IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SPRINT COMMUNICATIONS COMPANY L.P., Plaintiff, v. COMCAST IP HOLDINGS, I, LLC and COMCAST IP PHONE, LLC, Defendants.	Civil Action No. 12-1013-RGA

MEMORANDUM OPINION

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ANDREWS, U.S. DISTRICT JUDGE:

Pending before this Court is the issue of claim construction of various disputed terms found in U.S. Patent Nos. 5,793,853 ("'853 patent"), 5,742,605 ("'605 patent"), 6,108,339 ("'339 patent"), 6,452,931 ("'931 patent"), and 6,870,832 ("'832 patent").[1]

I. BACKGROUND

On February 21, 2012, Comcast IP Holdings I, LLC filed a patent infringement action against Sprint Communications Company L.P., Sprint Spectrum L.P., and Nextel Operations, Inc. (1:12-cv-205-RGA D.I. 1). Sprint answered and asserted counterclaims of patent infringement against Comcast Cable Communications, LLC, and Comcast IP Phone, LLC on May 14, 2012. (1:12-cv-205-RGA D.I. 11). Sprint's counterclaims alleged infringement of the '853, '605, '339, '931, '832, and '028 patents,[2] which collectively are the patents in suit. (*Id.*). The Court subsequently approved a Joint Stipulation and Proposed Order that severed Sprint's infringement counterclaims into a separate action. (D.I. 1).[3] The Court has considered the Parties' Joint Claim Construction Brief (D.I. 56), appendix (D.I. 57), and oral argument on October 10, 2013.

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

[1] The '605, '339, and '931 patents have the same specification and several disputed claim terms appear in the asserted claims for all three patents. Unless otherwise noted, the claim terms are construed consistently in each of the patents.

[2] The Joint Claim Construction Chart (D.I. 46) notes the '028 patent has one disputed term, and the Joint Claim Construction Brief (D.I. 56) lists the '028 patent as a patent in suit. The briefing, however, does not provide the parties arguments for construing any term in the '028 patent. The Court declines to construe the term absent such briefing from the parties.

[3] This, and all later citations to docket entries, refers to the 12-1013 docket.

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). When construing patent claims, a matter of law, 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 quotations and citations omitted).

Furthermore, "the 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." *Phillips*, 415 F.3d at 1312-13 (internal citations and 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 (internal citations omitted).

A court may consider extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises," in order to assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art and how the invention works. *Id.* at 1317-19 (internal quotation

marks and citations omitted). However, extrinsic evidence is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

Finally, "[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) (internal quotation marks and citation omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. U.S. Patent No. 5,793,853

1. "primary network element"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "The first network element to receive the service request."

c. *Court's construction*: "The first network element to receive the service request."

2. "operator center"

a. *Plaintiff's proposed construction*: No construction necessary. Alternatively, the term means "a network element providing telecommunications services."

b. *Defendant's proposed construction*: "A network element providing telecommunications services using one or more human operators."

c. *Court's construction*: "A network element providing telecommunications services."

3. "means for assigning an identification key to the primary and secondary records"

a. *Plaintiff's proposed construction*: A means-plus-function limitation. Proposed function: "assigning an identification key to the primary and secondary records"; proposed structure: "a network element (as disclosed at col. 5:48 to col. 6:9) and equivalents thereof."

b. *Defendant's proposed construction*: A means-plus-function limitation. Proposed function: "assigning an identification key to the primary and secondary records"; proposed structure: "a network element comprising a counter device as disclosed at 5:61-6:9."

c. *Court's construction*: A means-plus-function limitation. The function is "assigning an identification key to the primary and secondary records," and the structure is "a network element comprising a counter device as disclosed at 5:61-6:9 and equivalents thereof."

Both parties agree on the function, leaving the structure as the only disputed aspect of this term. Sprint proposes a broad construction that only limits the structure to a network element, whereas Comcast seeks to further narrow the structure to a "network element comprising a counter device."

Section 112(f) permits a patentee to express a claim "as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112(f) (2012). The quid pro quo for the convenience of utilizing this section is the "duty to link or associate structure to function." *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). Sprint's proposed construction is insufficient because it does not clearly identify an associated structural limitation. The portion of the specification that Sprint relies on explains where the means for assigning the identification key are located, not the structure that corresponds to the assigning process. *See*

'853 patent, 5:48-60. Comcast's proposed inclusion of a counter device, on the other hand, does provide a structural limitation. The specification acknowledges that "it is presently preferred to use a nine-digit identification key wherein the first three digits identify a specific network element and the last six digits are a key identifier generated by a counter device which is incremented for each service request requiring services from a plurality of network elements." *Id.* at 5:65-6:3. Sprint objects to this proposal because a "network element actually assigns the identification key," whereas the counter device generates a key identifier. *Id.* at 5:62; 6:1.

The context in which the discussion of the counter device appears suggests that the generation of a key identifier is subsumed by the process of assigning the identification key. As described above, the identification key is a nine digit number—the first three digits correspond to a specific network element and the last six digits represent the key identifier. The key identifier is generated by the counter device, and there is no disclosure in the specification that would allow for the creation of a nine-digit identification key without the six-digit key identifier. Therefore, the counter device is necessary to the assigning process, and its inclusion in the definition is an appropriate structural limitation.

4. "means for comparing the identification keys assigned to the records"

a. *Plaintiff's proposed construction*: A means-plus-function limitation. Proposed function: "comparing the identification keys assigned to the records"; proposed structure: "a merge processor (as disclosed at item 42 in Figures 1 and 2) and equivalents thereof."

b. *Defendant's proposed construction*: A means-plus-function limitation. Proposed function: "comparing the identification keys assigned to primary and secondary records"; proposed structure: "none identified. Indefinite."

c. *Court's construction*: A means-plus-function limitation. The function is "comparing the identification keys assigned to primary and secondary records" and the structure is "a merge processor (as disclosed at item 42 in Figures 1 and 2) and equivalents thereof."

5. "means for merging associated records"

a. *Plaintiff's proposed construction*: A means-plus-function limitation. Proposed function: "merging associated records"; proposed structure: "a merge processor (as disclosed at item 42 in Figures 1 and 2) and equivalents thereof."

b. *Defendant's proposed construction*: A means-plus-function limitation. Proposed function: "merging records that are associated by reference to information included in their identification keys"; proposed structure: "none identified. Indefinite."

c. *Court's construction*: A means-plus-function limitation. The function is "merging records that are associated by reference to information included in their identification keys" and the structure is "a merge processor (as disclosed at item 42 in Figures 1 and 2) and equivalents thereof."

B. U.S. Patent Nos. 5,742,605, 6,108,339, and 6,452,931

1. "[SONET] ring"

a. *Plaintiff's proposed construction*: "A synchronous optical networking (SONET) architecture where spans form a loop by interconnecting ring terminals over physical routes."

b. *Defendant's proposed construction*: "A self-healing SONET architecture connecting ring terminals in a closed loop. Within the loop, each ring terminal is directly connected only to the adjacent ring terminal(s) in each direction around the loop. The

architecture provides survivability in the event of an interruption by routing traffic around the operational side of the ring to complete the connection."

c. *Court's construction*: "A self-healing SONET architecture connecting ring terminals in a loop in which each ring terminal in the loop is directly connected only to the adjacent ring terminal(s) in each direction around the loop."

Comcast is correct that the SONET rings should be limited to self-healing rings because the patentee repeatedly states that this constitutes "the present invention." If 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). The patentee's reference to "the present invention," however, "must be read in context of the entire specification and the prosecution history" before the term's meaning can be properly limited. *Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1094 (Fed. Cir. 2003). In balancing these two concerns, the Federal Circuit has held that numerous statements in the specification addressing "the present invention" may be sufficient to so limit the term's scope. *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) ("On at least four occasions, the written description refers to the fuel filter as 'this invention' or 'the present invention' . . . . The public is entitled to take the patentee at his word and the word was that the invention is a fuel filter.").

The patentee refers to self-healing rings as comprising "the present invention" no fewer than six times in the specification. *See* '605 patent, Abstract ("The present invention is a SONET system . . . . The system uses self-healing rings."); *id.* at 3:65-66 ("The present invention is a SONET system for a relatively large network that uses self-healing rings."); *id.* at 8:6-9 ("[S]elf-healing ring technology can be employed in the present invention to provide

significantly improved survivability features."); *id.* at 8:16-18 ("The present invention employs self-healing capability in particular ring terminals on each ring."); *id.* at 8:20-23 ("[T]he present invention provides a SONET system that employs self-healing rings which can efficiently span large geographic distances."); *id.* at 8:34-36 ("By featuring stacked self-healing SONET rings with DCS connections, the present invention eliminates these current problems."). These frequent references strongly point to narrowing the term's definition to reflect its description in the specification. There is nothing in the specification to suggest that self-healing rings were only a preferred embodiment or somehow not representative of the invention as a whole. As in *Honeywell*, "[t]he public is entitled to take the patentee at his word," and here the word is that the SONET rings are self-healing.

Comcast also argues that the Court should restrict the definition of SONET rings to "closed" loops, but this would add complexity without adding clarification. The motivation seems to be ensuring that the claims only cover complete rings, but this is already accomplished by using the word "loop" in the definition. Including a limitation that the loop be closed provides no clarity, and is instead likely to result in confusion. For example, the word "closed" typically connotes a barrier to entry or access, which would suggest that each ring is "closed" off from the others such that traffic cannot travel between rings. This is not the case, and the Court rejects this proposal.

Finally, the Court is persuaded that the definition needs to limit the number of connections made by each ring terminal in the loop. This is necessary to distinguish rings, the subject of the invention, from the point-to-point and mesh architectures that make up the prior art. *Compare* '605 patent, Fig. 2 (depicting prior art), *with* '605 patent, Fig. 3 (showing current invention). Sprint seems to agree with this notion in principle, but argued that "loop" already

makes that distinction. In addition, Sprint believes that "adjacent" could be incorrectly read to require a connection only between the two ring terminals that are closest in physical proximity. (D.I. 56 at 38). The definition's requirement that adjacent ring terminals are connected "in each direction around the loop" alleviates this concern. This does not prevent connections between ring terminals on different rings, as Sprint posited, but rather requires that each ring terminal is only connected to one terminal on either side of it along the loop—thereby forming a loop instead of a mesh architecture. The construction also addresses Sprint's argument regarding a loop containing only two ring terminals. (*Id.*). In that situation, each ring terminal would still only be connected to the ring terminal "in each direction around the loop."

2. "span"

a. *Plaintiff's proposed construction*: "A logical connection between two ring terminals."

b. *Defendant's proposed construction*: "The logical connection between adjacent ring terminals."

c. *Court's construction*: "The logical connection between ring terminals."

Comcast seeks to construe "span" in a way that would require there to be only one span between ring terminals, and Comcast finds support for this construction in the specification. The Federal Circuit has cautioned "that 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 Comm'cns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). The Court believes the former is at issue here because the specification only discloses a single span connecting two ring terminals.

The patentee labels Figure 3, which shows only a single span between two ring terminals, as "a version of the present invention." '605 patent, 4:51. The specification explains that spans follow physical routes and lists several "route-span" combinations for Figure 3. For example, "route 30 contains span 130" which connects ring terminal 100 to ring terminal 101, and route 40 contains spans 145 and 149 which connect ring terminals 112 to 115 and 116 to 119, respectively. *See id.* at 5:19-25; Figure 3. But there is no discussion of two ring terminals being connected by more than one span, nor any suggestion that this was even contemplated by the patentee. This is consistent with the preferred embodiment that connects ring terminals with a single span. *Id.* at 6:3-4. ("In the preferred embodiment, each span which connects two ring terminals occupies a four fiber unidirectional line."). Figure 4, which depicts stacked rings, also shows a single span connecting two ring terminals. Nothing in the claim language contradicts this understanding of the specification. Comcast is thus correct in its proposal that a span is "the" connection between ring terminals as opposed to simply "a" connection.

3. "ring terminal[s]"

a. *Plaintiff's proposed construction*: "A network element with switching or grooming capability that is located where SONET traffic converges."

b. *Defendant's proposed construction*: "A network element that includes a SONET add/drop mux (ADM) and is capable of adding or dropping traffic to or from a SONET ring and receiving, switching and transmitting SONET traffic on the connected SONET spans of the ring."

c. *Court's construction*: "A network element that includes a SONET add/drop mux (ADM) and is capable of receiving, switching, grooming, and transmitting SONET traffic on the connected SONET spans."

The specification passages cited by Sprint to support its construction only explain when a ring terminal might be needed, not what a ring terminal is. *See* '605 patent, 1:59-65 ("[R]ing terminals are required at points where switching or grooming capability is located."); *id.* at 5:32-35 ("As a practical matter, each POP, switching, and/or grooming site may require a ring terminal."). By contrast, the specification seems to clearly define the function of a ring terminal. *Id.* at 4:53-62 ("Ring terminals 100-119 are comprised of SONET add/drop muxes (ADMs) which are well known in the art. . . . Each ring terminal is capable of receiving, switching, and transmitting SONET traffic on the connected SONET spans. . . . The ring terminals also provide grooming for the SONET traffic."). Although this discussion is in the context of "a version of the present invention," there is no suggestion that this functionality is limited to a particular embodiment. In fact, the last sentence of the same paragraph provides, "These ring terminal capabilities and many others are well known in the art." *Id.* at 4:62-64. The functions described above help shed light on what is meant by the patentee's use of "ring terminal," and the Court is not persuaded, as Sprint argues, that their inclusion improperly limits the term's scope.

4. "are stacked within a single fiber route"

a. *Plaintiff's proposed construction*: "Occupying at least a portion of the same fiber route."

b. *Defendant's proposed construction*: "Occupy the same physical route, which consists of a single fiber."

c. *Court's construction*: "Occupying at least a portion of the same fiber route."

There is no support for limiting a "single fiber route" to a single fiber, as Comcast proposes. In the preferred embodiment of the '605 patent, each span that connects two ring terminals "occupies a four fiber unidirectional line." '605 patent, 6:3-5. Comcast's proposed

construction would exclude the preferred four fiber unidirectional line because it is not a single fiber. Contrary to Comcast's argument, the Court's construction does not read the word "single" out of the claim language because both "single" and "fiber" modify the noun "route"—it is a single route that is also a fiber route.

Similarly, there is no support for requiring spans to be stacked across the entire route. Figure 4 provides an example of a series of stacked rings. *Id.* at Fig. 4. Although these rings are stacked, the spans of the three rings do not all occupy the same fiber routes entirely; rather, only portions of the fiber routes are shared by the stacked rings. *Id.* at 5:65-67 ("The ring formed by ring terminals 230-237 shares only some of the physical route of the other two rings and is only partially stacked."). This is consistent with the specification's teaching that, "Stacked rings do not need to be mirror images of one another." *Id.* at 5:64-65.

5. "are stacked within a single physical route"

a. *Plaintiff's proposed construction*: "Occupying at least a portion of the same physical route."

b. *Defendant's proposed construction*: Indefinite.

c. *Court's construction*: Occupying at least a portion of the same physical route."

The patentee defined what he meant by "physical routes" in the specification. Physical routes run between nodes, but they are not the actual connections. '605 patent, 4:17-20. Instead, physical routes "represent the physical space that the actual connections may occupy," and these physical routes are "typically optical fibers." *Id.* at 4:17-21. The Court believes that, given the teachings and limitations in the specification, a PHOSITA would be able to determine the boundaries of a "physical route" that is used for creating SONET ring architectures. The term is not indefinite.

6. "rings [that] individually encompass geographic areas that are large[r] than a LATA" / "rings [that] individually encompass geographic areas that are larger than a metropolitan area"

a. *Plaintiff's proposed construction*: No construction needed for either term. Alternatively, the terms mean "rings that individually encompass a geographic area that contains an entire LATA" / "rings that individually encompass a geographic area that contains an entire metropolitan area," respectively.

b. *Defendant's proposed construction*: Indefinite.

c. *Court's construction*: Indefinite.

"Only claims 'not amenable to construction' or 'insolubly ambiguous' are indefinite." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005); *see also Geneva Pharm., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003) ("A claim is indefinite if its legal scope is not clear enough that a person of ordinary skill in the art could determine whether a particular [embodiment] infringes or not."). Claim 2 is representative and recites:

> A SONET system which comprises:
> (a) a plurality of SONET ring terminals;
> (b) a plurality of SONET spans connecting the ring terminals to form an architecture comprising a plurality of rings wherein each ring is comprised of unique ring terminals and spans and is not comprised of any ring terminals and spans of another ring, wherein a plurality of the rings individually encompass geographic areas that are large[r] than a LATA, and wherein particular spans of different rings are stacked within a single physical route; and
> (c) a plurality of connections between the rings that are operational to provide interconnectivity among the rings.

'605 patent, claim 2. Claim 14 has the same framework, with the exception that "metropolitan area" is substituted for "LATA." *See id.* at claim 14. Sprint argues that a LATA—local access

transport area—has been known in the telecommunications industry since the 1980s and is understood to be a:

> [C]ontiguous geographic area (A) established before February 8, 1996, by a Bell operating company such that no exchange area includes points within more than 1 metropolitan statistical area, consolidated metropolitan statistical area, or State, except as expressly permitted under the AT&T Consent Decree; or (B) established or modified by a Bell operating company after February 8, 1996, and approved by the Commission.

47 U.S.C. § 153(31) (2012). "Metropolitan areas," Sprint argues, are also well known and defined by the Office of Management and Budget according to official standards. *See* Revised Standards for Defining Metropolitan Areas in the 1990's, 55 Fed. Reg. 12,154 (Mar. 30, 1990).

But just because the word LATA is well defined does not mean that a PHOSITA can discern the boundaries of any claim incorporating it.[4] LATAs can vary widely in size, with some being as small as Rhode Island and others encompassing virtually all of Maine. (D.I. 57-1 at 2). There is no requirement in the claim language that a ring be larger than any specific LATA or that any particular LATA be fully enclosed within a ring.[5] All the claim requires is that the rings "encompass geographic areas that are large[r] than *a* LATA," and the patentee is bound by that language. '605 patent, claim 2 (emphasis added); *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("[C]ourts may not redraft claims, whether to make them operable or to sustain their validity."). Under a literal reading of the claim, any ring that encompasses a geographic area larger than any LATA could potentially infringe the patent.

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[4] The following analysis applies with equal force to the term "metropolitan area," with the added complication that metropolitan areas are subject to change based on census data. *See, e.g.*, Revised Standards for Defining Metropolitan Areas in the 1990's, 55 Fed. Reg. at 12,158. Therefore, claim 14 which requires a SONET system "wherein a plurality of the rings individually encompass geographic areas that are larger than a metropolitan area . . ." is also indefinite.

[5] As Comcast puts it, "the claims do not require that the rings be larger than the particular LATA or metropolitan area that is near to or within a particular network." (D.I. 56 at 65 n.70). Sprint did not specifically reply to this assertion in the briefing.

It is apparent that the patentee attempted to claim, "rings that individually encompass the same geographic area as an entire LATA." The claim language, however, cannot reasonably be construed to carry this meaning. Nothing in the claim language ties the rings to any particular LATA. Instead, the claim simply requires that the rings individually encompass geographic areas that are larger than "a LATA." '605 patent, claim 2. This renders the claim language insolubly ambiguous.

7. "wherein a plurality of the rings individually encompass geographic areas that are operational to connect two non-adjacent LATAs on a single ring" / "wherein a plurality of the rings individually encompass geographic areas that are operational to connect two metropolitan areas on a single ring"

a. *Plaintiff's proposed construction*: No construction needed for either term. Alternatively, the terms mean "wherein a plurality of rings individually encompass geographic areas such that two non-adjacent LATAs are operationally connected on a single ring" and "wherein a plurality of the rings individually encompass geographic areas such that two metropolitan areas are operationally connected on a single ring," respectively.

b. *Defendant's proposed construction*: Indefinite.

c. *Court's construction*: Indefinite.

Claim 26 recites a SONET system "wherein a plurality of the rings individually encompass geographic areas that are operational to connect two non-adjacent LATAs on a single ring." '605 patent, claim 26; *see also id.* at claim 38 (requiring geographic areas that are operational to connect two metropolitan areas). The Court is unable to discern what "geographic areas that are operational to connect" means. The specification is not helpful in this regard. The phrase "operational to" only appears in the claim language, and when used it frequently refers to

"connections between the rings that are operational to provide interconnectivity among the rings." *See, e.g., id.* at claims 2, 14. It is easy to understand how connections can be operational to provide connectivity because that is the function of a connection. Geographic areas, however, do not have an analogous function, so how they can be operational to connect LATAs on a single ring is uncertain.

Sprint attempts to address the confusion by suggesting that a "jury can evaluate whether a given SONET ring 'connect[s] two non-adjacent LATAs' or 'connect[s] two metropolitan areas'" with the assistance of a map depicting the boundaries for various LATAs and metropolitan areas. (D.I. 56 at 69). But whether a SONET ring connects non-adjacent LATAs or metropolitan areas is immaterial to the instant inquiry. The claim language requires that geographic areas, not SONET rings, be operational to connect non-adjacent LATAs or metropolitan areas. Adopting Sprint's proposal would violate the prohibition on redrafting claim language to sustain its validity. *See Chef Am., Inc.*, 358 F.3d at 1374.

In the alternative, Sprint argues that the "claims clearly require geographic areas that have the technological infrastructure and resources to connect LATAs or metropolitan areas to a SONET ring, wherein the SONET ring encompasses the geographic areas and allows the aforementioned LATAs or metropolitan areas to communicate with one another." (D.I. 56 at 71). Sprint does not cite to any support in the intrinsic record for this argument aside from Figure 4.[6] As stated above, the specification does not mention the "operational to" language, nor does it discuss anything about the technological infrastructure and resources that Sprint now asserts allow the geographic areas to be operational to connect. Without any discussion or

[6] Figure 4 makes no reference to LATAs or metropolitan areas.

description of how geographic areas can be operational to connect LATAs or metropolitan areas, the claim is indefinite.

8. "work line" / "protect line"

a. *Plaintiff's proposed construction*: "A line of a ring used to deliver traffic when the line is operational." / "A line of a ring used to deliver traffic in the event the work line becomes unavailable."

b. *Defendant's proposed construction*: "A line of a ring over which working traffic is transported when there is no interruption in the ring." / "A line of a ring allocated to transport the working traffic in the event the work line of the ring becomes unavailable due to an interruption in the ring."

c. *Court's construction*: "A line of a ring over which traffic is transported when there is no interruption in the ring." / "A line of a ring allocated to transport the traffic in the event the work line of the ring becomes unavailable due to an interruption in the ring."

Work lines and protect lines are integral to the self-healing functionality of a SONET ring system, but their respective functionalities are not explicitly described in the specification. The prior art, a Digital Cross-connect System ("DCS"), lacked adequate survivability because responses to interruptions were controlled by a central device that could take several minutes to implement alternate re-route instructions. *See* '605 patent, 2:45-58. Survivability in self-healing rings, in contrast, is accomplished without waiting for instructions from a centralized device by "routing traffic around the operational side of the ring." *Id.* at 2:59-66.

Comcast contends that Sprint's construction is unworkable because it could apply to both the work line and the protect line, thereby failing to distinguish between the two. For example, the argument goes, once an interruption occurs and traffic is re-routed onto the protect line it is

"a line of a ring used to deliver traffic when the line is operational," which is Sprint's proposal for the definition of a work line. (D.I. 56 at 75). Comcast suggests including a new term, working traffic, to correct the perceived error, but this solution goes too far. It is the interruption or lack thereof that distinguishes between a work line and a protect line. A protect line is only used to deliver traffic when there has been an interruption, and as long as the definition contains a reference to the presence or absence of an interruption, the risk of confusion is minimized. The protect line is "a line of a ring used to deliver traffic when the line is operational" because that is the very purpose of a protect line. The protect line is only called into service because there is an interruption in the work line. The Court's construction stays true to the specification and avoids the addition of new terms that are neither present nor defined in the specification.

C. U.S. Patent No. 6,870,832

1. "software agent"

a. *Plaintiff's proposed construction*: No construction necessary. Alternatively, the term means "software that assists in establishing a telephone call."

b. *Defendant's proposed construction*: "A software interface between a session manager and a telephony card operational to interwork between analog telephony signals and ATM signals."

c. *Court's construction*: "A software interface between a session manager and a telephony card."

Sprint does not believe a construction is necessary, but argues in the alternative that the term can be defined by rephrasing the claim language. Although this proposed definition is easy to comprehend, it does not add to the understanding of what "software agent" means because that language already exists in the claim itself.

Comcast, on the other hand, seeks to limit "software agent" based on a portion of the specification. The pertinent section describes, "a provider agent software interface for use between a telephony card and a session manager. The telephony card is operational to interwork between analog telephony signals over a plurality of telephony channels and ATM signals over a plurality of ATM virtual connections . . . ." '832 patent, 2:16-20. The first sentence, which discusses the software agent acting as an interface between a telephony card and a session manager, provides a useful description of a "software agent," and the Court has included this in its construction. The second sentence, however, refers to the telephony card when it describes the interworking between analog and ATM signals. Because the telephony card is separate from the software agent, it is not necessary for the construction of "software agent."

The parties also vigorously dispute whether this term, and several of the subsequent terms, in the '832 patent should be limited to "ATM signals." Comcast concedes that several modes of signal transport are covered by the patent, including broadband and high-bandwidth, but contends that what is actually being transported over the networks—ATM cells—remains the same in each embodiment. (D.I. 56 at 83). To support this position, Comcast relies on passages from the '832 patent that disclose the transport of ATM cells, regardless of the type of network being described. *See* '832 patent, 2:16-20 (stating that "[t]he invention *includes*" technology "to interwork between analog telephony signals over a plurality of telephony channels and ATM signals over a plurality of ATM virtual connections . . . .") (emphasis added); *id.* at 10:2-3 ("The ATM/DSL format is a DSL signal that transports ATM cells as the high-bandwidth data."); *id.* at 10:12-14 ("The ATM/broadband format is a broadband signal that transports ATM cells.").

"A patentee," however, "may claim an invention broadly and expect enforcement of the full scope of that language absent a clear disavowal or contrary definition in the specification."

Home Diagnostics, Inc. v. Lifescan, Inc., 381 F.3d 1352, 1357 (Fed. Cir. 2004). There has been no "clear disavowal" here. The patentees have described the invention broadly and cannot be limited to the embodiments that disclose the use of ATM cells or ATM signals. *See* '832 patent, 4:17-21 (describing "ADSL/ATM signal" as "[o]ne example of such a digital signal" and explaining that "[t]he telephony card 150 includes circuitry to interwork analog telephony signals from the phones 151-152 with *the digital signals* to the network") (emphasis added). Additionally, the claim language refers to the "interwork[ing] between the analog telephone and a digital communication link" generally instead of requiring a specific type of signal. *Id.* at claim 1. The Court is not inclined to limit this term, or any of the subsequent disputed terms in the '832 patent, to "ATM signals" or "ATM cells" because that is just one embodiment mentioned by the patentees and there has been no disavowal of claim scope.

2. "communication hub"

a. *Plaintiff's proposed construction*: No construction necessary. Alternatively, the term means "equipment that stores and executes the software agent and is configured to interwork between an analog telephone and a digital communication link."

b. *Defendant's proposed construction*: "Equipment that stores and executes the software agent and includes a telephony card that interworks between analog telephony signals and ATM signals."

c. *Court's construction*: "Equipment that stores and executes the software agent."

Both parties agree that the communication hub is "equipment that stores and executes the software agent." To this agreed upon definition, Comcast seeks to add the limitation that the communication hub include a telephony card. Comcast argues that the telephony card is the only device that is described in the specification as being able to "interwork between the analog

telephone and a digital communication link." (D.I. 56 at 87). The relevant portion of the specification provides, "Telephony cards are being developed to manage multiple telephones in the home. The telephony cards are *typically* plugged into communications hubs or computers in the residence, and telephones are connected to the telephony card." '832 patent, 1:42-46 (emphasis added). This permissive language does not require that a telephony card be included in the communication hub, and cannot form the basis for requiring such a construction. Moreover, several dependent claims in the '832 patent show that the patentees knew how to specifically claim a communication hub that includes a telephony card when they so desired. *See id.* at claims 11, 23 (claiming "software agent [that] is configured to exchange control messages with an application programming interface for a telephony card *in the communication hub*") (emphasis added).

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM signals" in this term's construction.

3. "session manager"

a. *Plaintiff's proposed construction*: No construction necessary. Alternatively, the term means "a platform that exchanges control messages with the software agent and that controls network elements to establish a telephone call."

b. *Defendant's proposed construction*: "A platform that controls a communications network and with which a user requiring a communication session from the network must interface to request and receive communications services."

c. *Court's construction*: "A platform that controls a communications network."

Comcast alleges that the patentees defined "session manager" in the specification. "To act as its own lexicographer, a patentee must 'clearly set forth a definition of the disputed claim

term' other than its plain and ordinary meaning. It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must 'clearly express an intent' to redefine the term." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citation omitted). Comcast points to a passage that states, "[Advanced communications] networks are controlled by complex hardware and software platforms referred to as session managers. Users requiring communications sessions from these advanced networks must interface with the session managers to[] request and receive communications services." '832 patent, 1:19-24. The patentees here did not "clearly express an intent" to define session manager in a way that requires a user. The quoted language focuses more on the session manager's functionality than its definition and need not be included in the construction.

4. "controlling the network elements"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "Controlling all of the network elements of the communications system that provide telephony service to the user."

c. *Court's construction*: No construction necessary.

Comcast asserts the claim language and antecedent basis require this Court to construe "controlling the network elements" as requiring control over *all* network elements that provide telephony service. The Court disagrees. The preamble to claim 1 recites, "A method of operating a communication system having a session manager and network elements to provide telephony service . . . ." '832 patent, claim 1. The claim later requires "controlling the network elements to establish the telephone call . . . ." *Id.* The antecedent basis for "the network elements," Comcast argues, refers to "all of the network elements of the communications system

that provide telephony service to the user." (D.I. 56 at 90). Nowhere does the claim state that all network elements must be controlled. It is a permissible reading of the preamble that only a subset of the network elements are necessary to provide telephony service to the user. This subset of network elements would then provide the antecedent basis, not all the network elements.

5. "digital communication service for the telephone call"

a. *Plaintiff's proposed construction*: No construction necessary. Alternatively, the term means "digital telephone service."

b. *Defendant's proposed construction*: "Digital telephone service using ATM signals."

c. *Court's construction*: No construction necessary.

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM signals" in this term's construction.

6. "provide Asynchronous Transfer Mode service"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "Transmit ATM cells over ATM transport."

c. *Court's construction*: No construction necessary.

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM cells" in this term's construction.

7. "provide Digital Subscriber Line service"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "Transmit ATM cells over DSL transport."

c. *Court's construction*: No construction necessary.

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM cells" in this term's construction.

8. "providing/provide Internet Protocol service"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "Transmitting/transmit ATM cells over IP transport."

c. *Court's construction*: No construction necessary.

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM cells" in this term's construction.

9. "providing/provide Synchronous Optical Network service"

a. *Plaintiff's proposed construction*: No construction necessary.

b. *Defendant's proposed construction*: "Transmitting/transmit ATM cells over SONET transport."

c. *Court's construction*: No construction necessary.

For the reasons stated in section III.C.1, *supra*, the Court declines to include "ATM cells" in this term's construction.

IV. CONCLUSION

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