (“the ’932 patent”), 6,463,052 (“the ’052 patent”), 6,633,561 (“the ’3,561 patent”), 7,286,561 (“the ’6,561 patent”), 7,505,454 (“the ’454 patent”), 6,298,064 (“the ’064 patent”), 6,343,084 (“the ’084 patent”), 6,473,429 (“the ’429 patent”), 7,327,728 (“the ’728 patent”), 7,324,534 (“the ’534 patent”), 6,330,224 (“the ’224 patent”), 6,697,340 (“the ’340 patent”), 6,999,463 (“the ’463 patent”), 6,563,918 (“the ’918 patent”), and 7,693,131 (“the ’131 patent”). I have considered the Parties’ Joint Claim Construction Brief. (Civ. Act. No. 17-cv-1734-RGA; D.I. 162). I heard oral argument on October 1, 2019.

I. BACKGROUND

The patents in these cases relate to developments in voice-over-packet technology. Today, a version of this technology enables consumers to make telephone calls over the Internet. Specifically, the patents Sprint is asserting here disclose methods for routing calls between traditional telephone lines and packet-based data networks.

The patents fall into seven groups: 1) Call Control (’932, ’052, ’3,561, ’6,561, and ’454); 2) Broadband (’064, ’084, ’429, and ’728); 3) Broadband Interface (’534); 4) Enhanced Services (’224 and ’340); 5) Number Portability (’463); 6) Addressing Servers (’918); and 7) Residential Hub (’131). The patents within each group share an identical written description.

II. LEGAL STANDARD

“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.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). “[T]here is no magic formula or catechism for conducting claim construction.’ Instead, the court is free to attach the appropriate

weight to appropriate sources ‘in light of the statutes and policies that inform patent law.’”

SoftView LLC v. Apple Inc., 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Of these sources, “the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

“[T]he words of a claim are generally given their ordinary and customary meaning. . . . [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312–13 (citations and internal quotation marks omitted). “[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted). “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.” *Id.* at 1314.

When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court’s construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317–19 (internal quotation marks

omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

“A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that “a claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.” *Osram GMBH v. Int’l Trade Comm’n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF AGREED-UPON TERMS

I adopt the following agreed-upon construction:

Claim Term	Construction
“a network code that identifies a network element to provide egress . . . from the packet communication system” (’3,561 Patent, Claims 1 and 24; ’052 Patent, Claim 1)	“a code identifying a network element which network element provides an exit from a packet communication system”
“a network code representing a network element to egress the call from the packet system” (’6,561 Patent, Claim 14)	

IV. CONSTRUCTION OF DISPUTED TERMS

1. “interworking unit” (’429, ’084, ’064, ’224 Patents, Claim 1; ’918 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction*: “device that translates communications between asynchronous and synchronous formats”
 - b. *Defendants’ proposed construction*: “ATM interworking multiplexer”
 - c. *Court’s construction*: “ATM interworking multiplexer”

The “interworking unit” is a crucial component of the claimed inventions. The claims of the ’429, ’084, ’064, ’224, and ’918 patents all describe the “interworking unit” as a device that converts communications between different formats, allowing calls to transfer across phone lines and packet-based networks. The dispute is whether the term is limited to Asynchronous Transfer Mode (ATM)—a specific type of packet-based technology. I, like the other district courts that have considered this question, conclude it is. *See Cox Commc ’ns Inc. v. Sprint Commc ’ns Co. L.P.*, 2016 WL 1125729 at *4 (D. Del. Mar. 21, 2016); *Sprint Commc ’ns Co. v. Comcast Cable Commc ’ns*, 2014 WL 5089402 at *15-17 (D. Kan. Oct. 9, 2014); *Sprint Commc ’ns Co. L.P. v. Big River Tel. Co.*, 2009 WL 1992537 at *11-13 (D. Kan. July 8, 2009); *Sprint Commc ’ns Co. v. Vonage Holdings Corp.*, 500 F. Supp. 2d 1290, 1319 (D. Kan. 2007). The parties are therefore limited to arguments consistent with this holding that the “interworking unit” in these patents is an “ATM interworking multiplexer.”

While claim terms are generally given their plain and ordinary meaning, there are two exceptions: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Defendants do not argue that the plain and ordinary meaning of “interworking unit,” in isolation, is limited to ATM or that the inventor re-defined the term through lexicography. That leaves disavowal.

Disavowal “requires that the specification or prosecution history make clear that the invention does not include a particular feature or is clearly limited to a particular form of the invention.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal citations omitted). An explicit re-definition is not necessary. *See SciMed Life Sys., Inc. v.*

Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2001). While courts must read claims in view of the specification, they may not simply import limitations from the specification into the claims. *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1148 (Fed. Cir. 2003). The Federal Circuit has acknowledged “there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186-87 (Fed. Cir. 1998).

The Federal Circuit has found disavowal where there were “clear, repeated, and consistent statements in the specification.” *SkinMedica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1203 (Fed. Cir. 2013). Disavowal also applies when the specification includes language such as “the present invention requires . . .” or “the present invention is . . .” or “all embodiments of the present invention are. . . .” *Hill-Rom Servs., Inc.* 755 F.3d at 1372.

In *Microsoft Corp. v. Multi-Tech Sys., Inc.*, the Federal Circuit construed the words “sending,” “transmitting,” and “receiving” as limited to communications “over a telephone line.” 357 F.3d 1340, 1348 (Fed. Cir. 2004). The court found the specification “repeatedly and consistently” described the claimed inventions as using a telephone line, and those statements were “not limited to describing a preferred embodiment, but more broadly describe[d] the overall inventions.” *Id.* The court therefore reached the “inescapable conclusion” that the claims did not encompass data transmissions over networks such as the Internet. *Id.*

Similarly here, the Broadband specification (the ’064, ’084, and ’429 patents) repeatedly and consistently refers to the device that translates communications (i.e., the interworking unit) as an “ATM interworking multiplexer.” Other features are clearly optional. The specification explains the multiplexer “could” include a digital signal; the processing “could” include echo

control and encryption; “various embodiments” accept calls over DS0 connections. (’084 patent, 2:58-64). No such language suggests the ATM interworking multiplexer is an element of only some embodiments. Instead, the summary of the invention discloses, “The system comprises an ATM interworking multiplexer and a signaling processor linked to the ATM interworking multiplexer.” (’084 patent, 2:11-14). The summary further explains that signals are transmitted “to the ATM interworking multiplexer” and that “[t]he invention also includes an ATM interworking multiplexer for providing calls with virtual connections.” (*Id.* at 2:18-19, 2:46-47). Such repeated references might not amount to an explicit re-definition, but they do create a “clear and unmistakable” implication that the patentee intended the term “interworking unit” to mean an “ATM interworking multiplexer.” *Thorner* 669 F.3d at 1366-67 (“To constitute disclaimer, there must be a clear and unmistakable disclaimer.”)

Plaintiff argues the canon of “claim differentiation” counsels a broader reading. (D.I. 162 at 16). According to this canon, “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.” *Phillips* 415 F.3d at 1315. For example, claim 8 of the ’084 patent (unasserted here) claims the “method of claim 1 wherein the identifiers comprise asynchronous transfer mode connections.” There would be no reason, Plaintiff argues, for the patentee to recite a dependent claim limited to ATM if the independent claim were itself already limited to ATM. Claim differentiation, however, “is not a hard and fast rule, and the presumption can be overcome by a contrary construction required by the specification or prosecution history.” *Hill-Rom Servs., Inc.* 755 F.3d at 1374; *see also Poly-Am., L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1137 (Fed. Cir. 2016) (“[C]laim differentiation does not serve to broaden claims beyond their meaning in light of the patent as a whole, and it cannot override clear statements of claim scope

found in the specification and prosecution history.”) The clear and repeated references to an “ATM interworking multiplexer” therefore control over any implication based on claim differentiation.

Plaintiff asserts the Federal Circuit has already held these patents are broader than ATM technology. (D.I. 162 at 13). That nonprecedential ruling, *Sprint Commc’ns Co., L.P. v. Time Warner Cable, Inc.*, was not about claim construction. 760 F. App’x 977 (Fed. Cir. 2019). Rather, the court concluded, based on the record at trial, that Time Warner had not shown by clear and convincing evidence that the Broadband patents failed the written description requirement of 35 U.S.C. § 112. *Id.* at 987. That is a fundamentally different inquiry from the task of claim construction. Nonprecedential rulings are, of course, not binding, but they can provide guidance and persuasive reasoning. Because of the different analysis called for here though, I find little guidance from that decision in interpreting this term.

Plaintiff argues the Broadband specification must be broader than ATM because it incorporates by reference the Call Control specification. (D.I. 162 at 12). Defendants have not sought an ATM limitation on the Call Control patents, which contemplate networks that can be “narrowband, broadband, packet-based, or a hybrid.” (’3,561 patent at 8:44). But just referencing a broader specification does not necessarily expand the scope of a patent. “[I]ncorporation by reference does not convert the invention of the incorporated patent into the invention of the host patent.” *Modine Mfg. v. U.S. ITC*, 75 F.3d 1545, 1553 (Fed. Cir. 1996). So, even considering the broader patent specification incorporated by reference, a person of ordinary skill in the art would still read the clear and repeated references to ATM technology in the Broadband specification to infer that the “interworking unit” in the Broadband patents is an “ATM interworking multiplexer.”

The '224 and '918 patents (which are in the Enhanced Services and Addressing Servers groups, respectively) also disclaim any meaning of “interworking unit” beyond ATM technology. The first sentence of the '224 specification summary section discloses, “The present invention comprises a system for providing services for a call from a first communication device in an asynchronous transfer mode format.” ('224 patent, 1:26-28). The abstract explains the “asynchronous transfer mode interworking unit” receives user communications and converts them into a compatible format. (*Id.* at Abstract). Similarly, the '918 patent specification explains, “The present invention further comprises a method for connecting a call through an asynchronous transfer mode system” ('918 patent, 2:11-14). The Federal Circuit has held these kinds of unequivocal statements about the features of the “present invention” limit the scope of the claim terms. *See Regents of Univ. of Minn. v. AGA Med. Corp.*, 717 F.3d 929, 936 (Fed. Cir. 2013); *Honeywell Int'l, Inc. v. IIT Indus., Inc.*, 452 F.3d 1312, 1316-19 (Fed. Cir. 2006); *SciMed*, 242 F.3d at 1343-44.

2. “communication unit” ('728 Patent, Claim 1)
 - a. *Plaintiff's proposed construction*: Plain and ordinary. No construction necessary. Alternative: “device that converts communication between asynchronous and synchronous formats.”
 - b. *Defendants' proposed construction*: “ATM interworking multiplexer”
 - c. *Court's construction*: “ATM interworking multiplexer”

The '728 patent is in the Broadband group, but unlike the other Broadband patents, it uses the term “communication unit” instead of “interworking unit” for the device that converts communications between different formats. Specifically, claim 1 of '728 describes the communication unit as “receiving the control messages and user communications” and “converting the user communications from a first communication format into a second

communication format.” The phrases “communication unit” and “interworking unit” do not appear in the Broadband specification. Instead, as discussed above, the specification refers repeatedly and consistently to this device as an “ATM interworking multiplexer.” Given that the “communication unit” appears to be essentially the same device as the “interworking unit,” I construe it too to mean an “ATM interworking multiplexer.”

3. “bearer interface” (’534 Patent, Claim 1)
 - a. *Plaintiff’s proposed construction:* Plain and ordinary. No construction necessary. Alternative: “packet network interface”
 - b. *Defendants’ proposed construction:* “ATM interworking multiplexer”
 - c. *Court’s construction:* Plain and ordinary meaning

Defendants argue the “bearer interface” in the ’534 patent, which is in the Broadband Interface group, is interchangeable with the “interworking unit” described in the Broadband patents and should therefore receive the same construction. (D.I. 162 at 27). The Broadband Interface specification, however, differs in crucial respects from the Broadband specification. While both refer extensively to ATM, the Broadband Interface specification suggests ATM is only a preferred embodiment. It explains the system “interworks between a broadband system, such as an Asynchronous Transfer Mode (ATM) system, and a GR-303 system.” (’534 patent, 1:67-2:2). It also states, “Other embodiments include . . . an ATM multiplexer.” (*Id.* at 2:19-21). These statements imply ATM technology is a possible, but not essential, feature of the invention. No such statements appear in the Broadband specification.

Thus, while the Broadband Interface specification includes numerous references to ATM technology, these references are not enough to meet the “exacting” standard for finding disavowal. *See, e.g., Hill-Rom Servs., Inc.*, 755 F.3d at 1371. “We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.” *Thorner*,

669 F.3d at 1366. Accordingly, I conclude the “bearer interface” is not limited to ATM, and I instruct Defendants not to attempt to import that limitation into the term.

Defendants assert “bearer interface” is not a well-known term in the art, but they suggest no alternative construction that is not based on ATM. (D.I. 162 at 28). Given the minimal discussion in the briefing about whether Plaintiff’s suggestion of “packet network interface” would be an appropriate definition, I instead apply the plain and ordinary meaning, which is, as always, the default in claim construction. *See Phillips*, 415 F.3d at 1316.

4. “service platform system” (’340 Patent, Claim 11)

- a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “a platform to provide services with respect to user communications”
- b. *Defendants’ proposed construction*: “a system containing a signaling processor, a service platform, and an ATM interworking multiplexer”
- c. *Court’s construction*: Plain and ordinary meaning.

The ’340 and ’224 patents are both in the Enhanced Services group, and therefore share a specification. As discussed above, the ’224 patent limits the “interworking unit” to ATM. That construction, however, does not mean every component of the ’340 and ’224 patents is limited to ATM. Although the language of the Enhanced Services specification is ATM-centric, it does not clearly limit the entire “service platform system” described in the ’340 claims to ATM technology.

The specification discloses, “The service platform system contains a signaling processor, a service platform, and an interworking unit.” (’340 patent, 6:45-47). But this language, which is in a section labeled “preferred embodiment,” does not limit the invention itself. I therefore decline to adopt Defendants’ proposed construction.

5. “communication system” (’463 Patent, Claims 1, 4, 5, 9)

- a. *Plaintiff's proposed construction:* Plain and ordinary. No construction necessary. Alternative: “a plurality of network elements and connections forming a network to transfer information”
- b. *Defendants' proposed construction:* “a system comprising an ATM cross-connect, ATM interworking multiplexers, and a signaling processor”
- c. *Court's construction:* “a system comprising an ATM cross-connect, ATM interworking multiplexers, and a signaling processor”

The term “communication system,” which appears several times in the '463 claims, appears only once in the specification. The abstract discloses that the “communication system” is “comprised of a signaling processor and an interworking unit.” The rest of the specification of the '463 patent, which is in the Number Portability group, refers instead to a “telecommunications tandem system” or “tandem system.” Plaintiff does not appear to dispute that the tandem system is the communication system. (*See* D.I. 162 at 33). The specification discloses the “tandem system comprises a first ATM interworking multiplexer, an ATM cross-connect, a second ATM interworking multiplexer, and a signaling processor.” ('463 patent at 2:14-16). Accordingly, I adopt Defendants' construction, which reflects this ATM-focused language.

6. “residential communications hub” ('131 Patent, Claim 11)
 - a. *Plaintiff's proposed construction:* Plain and ordinary. No construction necessary.
 - b. *Defendants' proposed construction:* “communications hub located at an end user residence that converts between a plurality of communications formats and an ATM format”
 - c. *Court's construction:* “end user communications hub”

Defendants seek to limit this term to ATM. The specification language they cite in support of this position, however, is in a section clearly labeled as describing preferred embodiments. (D.I. 162 at 37, citing '131 patent at 2:43-45, *et seq.*). The statements describing

the invention as a whole refer to communications in a packet format, not ATM specifically. (*See e.g.*, '131 patent at 2:4-2:6, 2:11-2:16). Defendants' proposed limitation is therefore not appropriate.

The '131 specification makes clear that "residential" refers to the location of any end user, not literally a home or dwelling. ('131 Patent, 3:5-7) ("The residences are depicted as homes, but they could also be businesses or other sites where users desire communications services."). The parties appear to agree "communications hub" requires no construction. Thus, I construe this term to mean "end user communications hub."

7. "asynchronous communication" ('084 Patent, Claim 1; '429 Patent, Claim 1; '064 Patent, Claim 1)
 - a. *Plaintiff's proposed construction*: Plain and ordinary. No construction necessary. Alternative: "communications that are not synchronous"
 - b. *Defendants' proposed construction*: ATM communication
 - c. *Court's construction*: Plain and ordinary meaning

ATM communications are asynchronous, but not all asynchronous communications are ATM. Internet Protocol (IP) and other packet-based communications are also asynchronous. *See Vonage Holdings Corp.*, 500 F. Supp. 2d at 1318-9 ("[A]synchronous' is a term of art in the communications field that refers to communications where the transmitting and receiving devices do not communicate based on a synchronized clock . . . [P]ackets are generally communicated without a timing relationship (or synchronized clock) between the sender and receiver. Thus, packet technologies are asynchronous.") The specification does not support narrowing this term to only one type of packet technology. Accordingly, I decline to adopt Defendants' proposed construction, and I instruct Defendants not to further argue that this term is limited to ATM technology.

8. “converting the communications between a time division multiplex format and another format” (’340 Patent, Claim 14)
 - a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “converting the communications from time division multiplex format to a format that is not time division multiplex”
 - b. *Defendants’ proposed construction*: “converting voice between a time division multiplexed format and ATM”
 - c. *Court’s construction*: Plain and ordinary meaning

9. “converting the user communications from a first communication format into a second communication format”/“converting the user communication from the first communication format to a second communication format”/“receiving user communications in a first format from a first connection, converting the user communications to a second format” (’728 and ’224 Patents, Claim 1; ’918 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “converting the user communications from a first communication format into a distinct second communication format / converting the user communication from the first communication format to a distinct second communication format / receiving user communications in a first format from a first connection, converting the user communications to a distinct second format”
 - b. *Defendants’ proposed construction*: “first [communication] format / second [communication] format; two formats, one of which is ATM”
 - c. *Court’s construction*: Plain and ordinary meaning

These disputed terms relate to communications formats. Defendants argue that, because the “interworking unit” is an “ATM interworking multiplexer,” the device must convert communications to an ATM format. (D.I. 162 at 45). That, however, is a factual question, not a legal one. Nothing in the ’340 patent logically requires that the ATM interworking multiplexer only convert to ATM. *See Time Warner Cable, Inc.*, 760 F. App’x at 987 (“[A] reasonable jury could reject Time Warner’s argument that it would be ‘nonsensical’ to use IP with an ‘ATM interworking multiplexer.’”) Whether it is technically possible may be another matter, but it is not one to resolve during claim construction.

10. “a first connection and a second connection” (’918 Patent, claim 11)
 - a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “distinct transmission media to carry user communications between elements”
 - b. *Defendants’ proposed construction*: “a first and second connection at least one of which is an ATM connection”
 - c. *Court’s construction*: Plain and ordinary meaning

Defendants argue that, because the invention includes an “ATM interworking multiplexer,” it follows that at least one of the connections must be ATM. (D.I. 162 at 48). As discussed above regarding the communications format terms, I am unpersuaded by this reasoning. The patent does not prohibit an ATM interworking multiplexer from transmitting communications over exclusively non-ATM connections.

11. “identifier(s)” (’084 Patent, Claim 1; ’429 Patent, Claims 1-7; ’340 Patent, Claim 11; ’463 Patent, Claims 1, 4; ’534 Patent, Claim 1)
 - a. *Plaintiff’s proposed construction*: “data for routing user information in a packet network”
 - b. *Defendants’ proposed construction*: “data identifying a selected ATM connection”
 - c. *Court’s construction*: “data for routing user information in a packet network”

Claim 1 of the ’084 patent, which is representative, recites that “asynchronous communications” are transferred “from the interworking unit for subsequent routing based on the identifiers.” As discussed, asynchronous communications are not necessarily ATM communications. I therefore reject Defendants’ construction, which would require the invention to identify an “ATM connection.”

It is clear from the claim language that the “identifiers” determine how information is routed in packet networks. The system receives “the user communications from the synchronous

connections” and converts them “into asynchronous communications including the corresponding identifiers.” (’084 patent, claim 1.) Given that the identifiers correspond to asynchronous communications, and that packet networks are asynchronous, I adopt Plaintiff’s proposed construction.

12. “packet network” (’131 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction:* Plain and Ordinary. No construction necessary. Alternative: “a plurality of network elements and connections forming a network to transfer information using packets”
 - b. *Defendants’ proposed construction:* “ATM network”
 - c. *Court’s construction:* Plain and ordinary meaning
13. “packet format” (’534 Patent, Claim 1; ’131 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction:* Plain and Ordinary. No construction necessary.
 - b. *Defendants’ proposed construction:* “ATM format”
 - c. *Court’s construction:* Plain and ordinary meaning

I again decline to apply Defendants’ proposed ATM limitation to this term. Not all packet networks are ATM networks, and the ’131 patent does not imply the invention could only operate on ATM networks. Given that these terms are well-known in the art, I decide no construction is necessary.

14. “voice mux” (’131 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction:* Plain and Ordinary. No construction necessary. Alternative: “device that translates communications between asynchronous and synchronous formats”
 - b. *Defendants’ proposed construction:* “ATM voice multiplexer”
 - c. *Court’s construction:* Plain and ordinary meaning.

As previously discussed in the context of the “residential communications hub,” the ’131 patent specification discusses ATM technology as a preferred embodiment, not as an essential

feature of the claimed invention. I therefore decline to limit the “voice mux” to ATM and instruct Defendants not to further argue that the element is so limited.

15. “communication system” (’728 Patent, Claim 1; ’224 Patent, Claim 1; ’340 Patent, Claim 11; ’918 Patent, Claim 11; ’534 Patent, Claim 1; ’131 Patent, Claim 11)
 - a. *Plaintiff’s proposed construction:* Plain and Ordinary. No construction necessary. Alternative: “a plurality of network elements and connections forming a network to transfer information”
 - b. *Defendants’ proposed construction:* “ATM network”
 - c. *Court’s construction:* Plain and ordinary meaning.

Defendants seek to limit “communication system” to “ATM network” across an array of patents with various specifications. I have already construed terms in some of these patents, such as “interworking unit” in the ’224 and ’918 patents, as limited to ATM. I decline, however, to impose the ATM limitation on the entire “communication system” in all the patents at issue here. While the patents discuss ATM, those references do not clearly apply to the “communication system” as a whole.

For the ’463 patent, as discussed above, I adopted a narrower construction of “communication system.” In that case, the “communication system” was a particular component of the invention, and the specification clearly defined that component as having specific features. By contrast, claims 1 of the ’728 and ’224 patents are methods for “operating a communication system,” suggesting that the communication system is a much broader description, not just a component. The specifications of those patents describe particular elements as limited to ATM, but that doesn’t mean the entire inventions must be similarly constrained.

As previously discussed in the context of the “bearer interface” and “residential communications hub” terms, the ’534 and ’131 patents contemplate formats beyond ATM. Defendants’ proposed limitation is therefore not appropriate for those patents either.

16. “processing . . . to select” (’3,561, ’052, ’932, ’454, and ’534 Patents, Claim 1; ’6,561 and ’131 Patents, Claim 11; ’064 Patent, Claims 1, 3; ’429 Patent, Claims 1, 7; ’463 Patent, Claims 1, 4)
- a. *Plaintiff’s proposed construction*: “process[ing] . . . to participate in the selecting”
 - b. *Defendants’ proposed construction*: ’052, ’3,561, ’6,561, ’932, ’429, ’064, ’534 Patents: “the processing signal [*sic*] uses the [signaling / message / information / called number] to select”
’454 Patent: “the communications control processor uses the first signaling to select”
’463 Patent: “the signaling processor uses the route number to select”
’131 Patent: “the call manager uses the signaling to select”
 - c. *Court’s construction*: Plain and ordinary meaning.

Patents in various groups claim a method for “processing” information “to select” some element, which ultimately enables a call to reach its intended recipient. For example, claim 1 of the ’052 patent, which is in the Call Control group, claims a method for, “in the processing system, processing the signaling to select a network code that identifies a network element.”

Defendants argue that the device that does the “processing” (such as the “processing system”) must also “select” the other network elements. (D.I. 162 at 62). Plaintiff counters that this device need only “participate in the selecting.” I am unconvinced that the intrinsic evidence supports Defendants’ proposed limitation. Defendants do not cite any unambiguous language requiring that the “processing system” (or analogous element in other patents) make the selection. *See Comcast*, 2014 WL 5089402, at *15 (“[T]he claims themselves do not require that the processing element also make the selection, but instead require only ‘processing . . . to select,’ and in the absence of sufficient evidence from the specifications, the Court will honor that distinction.”).

I find Plaintiff's proposed construction unhelpful though. It adds the words "to participate in" seemingly in response to Defendants' construction, not because they are necessary to understand the claims. I therefore decline to construe this term.

17. "processing . . . to transfer" ('918 Patent, Claim 11; '463 Patent, Claim 1)
- a. *Plaintiff's proposed construction*: "process[ing] . . . to participate in the transferring"
 - b. *Defendants' proposed construction*: '918 Patent: "the call processor uses the signaling information to transfer"
'463 Patent: "the signaling processor uses the called number to transfer"
 - c. *Court's construction*: Plain and ordinary meaning.

This term appears in the Addressing Servers and Number Portability patents, but the issue is essentially the same as with the previous term, "processing . . . to select." Defendants argue the processor itself must use information to transfer a message. I find this limitation is unsupported by the intrinsic evidence, but I also reject Plaintiff's proposal, which would add unnecessary words.

18. "signaling" / "signaling message" / "first message" ('3,561 Patent, Claim 1, 24; '6,561 Patent, Claim 11; '052 Patent, Claim 1; '454 Patent, Claim 1, '932 Patent, Claim 1; '224 Patent, Claim 1)
- a. *Plaintiff's proposed construction*: "a message used to set up or tear down a call"
 - b. *Defendants' proposed construction*: '3,561, '6,561, '052, '454, '932 Patents: "the transfer of information among points and network elements used to establish communications paths"
'224 Patent: No construction necessary
 - c. *Court's construction*: the transfer of information among points and network elements

Both parties cite specification statements that they argue define these signaling terms. Plaintiff's definition, however, comes from the Broadband patents, and is therefore little help in construing these terms, which are in the Call Control and Enhanced Services groups. (D.I. 162 at

67, citing '429 patent at 1:25-6). Defendants' proposal is from the Call Control specification, and at first blush, might seem compelling. But they have subtly altered the wording. The Call Control specification states, "Signaling is the transfer of information among points and network elements and is used to establish communications paths." ('3,561 patent at 5:23-25). The use of "and" suggests that only the first part of the sentence is the definition of "signaling," while the second part describes an application. Plaintiff's primary complaint with Defendants' definition is that it is "path-centric," which, according to Plaintiff, is inconsistent with the teachings of the patents. (D.I. 162 at 67). Adopting only the first portion of Defendants' proposal, which is the part supported by the intrinsic evidence, avoids this complication.

19. "control message" / "second message" ('3,561, Claim 1, 24; '6,561, Claim 11; '932 Patent, Claim 1)

- a. *Plaintiff's proposed construction*: Plain and ordinary. No construction necessary. Alternative: "a message to setup or route a call"
- b. *Defendants' proposed construction*: "a message used for communication control," where "communication control" means "setting up a communications path between points"
- c. *Court's construction*: Plain and ordinary meaning.

"Control message" and "second message" do not appear in the Call Control specification. Defendants argue the terms should be limited to "communication control," which the specification teaches "is the process of setting up a communications path." ('3,561 patent at 1:37-38). "Communication control" though is the general subject of this patent group. It is not necessary to import that subject into every claim term. Defendants have not identified language specifically suggesting "control message" and "second message" contain this limitation. I therefore adopt the plain and ordinary meaning.

20. "Packet Communication System" / "Packet System" / "Broadband Network" /

“Asynchronous Communication System” (’3,561 Patent, Claims 1, 24; ’6,561 Patent, Claims 11, 20; ’052 Patent, Claims 1, 4)

- a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “a plurality of network elements and connections forming a network to transfer information using packets”
 - b. *Defendants’ proposed construction*: “system wherein packets are routed by switches”
 - c. *Court’s construction*: “system wherein packets are routed by network elements, wherein at least one network element is a switch”
21. “broadband network” (’454 Patent, Claim 1)
- a. *Plaintiff’s proposed construction*: Plain and ordinary. No construction necessary. Alternative: “a plurality of network elements and connections forming a network to transfer broadband information”
 - b. *Defendants’ proposed construction*: “system wherein packets are routed by switches”
 - c. *Court’s construction*: “system wherein packets are routed by network elements, wherein at least one network element is a switch”

The parties appear to agree that “packet,” “broadband,” and “asynchronous” are well-known terms in the art. (D.I. 162 at 76-77). The dispute is whether the packets must be “routed by switches.” The asserted claims speak of “network element(s),” not switches. (*See e.g.*, ’052 patent, claim 1). These patents all share the Call Control specification, which discloses, “The present invention also includes a telecommunications network comprised of a plurality of network elements wherein at least one network element is a switch” (’052 patent at 3:65-4:1). This limitation plainly applies to the “present invention,” not just possible embodiments. Defendants’ proposed construction goes too far though by broadly declaring that the packets “are routed by switches.” The specification only states that “at least one network element is a switch.” I adopt a construction consistent with that requirement.

22. “switch(es)” / “telecommunication switches” (’932 Patent, Claim 1; ’3,561 Patent, Claims 23, 38; ’064 Patent, Claim 7; ’429 Patent, Claim 5; ’728 Patent, Claim 2)
- a. *Plaintiff’s proposed construction*: “device(s) that set up calls and relay voice and/or data information from one connection to another”
 - b. *Defendants’ proposed construction*: “device(s) that set up calls with signaling and relaying voice and/or data information from one connection to another”
 - c. *Court’s construction*: “device(s) that set up calls and relay voice and/or data information from one connection to another”

The parties largely agree on the definition of a “switch,” but Defendants argue that switches must set up calls “with signaling.” To support this argument, Defendants point to statements Sprint’s attorneys made in prior litigation. (D.I. 162 at 81). But courts rely primarily on intrinsic evidence to construe the meaning of a patent. *Phillips*, 415 F.3d at 1318 (“We have viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms.”). Attorney statements made in district court litigation years after the inventor filed the patent are not intrinsic evidence and are not useful.

Defendants also note the Broadband specification states that “switches require both signaling capability and call processing capability.” (D.I. 162 at 82, quoting ’042 patent at 1:43-44). It is not clear though that this language, which appears in the specification’s background section, was intended to limit the invention itself. Additionally, under Defendants’ proposed construction, it might not be enough for a switch to have the “capability” of signaling. Defendants’ proposal suggests the device might cease to be a switch if it sets up a call in any way other than “with signaling.” Accordingly, I adopt Plaintiff’s proposed construction.

23. “route(s)” / “routing” (’3,561 Patent, Claims 1, 24; ’6,561 Patent, Claim 11; ’084 Patent, Claims 1, 7; ’340 Patent, Claim 11; ’463 Patent, Claims 1, 4; ’534 Patent, Claim 1)
- a. *Plaintiff’s proposed construction*: “direct(s) / directing through a [packet] communication system by a selected route or in a specified direction”

- b. *Defendants' proposed construction*: “directs(s) / directing through a [packet] communication system by a selected route”
- c. *Court's construction*: “direct(s) / directing through a [packet] communication system by a selected route or in a specified direction”

Defendants argue that a system “routes” information only if it directs the information “by a selected route,” and not if it just directs the information “in a specified direction.” Other courts have rejected this construction. *See Big River*, 2009 WL 1992537, at *19; *Comcast*, 2014 WL 5089402, at *9. Defendants argue that a “specified direction” implies a cardinal direction such as north or south, but they cite no intrinsic or extrinsic evidence for this proposition. (D.I. 162 at 85). If the system chooses an endpoint for a packet, and then other parts of the network choose the intermediate steps required to deliver the packet to that endpoint, it seems a person of ordinary skill in the art would understand that the system has “routed” the packet. I therefore adopt Plaintiff’s proposed construction.

V. WHETHER MEANS-PLUS-FUNCTION APPLIES TO CERTAIN TERMS

The Call Control patents claim a “processing system” or a “communication control processor,” and other patents include similar terms: “signaling processor,” “call processor,” “control system,” and “call manager.” Defendants argue these terms are means-plus-function claims, subject to 35 U.S.C. § 112, ¶ 6. (D.I. 162 at 93). Further, Defendants argue that the patents fail to disclose an algorithm for performing the claimed functions, and these terms are therefore indefinite. (*Id.*)

Section 112, ¶ 6 provides that a claim “may be expressed as a means or step for performing a specified function” but that such a claim is limited to only “the corresponding structure, material, or acts described in the specification.” If a claim does not use the word “means,” there is a rebuttable presumption that § 112, ¶ 6 does not apply. *Williamson v. Citrix*

Online, LLC, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). “This presumption can collapse when a limitation lacking the term ‘means’ nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function.” *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003); *see also Williamson*, 792 F.3d at 1348 (Form is not “blindly elevated” over substance. Instead, “the essential inquiry is . . . whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.”). The defendant bears the burden of overcoming the presumption by a preponderance of the evidence. *Adv. Ground Info. Sys. v. Life360, Inc.*, 830 F.3d 1341, 1347 (Fed. Cir. 2016).

The patents here do not use the word “means,” and Defendants have failed to meet their burden to show § 112, ¶ 6 should nonetheless apply. The parties agree these patents are method claims. (D.I. 162 at 87, 92). The Federal Circuit has held that § 112, ¶ 6 does not govern method claims unless the claims contain the term “steps for” or fail to recite an act. *Masco Corp. v. United States*, 303 F.3d 1316, 1327 (Fed. Cir. 2002). Defendants assert this line of Federal Circuit authority does not apply because it only addresses “action” limitations, such as “transmitting a force,” and not structural limitations. (D.I. 162 at 93). Even if that is correct though, Defendants would still have to show that the structure is defined merely by its function. Considering the very patents at issue here, the Federal Circuit observed, “the point of novelty resides with the steps of these methods, not with the machine that performs them.” *Cox Commc’ns, Inc. v. Sprint Commc’n Co. LP*, 838 F.3d 1224, 1229 (Fed. Cir. 2016).¹ It is unsurprising that the novelty of the invention is described in greater detail than the machine that

¹ The Federal Circuit expressly did not rule whether the claims invoked § 112, ¶ 6 because Cox had waived the issue. *Cox Commc’ns, Inc.*, 838 F.3d at 1232 n. 4.

performs those novel steps. See *Virginia Innovation Scis., Inc. v. Samsung Elecs. Co.*, 976 F. Supp. 2d 794, 831 (E.D. Va. 2013), *vacated on other grounds*, 614 F. App'x 503 (Fed. Cir. 2015). (“The particular processor used to evaluate these various pieces of information is not central to the invention, and the fact that it was not described in detail is neither surprising nor fatal to the ’717 patent claims’ validity.”) I therefore conclude these terms are not covered by Section 112, ¶ 6, and it is unnecessary to analyze whether the terms would be indefinite under that provision.

VI. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.