

IN THE UNITED STATES COURT
FOR THE DISTRICT OF PUERTO RICO

EON CORP. IP HOLDINGS,

Plaintiff,

v.

Civ. No.: 11-1555(SCC)

AT&T MOBILITY LLC, ET AL.,

Defendants.

CLAIM CONSTRUCTION ORDER

Plaintiff EON Corp. IP Holdings asserts three patents against the AT&T Defendants: United States Patent No. 5,388,101 (“the ‘101 patent”), United States Patent No. 5,481,546 (“the ‘546 patent”), and United States Patent No. 5,592,491 (“the ‘491 patent”). After a technology tutorial and a *Markman* hearing, *see* Docket No. 436, we now construe the thirteen terms currently disputed by the parties.

I. Background

Our purpose here is to “determin[e] the meaning and scope

of the patent claims asserted to be infringed.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Disputes over the meaning of claim terms present pure questions of law. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008). Where possible, a court gives the words in a claim “their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of invention.” *Id.* (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc)); *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“First, we look to the words of the claims themselves . . .”). However, in some cases a patentee “may choose to be his own lexicographer,” in which case we use the patentee’s “special definition” so long as it “is clearly stated in the patent specification or file history.” *Vitronics*, 90 F.3d at 1582.

Next, we consider other intrinsic evidence, including the patent specification and the prosecution history. *Id.* at 1582–83. The specification, especially, “is the single best guide to the meaning of a disputed term.” *Id.* at 1582. The prosecution history, meanwhile, may contain “express representations

made by the applicant regarding the scope of the claims”; as such, it “is often of critical significance in determining the meaning of the claims.” *Id.* Where the intrinsic record does not alone resolve the ambiguity in a claim term, we may consider extrinsic evidence, including expert and inventor testimony, dictionaries, and technical treatises and articles. *Id.* at 1584.

Finally, we note that a patentee “need not ‘describe in the specification every conceivable and possible future embodiment of his invention.’” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (quoting *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1344 (Fed. Cir. 2001)). Thus, we may not read limitations from the patent specification, such as from a preferred embodiment, into the claims. *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002) (“[T]he claims must be read in view of the specification . . . , but limitations from the specification are not to be read into the claims”). “Whether an invention is fairly claimed more broadly than the ‘preferred embodiment’ in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art” *Wang Labs. v. Am. Online, Inc.*, 197 F.3d 1377, 1383 (Fed. Cir. 1999).

II. Analysis

As we've said, three patents are at issue here. The '101 and '546 patents share substantially similar specifications. Each is principally concerned with addressing problems of network capacity and congestion. The '491 patent, which is a continuation-in-part of the '101 patent, is principally concerned with providing multiple paths from a subscriber unit to a base station in a communications network.¹

1. "network hub switching center"

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1. We are benefitted in our analysis by the prior opinions of other courts construing the patents-in-suit. Below, we refer regularly to some of these. See *EON Corp. IP Holdings LLC v. Aruba Networks Inc.* ("Aruba Claim Construction Order"), Civ. No. 12-1011, 2013 WL 3455631 (N.D. Cal. July 8, 2013); *EON Corp. IP Holdings LLC v. Aruba Networks Inc.* ("Aruba Reconsideration Order"), Civ. No. 12-1011, 2014 WL 793323 (N.D. Cal. Feb. 25, 2014); *EON Corp. IP Holdings LLC v. Aruba Networks Inc.* ("Revised Aruba Claim Construction Order"), Civ. No. 12-1011, 2014 WL 938511 (N.D. Cal. March 5, 2014); *EON Corp. IP Holdings LLC v. Sensus USA Inv.*, 734 F. Supp. 2d 783 (E.D. Tex. 2010); *EON Corp. IP Holdings LLC v. Landis+Gyr Inc.* ("Landis+Gyr Claim Construction Order"), Civ. No. 11-317, 2012 WL 5874625 (E.D. Tex. Nov. 20, 2012); *EON Corp. IP Holdings, LLC v. Landis+Gyr Inc.* ("Second Landis+Gyr Claim Construction Order"), Civ. No. 11-317, 2013 WL 1866913 (E.D. Tex. May 2, 2013); *EON Corp. IP Holdings, LLC v. T-Mobile USA, Inc.* ("T-Mobile Claim Construction Order"), Civ. No. 10-379, 2012 WL 405492 (E.D. Tex. Feb. 8, 2012); *EON Corp. IP Holdings, LLC v. T-Mobile USA, Inc.* ("T-Mobile Order on Motions to Strike"), Civ. No. 10-379, ECF No. 1001 (E.D. Tex. Sept. 7, 2013).

This term appears in claim 1 of the '101 patent and claims 1, 13, and 17 of the '491 patent. AT&T proposes that it be defined as "a centralized switching center that performs all of the functions needed for operation of the subscriber units in the group of cells that it serves." The Eastern District of Texas has held that this term requires no construction. *See, e.g., EON Corp. IP Holdings, LLC v. Sensus USA Inc.*, 741 F. Supp. 2d 783, 812 (E.D. Tex. 2010). In *Sensus*, the court held that network hub switching centers "were well-known networking components that one of ordinary skill in the art would have recognized were capable of performing the routing functions" mentioned in claim 1 of the '546 patent. *Id.* EON argues that we should follow the Eastern District's lead and not construe this term.

AT&T, by contrast, proposes a more limited definition: "a centralized switching center that performs all of the switching functions needed for operation of the subscriber units in the group of cells that it serves." The Northern District of California has largely adopted this construction. *See Revised Aruba Claim Construction Order*, 2014 WL 938511, at *10. The *Aruba* court noted that the defendants there argued that there was a dispute between the parties regarding whether the claim term "encompasses a switching center that is not part of the net-

work.” *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *8. This dispute, the court found, had not been before the *Sensus* court, and it warranted resolution. *Id.* We agree.

Three limitations are at issue in AT&T’s definition. The first is whether the switching center must be “centralized.” The *Aruba* court reasoned that if it included the “centralized” limitation, “a jury would be likely to look for a specific type of geographic or spatial arrangement.” *Id.* a *9. But, as the court noted, the patent itself at one point describes a “hub switching center” as being “located remotely” from the base station. *Id.* (citing ‘101 Patent, at 11:56–58). We agree with the *Aruba* court that even if the network hub switching center “controls” communications, it does not need to be centralized. *See id.*

The second point of dispute concerns whether the network hub switching center performs “all” of the switching functions. In *Aruba*, the court rejected the “all” limitation because the defendant there had abandoned it at the *Markman* hearing. *See id.* Nonetheless, AT&T presses it here, and EON relies on the same fact as it did in *Aruba*: that claims 1 and 13 of the ‘491 patent recite switching means in subscriber units. *See id.* (citing ‘491 Patent, at 6:21–22, 8:39–40). Further, EON points to various

other places in which the '101 patents seems to suggest that other structures perform switching functions. *See, e.g., '101 Patent*, at 3:48–4:21 (base station), 4:16–21 (central processing or data station), 5:14–20 (switch control center), 8:3–7 (regional or local service participants), 9:20–23 (data processing center), 9:20–24 (base station). AT&T argues that in pointing to these structures, EON is missing the point, as AT&T's proposed definition makes clear that the switching center performs all of the switching functions *needed for operation of the subscriber units in the group of cells that it services*. In this sense, says AT&T, "all" is limited to referring to cellular switching services within the switching center's network. But this suggests that what AT&T is really after is a limitation regarding the cellular nature of the switching center. And as to this, EON conceded at the *Markman* hearing that the claim term relates to a cellular network. *See* Docket No. 441, at 29–30. Indeed, the '101 and '491 patents are concerned primarily with cellular switching. Accordingly, we agree with the *Aruba* court that switching center serves a particular network of cells.² We therefore adopt *Aruba's*

2. In an order granting a motion for summary judgment of noninfringement against EON on the '491 patent, the court clarified that it "used the word 'network' to mean a cellular core network, not

construction of “network hub switching center”: “a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services.” See *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *10.

2. The Cellular Topography Terms

The parties collectively argued over a group of claim terms concerning the topographical arrangement of certain structures, as they present several related and common disputes. But first, we note two arguments that AT&T initially made but has now disclaimed. First, AT&T says that it is not arguing that a remote receiver cannot be collocated with a transmitter, base station, and/or repeater. Indeed, figure 1 of the ‘101 patent discloses a configuration where the remote receiver is at the base station. Second, AT&T does not seem to dispute the *Sensus* court’s holding that the communications with “receive only receivers” are not limited to one-way communications. The claims’ language makes clear that the “receive only” limitation refers to communications from the subscriber units;

something as expansive as the Internet.” See *EON Corp. IP Holdings v. Cisco Sys. Inc.*, — F. Supp. 2d —, 2014 WL 1308743, at *10 (N.D. Cal. April 1, 2014).

these communications are then passed along to the base station cell. *See Sensus*, 741 F. Supp. 2d at 806–07; *see also, e.g., ‘101 Patent*, at 13:13–19. Moreover, as the *Sensus* court found, nothing in the claims’ language “forbid[s] routine handshaking, error checking, and other control signals from being communicated between the reception units and the subscriber units.” *Sensus*, 741 F. Supp. 2d at 807.

With these points out of the way, we move on to the dispute that most occupied the parties during the *Markman* hearing: what is a “base station geographic area”? The ‘101 patent was concerned with solving the problem presented by a high-powered base station attempting to engage in two-way communication with subscriber units in the base station’s geographic area. In such a case, the high-powered base station can send signals to the subscriber units, but the low-powered subscriber units cannot send signals back to the base station. The ‘101 patent’s solution to this problem was to further subdivide the base station’s geographic area by placing within it remote receivers connected to the base station. These local receivers would be geographically close enough to the subscriber units to receive their transmissions, and the local receivers would transmit their signals back to the base station.

This is shown in the preferred embodiment in figure 2. In that figure, a base station repeater cell **3** communicates with a satellite via a directed dish antenna **3A**; the base station then transmits digital communications to subscriber units **X** by way of an antenna **8**. The local area cell site served by this antenna is the outer dotted ring **19**. Within this local area cell site are some number of remote, receive-only, fixed-location relay stations **20A–20N**, which are positioned at strategic locations and connected by cable, microwave or telephone line **21** to the base station repeater cell **3**. Each of these relay stations serve a subdivided response zone **22**, and subscriber units located within these subdivided response zones communicate with the local remote receivers over a significantly reduced transmission path distance.

With that embodiment in mind, the parties' dispute is over what constitutes the base station geographic area. AT&T essentially asks that we construe it to include only the geographic area served by a single base station transmitter/antenna. EON asks us not to construe this term, but it nonetheless argues for an interpretation that would permit a base station geographic area to include the entire area served by several collocated transmitters/antennas at a single cell

tower.³ We agree with AT&T.

Claim 1 of the '546 patent refers to a "base station data processing and receiving means for transmitting to" subscriber units within the base station's geographic area. '546 Patent, at 10:65–11:1. This language alone is broad enough to encompass multiple transmitters at the base station. However, the claim also makes clear that the base station configuration it teaches includes "a set of local subscriber transceiver units" which are "within the local base station geographic area" and are said to be able to communicate with the base station via digital data signals "synchronously related to a base station broadcast signal." '546 Patent, at 11:19–26. We read this as linking the "base station geographic area" to the area served by a particular "base station broadcast signal." This interpretation is

3. This dispute is important to the parties because at the time of the invention, a cellular network's base station typically consisted of a single omnidirectional antenna. These omnidirectional antennas had a limited ability to receive signals from subscriber units. According to AT&T, at least, the '101 patent's goal was to provide a fix for that problem. Today, however, omnidirectional base station antennas are largely obsolete, having been replaced by sectorized cell towers. On these towers, three collocated transmitters, for example, each broadcast to and receive signals from subscriber units within a 120-degree arc. With such a setup, subscriber units are able to communicate directly with the base station.

confirmed by claim 1 of the '101 patent. That claim teaches a base station configuration consisting in part of "base station data transmission facilities" that transmit to local subscriber units. '101 Patent, at 11:33–34. Further, the claim provides for "a set of local subscriber transceiver units" in the "base station geographic area" that are "adapted to communicate with said base station by way of digital data signals" that are "synchronously related to said base station broadcast signal." '101 Patent, at 11:49–55. Again, the geographic area is defined by reference to the base station signal transmitting to that area.⁴ For these reasons, we conclude that a person reasonably skilled in the art at the time of the invention would understand the term base station geographic area to include only the area served by a single base station transmitter/antenna, not the area served by a cell tower having multiple collocated transmitters.

Finally, AT&T's proposed construction of the topographical terms in claim 1 of the '491 patent includes a limitation that

4. This is true, too, in claim 14 of the '546 patent. There, the geographical area, called the cell site, is explicitly defined as the area served by "a digital transmitter" included within a "cell site communication system." '546 Patent, at 13:12–14:2 (referring to "a digital transmitter for communicating with individual identified subscriber units geographically located within the cell site").

contradicts the claim's express language. Contrary to AT&T's proposed construction, the claim language only requires a local remote receiver in "*one* of a plurality of cell subdivision sites." '491 Patent, at 6:38–42 (emphasis added). We thus reject AT&T's proposed construction to the extent that it would require "each response area" to have a local remote receiver. We also reject AT&T's proposed language that the base station geographic area "is covered by" a plurality of smaller response areas. That language could be read to imply that the entirety of the base station geographic area had to be included in one of the plurality of smaller response areas, something that the specification does not require. See '101 patent, fig. 2. We therefore substitute "includes" for "is covered by."

3. "synchronously related"

In several places, the patents-in-suit speak of transmissions that are "synchronously related" to the base station broadcast signal. See, e.g., '101 Patent, at 11:52–55. EON asks us to follow the *Sensus* court and construe the term to mean "related in time and/or frequency." See *Sensus*, 741 F. Supp. 2d at 802. AT&T argues that this phrase should be construed, at least in certain claims, to be limited to a specific timing protocol, specifically the one found in figure 3 of the '101 patent.

To begin with, claim 1 of the '101 patent refers to subscriber units that communicate with the base station "by way of digital data signals of variable lengths synchronously related to [the] base station broadcast signal and timed for . . . multiplexed message transmission." '101 Patent, at 11:52–55. It is undisputable that the digital data signals sent by the subscriber units are "synchronously related" to the base station broadcast signal. The question is whether this synchronous relation must be in terms of time, or whether it may also be in terms of frequency. In support of its more expansive definition, EON's strongest argument is a reference to the specification explaining that "[s]ynchronization is controlled by the carrier frequency Tx_a of the cell transmitter upon which the subscriber unit 4 locks." *Id.* at 8:21–23. But reading this phrase in its larger context, it is clear that it does not teach that the subscriber unit's transmissions are synchronously related to the base station broadcast signal in terms of frequency.

By reference to the preferred embodiments shown in several of the '101 patent's figures, the specification explains the typical operation of the communications network the patent describes. After describing the "[t]ypical message protocol," *id.* at 7:28, the specification notes that "it is pertinent

to synchronize timed data within the nationwide system, even taking into account differences in travel time of radio waves,” *id.* at 7:44–46. It then describes a useful technique to solve that problem: “synchroniz[ing] transmissions with the TV carrier signal from the cell site transmitter and [organizing] all the multiplexed timing slots for avoiding idle on-air time.” *Id.* at 7:50–53. By its terms, this describes synchronization in terms of time.

The portion of the specification to which EON cites comes several paragraphs later, in a description of a figure that “relates to a ‘set-up’ and response sequence of intercommunications between” the subscriber units, the local remote receivers, and the base station. *Id.* at 8:16–20. As EON notes, “[s]ynchronization is controlled by the carrier frequency” on which the subscriber unit “locks.” *Id.* at 8:21–23. But the specification further explains that the remote receiver receives the subscriber unit’s transmission “on its frequency Rx_{su} ” and it then acknowledges this reception to the base station. *Id.* at 8:27–29. The base station then selects which of the remote receivers receives the best signal from the subscriber unit. *Id.* at 8:31–33.

Importantly, the subscriber units transmit simultaneously on two different frequencies; one of these is chosen by the base

station and corresponds to a particular remote receiver chosen by the base station. *Id.* at 8:34–42. If the subscriber unit moves to the subdivision zone of another remote receiver, the system reacts and hands the subscriber unit off to another remote receiver, to which the subscriber unit will communicate in a different frequency. *Id.* at 8:53–62. Once this “set up” period finishes, the message is transmitted. *Id.* at 8:42–44.

All of this shows that the specifications reference to synchronization being “controlled” by the carrier frequency does not teach synchronization in terms of frequency. Indeed, it teaches exactly the opposite: one of the primary innovations in the ‘101 patent is a subscriber unit that transmits digital data messages via multiple simultaneous and changing frequencies. In no sense, then, are the subscriber unit’s transmissions “synchronously related” in terms of frequency to the base station broadcast signal; to the contrary, the patent teaches that the sense in which the carrier frequency “controls” synchronization is by giving the subscriber unit a signal with respect to which it may time its broadcasts. *See id.* at 8:16–53 (describing a “set-up” function, controlled by the carrier frequency, that precedes message transmission); *id.* at 8:48–53 (describing a timing relationship between the base station broadcast signal

and the subscriber unit “response interval”); *see also id.* at 9:44–66 (discussing specific applications of timing synchronization of messages within the system). For example, figure 9A shows a simplified subscriber unit with a frequency control section 57 that is used “monitor and set the transmission carrier frequency during set up procedures for transmission to a most favorable fixed local remote receiver (20) station.” *Id.* at 10:28–31. But this structure also “serves as the system clock to synchronize the transmission frequency of digital data pulses with the system by means of locking to a TV station carrier signal, for example.” *Id.* at 10:31–34. All of this together teaches that the subscriber unit locks on to the base station broadcast signal, or other carrier signal, and uses that signal to time its messages. This is synchronization in time, not frequency.

All that EON is left with in opposition to this reading is the general warning not to read the limitations of a preferred embodiment into the patent’s claims. Heeding this warning, we do not accept AT&T’s proposal to limit the synchronization to the specific timing algorithm disclosed in the ‘101 patent. But on the topic of time-versus-frequency synchronization, the preferred embodiments and their descriptions only help us to understand the claims’ language, and they confirm the

simplest reading of the term “synchronously,” which, in plain language, refers to timing. *See* MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 1196 (10th ed. 1993) (defining “synchronous,” in the context of digital communications, as communications “in which a common timing signal is established that dictates when individual bits can be transmitted”); *see also* ROGER L. FREEMAN, FUNDAMENTALS OF TELECOMMUNICATIONS 272–73 (1999) (describing synchronous transmissions as a process that “[i]n normal practice” uses a transmitter as the “master clock” to determine the timing of messages within the system).⁵

4. “unable to communicate”

Claim 1 of the ‘491 patent describes a communication network consisting of, in part, a base station and subscriber units adapted to communicate with that base station while within its geographical area. The network further consists of a

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5. Furthermore, we agree with AT&T to the extent that it argues that the Eastern District of Texas was incorrect when it suggested that the phrase “and timed” modifies “synchronously related” in claim 1 of the ‘101 and ‘546 patents. *See Landis+Gyr Claim Construction Order*, 2012 WL 5874625, at *6, *cited by* Docket No. 244, at 59 n.44. The claims’ plain language shows that “and timed” is parallel to “synchronously related,” and both phrases modify “digital data signals.” *See, e.g.,* ‘546 Patent, at 11:23–26 (“digital data signals of variable lengths *synchronously related to a base station broadcast signal and timed for multiplexed message transmission*” (emphasis added)).

modem communicatively coupled to both the subscriber units and local base station. The purpose of this modem is “transferring” the signal from the subscriber units to the base station “if said local subscriber units are unable to directly communicate with” the base station. *See also* ‘491 Patent, claims 13, 14.

EON requests that we not construe the term, while AT&T proposes three limitations. First, AT&T’s proposes a “binary” limitation, which would clarify that the subscriber unit can communicate *either* directly with the base station *or* through the modem. *Cf.* ‘491 Patent, fig. 2. Second, it proposes a “conditional” limitation, *i.e.*, AT&T’s proposed language to the effect that the transferring function is “conditioned on whether the subscriber unit is unable to directly communicate with the” base station. And third, there is the “user intervention” limitation, which provides that a “user rendering the subscriber unit unable to communicate” does not fall within the scope of the claim. At the *Markman* hearing, EON conceded the correctness of the “conditional” and “binary” limitations. *See* Docket No. 441, at 111–13. Thus we discuss only the “user intervention” limitation.

The gravamen of this dispute is whether a user’s choice to turn off the subscriber unit’s cellular radio renders the unit

“unable to communicate” with the base station for the purpose of the claim language. The Eastern District of Texas has held that “the mere choice of the user to turn off the cellular radio” does not satisfy the “unable to communicate” term. *T-Mobile Order on Motion to Strike*, Civ. No. 10-379, ECF No. 1001, slip op. at 5 (E.D. Tex. Sept. 7, 2012). However, the court suggested that user intervention might be sufficient where, for example, the reason for the switch was that the direct communication between the subscriber unit and the base station was impaired. *See id.* 4–5 (construing EON’s expert’s report as “not attempt[ing] to opine that the user choosing to turn off the cellular data alone is enough to satisfy” the condition); *see also id.* at 5 (“[A] user solely choosing to turn off cellular radio, *without more*, cannot be the reason the subscriber unit is ‘unable to communicate’” (emphasis added)).⁶

6. EON argues that the *T-Mobile* order we cite was “not related to *claim construction*,” Docket No. 269, at 38, but this is plainly incorrect, as the court was considering whether EON’s expert’s report complied with its claim construction order. *See T-Mobile Order on Motion to Strike*, Civ. No. 10-379, ECF No. 1001, slip op. at 5 (E.D. Tex. Sept. 7, 2012). We thus read the order as a clarification of the *T-Mobile* court’s previous claim construction order. Moreover, we reject EON’s argument that the *T-Mobile* court “found” that “a user turning off the cellular data satisfies the ‘unable to communicate’ condition if [that] communication ‘*had been*

The *Aruba* court largely agreed. It read the claim language as “recit[ing] a simple ‘if, then’ automatic switching.” *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *13. On its reading, the claim language did “not suggest an apparatus generally designed to switch at the user’s whim.” *Id.* Nonetheless, it recognized that *T-Mobile* had “implied” that user intervention in response to impaired communications might be sufficient in certain circumstances. *See id.* Further, it identified an ambiguity in the defendant’s proposed language (which AT&T repeats here): it is not obvious what it means to “render” the subscriber unit unavailable. *Id.* Taking the unit to a place where signal strength is weak could be said to be “rendering” it unavailable, but “this situation is disclosed in the specification.” *Id.* (citing ‘491 Patent, at 3:26–32, 4:32–37). Accordingly, the court accepted a modified version of the user intervention limitation, modifying “unable” with “for some reason other than the user intentionally disabling said unit.” *Id.* at *14.

and may be expected to still be impaired,’” Docket No. 269, at 38 (citing *T-Mobile Order on Motion to Strike*, Civ. No. 10-379, ECF No. 1001, slip op. at 5); the *T-Mobile* court made no such holding and was instead “characterizing the opinion of” EON’s expert, *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *13 n.8.

EON's arguments to the contrary are unpersuasive. Beyond its incorrect characterization of *T-Mobile* and an exhortation not to read a preferred embodiment out of the claim, it relies principally on precedent cautioning courts against reading negative limitations, unmoored in the text, into patent claims. See Docket No. 269, at 37–38 (citing *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1322 (Fed. Cir. 2003) (rejecting a court's "additional negative limitation" because it "[f]ound] no anchor in the explicit claim language")). But we read the claim language as requiring the transfer to happen as a result of an inability to communicate—not as a response to an intervening act by the user. Cf. *Am. Calcar, Inc. v. Am. Honda Motor Co., Inc.*, 651 F.3d 1318, 1339–40 (Fed. Cir. 2011) ("'In response to' connotes that the second event occur in reaction to the first event."), cited by *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *12. This is further confirmed by the preferred embodiment in figure 2, which provides that the switching means within the subscriber unit assumes its default direct path to the base station when the subscriber unit "is able to detect rf signals from" the base station. '491 Patent, at 3:40–43. And the problems that the '491 patent describes itself as addressing do not provide for user intervention directly with

the device. *See* '491 Patent, at 3:24–32 (describing the situation where the subscriber unit is located out of range of a base station or is within range of a base station but in a physical location, like a basement, that prevents it from receiving the base station's signals); *cf. Am. Calcar*, 651 F.3d at 1340 (“[T]he specification fails to disclose any embodiment that requires any type of user interaction . . .”).

For these reasons, we agree with the *Aruba* court that the user intervention limitation is required by the specification's text. Accordingly, we also adopt its construction of the term.

5. “communicatively coupled” / “communicatively coupled for transferring”

The dispute here is whether the term “coupled” requires a connection or the mere capability of connection. EON relies on two cases from the Federal Circuit to argue that a mere capability is sufficient. First, it notes that according to the claim language, the modem is communicatively coupled to the local subscriber units and the base station repeater cell “for transferring” certain messages. Citing *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1204–05 (Fed. Cir. 2010), EON argues that the claim's prepositional phrase (“for transferring”) requires only a capability, not active use. *Finjan* concerned a software

patent that included claim language describing software components “for,” *e.g.*, “preventing execution” or “obtaining a Downloadable.” *See id.* The court held that even this language “describe[d] capabilities without requiring that any software components be ‘active’ or ‘enabled.’” *Id.* Nonetheless, the court held that these software components, even when inactive, existed in the product at all times. *Id.* at 1205. EON is certainly right that the prepositional phrase “for transferring” requires only a capability of communicating, not actual communication. But *Finjan* can take EON no further, as its interpretation effectively asks us to ignore the word “coupled,” which comes before the prepositional phrase.

EON also relies on *In re Translogic Tech., Inc.*, 504 F.3d 1249 (Fed. Cir. 2007). There, the court construed the phrase “coupled to receive” to mean “capable of receiving.” *Id.* at 1258. The court did so, however, after finding that the claim terms “d[id] not require any specific input or connection.” *Id.* By contrast, the court construed the phrase “coupled to” in a claim term that identified the two coupled structures as “defin[ing] a connection between” those structures. *Id.* This makes sense, as where the input was not identified, the term coupled, despite its plain meaning, could not describe an actual connection. But

where the claim made clear that two structures were in fact “coupled,” the court made plain that a connection existed. The situation here, as AT&T points out, mirrors the latter. The claim term specifies that the modem is coupled to the local subscriber units and the base station repeater cell. We do not understand how this can mean anything other than a connection. The adverb “communicatively” suggests that the purpose of this connection is communication, and the claim term further specifies that the purpose of that communication is transferring certain data messages.

We conclude, therefore, that coupled “defines a connection.” *Translogic*, 504 F.3d at 1258. That said, we agree with the *Aruba* court that the defendants’ proposed “between” language “impl[ies] a spatially or geographically specific type of connection”—and may even imply a physical, hard-wired connection. See *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *7. As AT&T recognizes, these limitations are not compelled by the claim language. As such, we adopt *Aruba*’s construction of the term, which avoids such an implication. We also agree with the *Aruba* court that AT&T’s modem limitations are unwarranted, especially given that the parties here have agreed on the definition of the term “mo-

dem.”⁷

“Communicatively coupled,” as it appears in claim 1 of the ‘491 patent, is construed as follows: “a modem is connected to the local subscriber units and the local base station repeater cell for the purpose of communications between the two.”

6. “base station broadcast signal”

The parties agree that a “base station broadcast signal” is a wireless signal transmitted to all the subscriber units and/or receivers. The fundamental dispute is over whether the signal must be transmitted *by the base station*. EON relies principally on opinions from the Eastern District of Texas. At least twice that court has considered proposed constructions of this term that include the “base station” limitation, and both times it has

7. At the *Markman* hearing, EON said that it agreed with the *Aruba* court’s reasoning insofar as it held that “communicatively coupled” required more than the mere capability of connection, but it argued that the word “connected” in that court’s construction was loaded, as it could imply that the network is circuit- rather than packet-switched. See Docket No. 441, at 136–38. But the *Aruba* court subsequently clarified that its construction required no such limitations, see *Aruba Reconsideration Order*, 2014 WL 793323, at *3–4, and at the *Markman* hearing, AT&T explicitly disclaimed any attempt to read a circuit-switched limitation into the patent, see Docket No. 441, at 141–43. We therefore use the word “connected” in our construction, but we, like the *Aruba* court, do not understand that term to require a circuit-switched rather than packet-switched network.

construed the term as EON now asks us to do: as “a wireless signal transmitted to all subscriber units and/or receivers.” *See Landis+Gyr Claim Construction Order*, 2012 WL 5874625, at *6; *Sensus*, 741 F. Supp. 2d at 801. AT&T, by contrast, relies principally on the term’s plain meaning.

We agree with AT&T. By its plain language, the term “base station broadcast signal” implies that it is a signal sent by a base station. EON’s specification-based arguments, moreover, give us no reason to depart from this understanding. For example, EON points to language in the ‘101 patent that provides for synchronization with either “a base station carrier signal” or “the television frames of a master TV channel.” ‘101 Patent, at 3:48–55. From this, EON concludes that a “person of ordinary skill in the art would understand that television signals do not only come from a base station, but can come from a television tower unrelated to the communication network.” Docket No. 269, at 24. This is surely correct, but it provides no basis for interpreting “base station broadcast signal” so broadly; to the contrary, the language cited by EON makes clear that a signal from the master TV channel is *different than* the “base station carrier signal.” And as AT&T points out, during reexamination of the ‘101 patent, EON described the

digital signals by which subscriber units communicate with a base station as “synchronously related to a broadcast signal and, more specifically, a broadcast signal *of a base station*.” Docket No. 245-2, at 20 (patent owner’s statement) (emphasis added); *see also id.* at 21 (referring to a “broadcast signal sent from a base station”). All of this supports the reading proposed by AT&T.

Moreover, the Eastern District of Texas orders are of limited persuasive authority on this point. Though that court has rejected the language that AT&T proposes here, it has done so implicitly. EON points to—and we can find—nothing in any of those opinions specifically addressing the “base station” limitation. To the contrary, the *Sensus* court seems to have assumed the applicability of the limitation even as it did not include it in its construction. *See Sensus*, 741 F. Supp. 2d at 801 (“Any given message transmitted *by the base station* to a subscriber unit is sent to all units.” (emphasis added)). It seems, then, that the Eastern District of Texas may not have been presented with the arguments that we have been presented with now; certainly, its statement of the disputes regarding the claim term does not include whether it must be sent by the base station. *See id.* at 800 (addressing proposed

limitations concerning whether the signal must be a television/video signal and whether it must be sent to “all” subscriber units); *see also Landis+Gyr Claim Construction Order*, 2012 WL 5874625, at *5–6 (discussing proposed limitations concerning whether the signal must be sent to “all subscriber units and whether it must be sent to them “directly”).

The limitation proposed by AT&T is compelled by the claim language. We construe “base station broadcast signal” to mean “a wireless signal transmitted by the base station to all subscriber units and/or receivers.”

7. “adapted for communicating”

In some ways, this dispute presents a mirror image of the dispute over “communicatively coupled.” EON once again argues that the term means “capable of communicating.” This time, however, AT&T suggests that the term needs no construction. Beyond requesting no construction, AT&T’s position is unclear. In its responsive brief, it made the point that “capable of” is not more clear than “adapted for,” but it did not argue that the two terms were not synonymous. *See* Docket No. 244, at 83–84. However, in its sur-reply brief, AT&T implies—without seriously arguing the point—that the present dispute is unlike the related dispute that the Eastern District of

Texas previously resolved in a manner favorable to EON's position here. *See* Docket No. 332, at 40 (citing *T-Mobile Claim Construction Order*, 2012 WL 405492, at *11 (construing "adapted for communicating" to require only "the capability to communicate")). In any case, we agree with EON's position. The term's plain language as well as the case law strongly supports the position that "adapted for" is jargon for "capable of." *See, e.g.*, Docket No. 269, at 34 (citing treatises and cases).

8. "if receiving a signal" / "not receiving a signal"

AT&T proposes two limitations here, which the *Aruba* court called the binary and the conditional limitation. The first is "essentially a restatement of the claim" meant to confirm "the binary nature of the system." *Revised Aruba Claim Construction Order*, 2014 WL 938511, at *14. It essentially provides that there is a "determining" step where the subscriber unit determines whether it is receiving a signal from the base station repeater cell; if it is not, it then performs certain steps. The binary limitation makes clear that these steps are performed *only* if, at the determining step, the subscriber unit determines it is not receiving the base station repeater cell's signal. The conditional limitation provides that communication via the subscriber unit's modem is outside of the claim's scope if it is the result of

“[u]ser choice alone.”

For the reasons laid out in our discussion of the “unable to communicate” term, we agree, for the most part, with AT&T that the user choice limitation is compelled by the claim language, and EON does not even dispute the substance of the binary limitation. We thus adopt the *Aruba* construction, which was itself premised on the previous interpretations of the term by the Eastern District of Texas. We construe the term as follows: “The method steps listed after ‘if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of’ are not performed if the subscriber unit is receiving a signal from said local base station repeater cell. Using the modem to communicate regardless of whether there is signal reception does not fall within the scope of the claim.”

9. “data processing means at the base station”

The parties agree that the function of this means-plus-function term is “assembling and re-transmitting digital subscriber messages from the subscriber units via the satellite to the central station.” The parties also agree about the components that make up the corresponding structure. The scope of their limited disagreement goes to AT&T’s proposed inclusion

of the lines in the specification that describe the components. EON argues that the reference to the specification language is unnecessarily restrictive; AT&T argues that it is necessary to fully understand what is shown in the referenced figures, especially figure 5 of the '101 patent. AT&T also emphasizes that references to the specification are common in constructions of means-plus-function elements. Finally, AT&T argues that EON's point about the language being unnecessarily limiting conflicts with the Patent Act, which limits means-plus-function elements to the structure actually disclosed in the patent and its statutory equivalents. *See* 35 U.S.C. § 112, ¶ 6.

We agree with AT&T. Figure 5 is somewhat skeletal, and its meaning is made much clearer by reference to the specification. Rather than confuse a jury, we think referring to the specification will help it. Further, we reject EON's argument, in its reply brief, that the structures described by AT&T's proposed language are also described elsewhere in the patent. As AT&T clarifies—and the proposed language bears out—the citation to the specification describes only the elements after the first semicolon; thus, EON's citation to points where the elements in figures 1 and 2 are described are inapposite. And its citation to another mention of VSAT 44 is in a brief description of

figure 5 that does not explain its function in any way. *See* Patent '101, at 4:41–45.

Accordingly, we adopt AT&T's proposed construction with one change: to make clearer that the citation to the specification refers only to the elements of figure 5, we will replace the comma after the citation with another semicolon. We thus identify the structure corresponding to this means-plus-function element as: "transmitters **1A, 3A, 2F** (fig. 1), **40** (fig. 2); Packet Builders **41–41A**, Price Packets **42**, Assemble **43**, Time **45**, and VSAT **44** (fig. 5), as described at 7:56–8:7; and statutory equivalents."

10. "means in said base station for compensating"

The parties agree that the Eastern District of Texas properly identified the function of this means-plus-function element, which is "compensating for the time of propagation of messages between the different individual subscriber units and the base station data processing facilities." They disagree about the corresponding structure. According to EON, the Eastern District of Texas has properly identified the structure as "guard bands as depicted in figure 7B and described at '101 Patent, at 9:44–46, and statutory equivalents." AT&T argues that the function lacks a corresponding structure and the claim is

therefore indefinite.

Claim 9 of the '101 patent describes a means for compensating for the time it takes communications to travel between the subscriber units and the base station. Figure 7A describes these delays. Figure 7B demonstrates a solution to this problem. As the *Sensus* court described, the figure and its accompanying description describe a buffering of message transmission frames by 120-microsecond “guard bands.” *Sensus*, 741 F. Supp. 2d at 820 (citing '101 Patent, at 9:51–56). According to the specification, these guard bands “solve the transmission delay problem and negate[] the need for other corrective measures.” *Id.* The *Sensus* court thus identified the guard bands and their accompanying description as the structure for this means-plus-function element.

AT&T seems to agree with *Sensus*’s analysis, but it suggests that a “guard band” —a delay—cannot be a structure. It also argues that the guard bands, even if they are a structure, are not “in the base station” as required by the claim language. As to these arguments, however, AT&T points to nothing in support of its assertion that a buffer period cannot be a structure. We can find nothing to support such an argument either—indeed, as EON points out, *Sensus* explicitly held to the

contrary. We conclude, therefore, that the guard band may be a structure. As for whether it is in the base station, the specification provides that the function illustrated in figure 7B occurs “in the base station.” *See* ‘101 Patent, at 9:44–46 (“Critical timings in the messages processed within the base station repeater cell site (19, FIG. 2) are discussed in relationship to FIGS. 7A and 7B.”); *see also id.* at 9:61–66 (explaining that as a result of the function described by figure 7B, the “base station repeater cell 3 thus adjusts its synchronization” after accounting for the message propagation delays). We therefore have no problem concluding that the guard band is in the base station.

We construe the structure corresponding to this means-plus-function element as: “guard bands as depicted in figure 7B and described at ‘101 Patent, at 9:44–46, and statutory equivalents.”

11. “means for operating the base station and subscriber units to hand off”

Despite its classic means-plus-function language, EON maintains that this term does not describe a means-plus-function element. The entirety of EON’s argument on this point, however, is an assertion that the ‘101 patent’s drafter favored the word “means.” *See* Docket No. 228, at 72 (citing

Sensus, 741 F. Supp. 2d at 813). But in contrast to the situation in *Sensus* to which EON analogizes, EON has not even attempted to argue that the term recites the structure that performs the described function. Cf. *Sensus*, 741 F. Supp. 2d at 812 (construing “network hub switching center means” and concluding that “[n]etwork hub switching centers” were “well-known networking components that one of ordinary skill in the art would have recognized were capable of performing the routing functions”). We therefore conclude that this is a means-plus-function element. See *Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1366 (Fed. Cir. 2008) (providing that the presumption created by the presence of the word “means” is only overcome “if the claim itself recites sufficient structure to perform the claimed function” (internal quotations omitted)).

In the event that we determine—as we have—that this is a means-plus-function element, EON offers an alternative construction that matches AT&T’s construction of the function. As to the corresponding structure, EON only objects to AT&T’s use of the term “discrete” in the phrase “discrete subscriber unit transmission frequencies assigned to different remote receivers.” And with regard to that limitation, AT&T does not support it by reference to the specification; instead, it simply

argues that EON has agreed to the limitation with regard to a different term before the Eastern District of Texas court. As EON notes, a claim dependent on claim 13 actually *requires* the subscriber units and receive-only receivers to communicate at multiple frequencies. *See* '101 Patent, at 12:58–62 (“subscriber units operable to transmit on a plurality of frequency bands, and receive-only receivers at different subdivision sites operable in different ones of said frequency bands”). We therefore reject the “discrete” limitation but otherwise adopt AT&T’s proposed construction.

12. “reception for receiving and processing data messages”

The parties dispute whether this is a means-plus-function term. According to AT&T, while the claim does not use the word means, it also fails to specify what the structure is that is capable of performing the claimed function. EON relies principally on the presumption that a term lacking the word “means” is not a means-plus-function element—and presumption that it says is strengthened by the fact that the patentee explicitly removed the word “means” during prosecution. *See* Docket No. 269, at 47 (citing *Crane Co. v. Sandenvendo Am.*,

Inc., Civ. No. 07-42, 2009 WL 1586707 (E.D. Tex. June 5, 2009)).⁸

The presumption on which EON relies “is a strong one that is not readily overcome.” *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004). Nonetheless, it may be defeated “by showing that the claim element recite[s] a function without reciting sufficient structure for performing that function.” *Watts v. XL Sys.*, 232 F.3d 877, 880 (Fed. Cir. 2000). The parties thus argue over whether the claim term recites sufficient structure to perform the function of “processing data messages from said set of local subscriber units.” On this point, we agree with AT&T’s suggestion that “reception,” when used to denote a structure, is meaningless. EON says this fact is irrelevant because the subsequent claim language specifies the structure: “comprising a local remote receiver

8. EON describes *Crane Co.* as holding that the fact that the term “means” was removed during prosecution “gives rise to a presumption that the limitations are not drafted in means-plus function form.” Docket No. 269, at 47. This misreads *Crane Co.* In that case, the defendants cited inconsistent amendments as evidence in favor of their position that the terms described means-plus-function elements; the court rejected this argument, finding that the claims recited sufficient structure to perform the claimed function. See *Crane Co. v. Sandenvendo Am., Inc.*, Civ. No. 07-42, 2009 WL 1586707, at *16–17 (E.D. Tex. June 5, 2009). The court did not find that any presumption applied beyond that typically applicable where a claim term lacks the word “means.”

disposed within one of a plurality of cell subdivision sites.” According to AT&T, however, this local remote receiver is insufficient to perform the claimed function. AT&T correctly points out that the “set of local subscriber units” whose messages must be received and processed refers to the entire group of subscriber units in the base station geographic area, but the local remote receiver is associated only with a subdivision of that geographic area, *see* ‘491 Patent, at 6:40–41 (“local remote receiver disposed within one of a plurality of cell subdivision sites partitioned from said local base station geographic area”); it could not, therefore, receive and process messages from the entire set of local subscriber units. This argument has some appeal, but it ultimately fails. Reading further in the claim language, it specifies that the local remote receiver is “adapted to receive low power digital messages transmitted from said local subscriber units *within range of said local remote receiver*.” ‘491 Patent, at 6:45–48 (emphasis added). We conclude, therefore, that to perform the stated function, the local remote receiver need not be able to receive, at all times, messages from every subscriber unit in the base station geographic area; rather, it need only be able to receive messages from those subscriber units actually within its range.

Under this reading, the local remote receiver would be able to receive and process data messages from *any* subscriber unit, whenever that subscriber unit was within its range. The claim language requires no more than this. We conclude therefore that the claim recites sufficient structure to perform the stated function, and AT&T has therefore failed to overcome its burden. The term is not governed by § 112, ¶ 6, and it requires no further construction. *See also Second Landis+Gyr Claim Construction Order*, 2013 WL 1866913, at *6–7 (holding that the same term was not governed by § 112, ¶ 6, as the claim recited sufficient structure to accomplish the function, and that it needed no further construction).

13. “switching means”

As an initial matter, EON has argued that AT&T, by previously agreeing to a joint construction of this term, has waived the invalidity argument it is now making. *See, e.g.*, Docket No. 423. We disagree for several reasons. First, EON was apprised early on of AT&T’s belief that this term was invalid for indefiniteness. *See, e.g.*, Docket No. 418-3, at 46 (AT&T’s invalidity contentions). Second, the Northern District of California’s opinion holding that the term was indefinite wrought a sufficiently significant change in circumstances that

it justified releasing AT&T from any joint construction to which it had previously agreed. And third, the Court gave EON a sufficient opportunity to brief this matter,⁹ and it cannot be said to have suffered any prejudice. We need go no further, especially considering that we ultimately decide this matter in favor of EON.

Claim 1 of the '491 patent describes subscriber units that have "switching means for selecting a communication path within said network." '491 Patent, at 6:21–22; *see also id.* at 8:39–41. The parties agree that this is a means-plus-function element, but they disagree strongly about what "switching" means and, consequently, about whether the claim states sufficient structure.

According to EON, the function is switching in its most simple form: "selecting a communications path, not deciding which path to use," in the words of the Eastern District of Texas. *T-Mobile Claim Construction Order*, WL 3073432, at *3. As

9. *See, e.g.*, Docket No. 423 (opposition brief on "switching means"), Docket No. 430-1 (sur-reply brief on "switching means"), Docket No. 443 (informative motion on "switching means"), Docket No. 450 (reply to AT&T's opposition to EON's informative motion on "switching means"), Docket No. 452 (informative motion regarding supplemental claim construction authority on "switching means").

the Texas court noted, the specification regularly uses “selecting,” rather than “deciding” or “determining,” when describing the function of electronic switch **13**, the structure that EON associates with this term. *See id.* And, the court found, “the logic for determining which path the electronic switching means selects is identified in the claims and elsewhere throughout the specification.” *Id.* (citing ‘491 Patent, at 5:3–7 (“Because there is no local base station repeater cell, subscriber unit **12** is unable to receive rf signals from a local base station repeater cell. Thus, switching means **13** selects Path B, such that communication to and from subscriber unit **12** occurs through modem **22**.”))).

AT&T’s position is premised primarily on an opinion from the Northern District of California. In that opinion, the court disagreed with the Texas court and concluded that “‘selecting’ [was] comparable to the concept of ‘deciding.’” *Aruba Claim Construction Order*, 2013 WL 3455631, at *4. Further, it read the same specification language cited by the Texas court as “indicat[ing] that the switching means gathers information about how much rf signal the subscriber unit is receiving” and then “determines whether” it is appropriate to switch. *Id.* Finally, the court pointed out that it could not find any

structure that *did* perform the determining function, and concluded that it must therefore be the “switching means.” *Id.*

The problem with AT&T’s reliance on this opinion is that the California court itself recently rejected its reasoning. *See Aruba Reconsideration Order*, 2014 WL 793323. In its reconsideration order, the court looked at the ‘101 patent, of which the ‘491 patent is a continuation-in-part, and noted that it disclosed structures that monitor frequency and make signal-strength assessments. *Id.* at 1; *see also* ‘101 Patent, at 9:14–19 (describing subscriber unit software that can make signal strength measurements and cause the subscriber unit to take certain actions based on those measurements); *id.* at 10:15–31; *id.* at 10:39–43. As the California court noted, these elements are “incorporated within the ‘subscriber unit’ claimed in the ‘491 Patent.” *Aruba Reconsideration Order*, 2014 WL 793323, at *1 (citing ‘491 Patent, at 1:43–52, 2:3–11). The court further clarified that it was referring to the ‘101 Patent’s specification only to determine the meaning of the claimed function—“switching”—not to determine the corresponding structure.¹⁰ *Id.* at *2. And the ‘101

10. The defendant in *Aruba* had argued that it was improper to find structure in incorporated materials. *See Aruba Reconsideration Order*, 2014 WL 794423, at *2 (citing *Default Proof Credit Card Sys., Inc. v. Home*

patent, it held, made clear that “switching” meant toggling, not determining. Thus, it held that “electronic switch 13” was sufficient structure to perform the claimed function, and it reversed its previous holding that the claim was indefinite. *Id.* at *3.

AT&T argues that even if the California court were right in its conclusion that the “switching means” did not need to make a signal-strength assessment, it does not follow that there is no more determining to be done. *See* Docket No. 453, at 5. On the contrary, says AT&T, the switching means must still choose which path to pick before it can toggle between them. *See id.* But the specification need not be read this way. If the signal-strength assessment is made elsewhere—and we agree with the California court’s conclusion that it is—that assessment could

Depot U.S.A., Inc. (d/b/a The Home Depot), 412 F.3d 1291, 1301 (Fed. Cir. 2005) (“[M]aterial incorporated by reference cannot provide the corresponding structure necessary to satisfy the definiteness requirement for a means-plus-function clause.”)). The court rejected this objection, explaining that in interpreting a means-plus-function element, it must first determine the element’s function, and in *this* inquiry, it was permitted to consider all “the relevant sources of claim construction, especially the specification of a prior patent of with the Patent-in-Suit is a continuation-in-part.” *Id.* And once it determined what the function was, it was able to find the corresponding structure within the ‘491 patent’s specification. *Id.* at *3.

certainly be sufficient to induce, on its own, the electronic switch **13** to toggle between the binary communication paths. *See Aruba Reconsideration Order*, 2014 WL 793323, at *2 (“[O]nce the invention has monitored transmission frequency, made an rf signal strength assessment, and assessed whether signal strengthen has fallen below a threshold value, there is no more determining left to be performed At that point, it is plausible to conclude that the selection is merely to automatically assume[] a position dictated by the determinations made by [other components].”); *cf. DESA IP, LLC v. EML Techs., LLC*, 211 F. App’x 932, 938 (Fed. Cir. 2007) (construing “switching means” as an “electronic switch,” and finding that other structures “actuated” the switching means).

We therefore agree with all of the courts that have previously construed this term that it is definite and that its corresponding structure is “switching means **13**.”

III. Conclusion

Based on the foregoing reasoning, we construe the disputed claim terms as follows:

1. “network hub switching center”

Term: “network hub switching center” (‘101 Patent, claim 1; ‘491 Patent, claims 1,13, 17)

Construction: “a switching center that performs the switching functions needed for operation of the subscriber units in a group of cells that the switching center services”

2. Cellular Topography Terms

Term: “a set of cell subdivision sites partitioned from said base station geographic area and dispersed over the base station geographic area, each cell subdivision site being adapted for receiving-only low power digital messages transmitted from local subscriber units within range of the partitioned cell site areas”
(‘101 Patent, claim 1)

Construction: The transmission area of each radio transmitter of the base station includes a plurality of smaller response areas dispersed throughout, and each response area has a local remote receiver for receiving low power digital messages transmitted from local subscriber units within range of the local remote receiver.

Term: “a local remote receiver disposed within one

of a plurality of cell subdivision sites partitioned from said base station geographic area associated with said local base station repeater cell, said plurality of cell subdivision sites dispersed over said local base station geographic area, said local remote receiver being adapted to receive low power digital messages transmitted from said local subscriber units within range of said local receiver” (‘491 Patent, claim 1)

Construction: The transmission area of each radio transmitter of the base station repeater cell includes a plurality of smaller response areas dispersed throughout, and at least one response area has a local remote receiver for receiving low power digital messages transmitted from local subscriber units within range of the local remote receiver.

Term: “a set of stationary receive only terminals remote from the base station coupled by a communication link with the base station for conveying transmitted messages from subscri-

iber units in a subdivided portion of said geographic area in the vicinity of the receive only terminals to the base station” (‘101 Patent, claims 16, 17, 18)

Construction: The transmission area of each radio transmitter of the base station includes a plurality of smaller response areas dispersed throughout, and each response area has a stationary receiver located remote from the base station and coupled by a communication link to the base station for conveying transmitted messages from subscriber units in its respective response area to the base station.

Term: “a base station of defined geographic area for serving a set of said subscriber units, said area is subdivided into a plurality of zones, and receive only stations located in said zones for reception of transmissions from subscriber units located in the respective zones” (‘101 Patent, claim 20)

Construction: The transmission area of each radio transmitter of the base station includes a plurality of

smaller response areas, and each response area has a station for reception of transmissions from subscriber units located in its respective response area.

Term: “a cell site divided into a plurality of subdivided zones, . . . a cell site communication system including a digital transmitter for communication with individual identified subscriber units geographically located within the/said cell site, a set of receive only digital receivers positioned in said subdivided zones, each said digital receiver being coupled by a transmission link with the/said cell site communication system to relay received digital communications” (‘546 Patent, claim 14; ‘491 Patent, claim 12)

Construction: The radio transmission area of the digital transmitter of a cell site communication system includes a plurality of smaller response areas, and each response area has a digital receiver separate from the cell site communication system coupled by a transmi-

ssion link to the cell site communication system to relay digital communications received from subscriber units.

3. “synchronously related”

Term: “synchronously related” (‘101 Patent, claim 1; ‘546 Patent, claim 14; and ‘491 Patent, claims 1, 13)

Construction: Related in time.

4. “unable to communicate”

Term: “transferring . . . if said [at least one] local subscriber units are unable to directly communicate [/communicate directly] with said[/a] local base station repeater cell[/digital transmitter]” (‘491 Patent, claims 1, 12, 13)

Construction: “transferring . . . if said [at least one] local subscriber units are unable, for some reason other than the user intentionally disabling said unit, to directly communicate [/communicate directly] with said[/a] local base station repeater cell[/digital transmitter].” The system is binary, meaning the subscriber unit either directly communicates

with the base station repeater cell/digital transmitter or the modem. The “transferring function” of the modem is conditioned on whether the subscriber unit is unable to directly communicate with the local base station repeater cell.

5. “communicatively coupled”

Term: “a modem communicatively coupled to said local subscriber units and said local base station repeater cell[/digital transmitter/network hub switching center]” (‘491 Patent, claims 1, 12, 13)

Construction: “a modem is connected to the local subscriber units and the local base station repeater cell[/digital transmitter/network hub switching center] for the purpose of communications between the two”

6. “base station broadcast signal”

Term: “base station broadcast signal” (‘101 Patent, claim 1; ‘491 Patent, claim 1)

Construction: “a wireless signal transmitted by the base station to all subscriber units and/or receive-

ers”

7. “adapted for communicating”

Term: “said modem also adapted for communicating with said local base station repeater cell if communication there between is not otherwise prevented” (‘491 Patent, claim 13)

Construction: “capable of communicating”

8. “if receiving a signal” / “not receiving a signal”

Term: “if said subscriber unit is receiving a signal from said local base station repeater cell, performing the steps of . . .” / “if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of . . .” (‘491 Patent, claims 5, 17)

Construction: The method steps listed after ‘if said subscriber unit is not receiving a signal from said local base station repeater cell, performing the steps of’ are not performed if the subscriber unit is receiving a signal from said local base station repeater cell. Using the modem to communicate regardless of whether there is signal reception does not fall within the

scope of the claim.

9. “data processing means at the base station”

Term: “data processing means at the base station for assembling and retransmitting digital subscriber messages from the subscriber units via the satellite to the central station” (‘101 Patent, claims 16–18)\

Construction: Governed by § 112, ¶ 6. The function is: “assembling and re-transmitting digital subscriber messages from the subscriber units via the satellite to the central station.” The corresponding structure is: “Transmitters **1A**, **3A**, **2F** (fig. 1), **40** (fig. 2); Packet Builders **41–41A**, Price Packets **42**, Assemble **43**, Time **45**, and VSAT **44** (fig. 5), as described at 7:56–8:7; and statutory equivalents.”

10. “means in said base station for compensating”

Term: “means in said base unit for compensating for the time of propagation of messages between the different individual subscriber units and the base station data processing facilities” (‘101 Patent, claim 9)

Construction: Governed by § 112, ¶ 6. The function is: “compensating for the time of propagation of messages between the different individual subscriber units and the base station data processing facilities.” The corresponding structure is: “guard bands as depicted in figure 7B and described at ‘101 Patent, at 9:44–46, and statutory equivalents.”

11. “means for operating the base station and subscriber units to hand off”

Term: “means for operating the base station and subscriber units to hand-off a communication message for transmission over a path through a single one of said cell subdivision receive-only stations” (‘101 Patent, claim 13)

Construction: Governed by § 112, ¶ 6. The function is: “operating the base station and subscriber units to hand-off a communication message for transmission over a path through a single one of said cell subdivision receive only stations.” The corresponding structure is: “local area repeater station, cell base station,

cell (item 3 in figs. 1, 2, 6A, 7A); subscriber unit (item 4, 4', 4'', or 4''' in figs. 1, 2, 6A, 7A, 9A), including software control facilities or software (item 17 in fig. 1) and software control data processor 54 (fig. 9A); subscriber unit transceiver 50 and frequency control 57 (fig. 9A); the corresponding set-up algorithm to the extent disclosed in fig. 6B and the description at '101 Patent, at 8:8–9:19 corresponding thereto; subscriber unit transmission frequencies assigned to different remote receivers; and statutory equivalents.”

12. “reception for receiving and processing data messages”

Term: “reception for receiving and processing data messages from said set of local subscriber units” ('491 Patent, claim 1)

Construction: Not governed by § 112, ¶ 6. No further construction necessary.

13. “switching means”

Term: “switching means for selecting a communication path” ('491 Patent, claims 1, 13)

Construction: Governed by § 112, ¶ 6. The function is “selec-

ting a communications path.” The corresponding structure is: “electronic switch **13** and statutory equivalents.”

IT IS SO ORDERED.

In San Juan, Puerto Rico, this 25th day of April, 2014.

S/ SILVIA CARREÑO-COLL

UNITED STATES MAGISTRATE JUDGE