THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

BARKAN WIRELESS ACCESS TECHNOLOGIES, L.P.,	§	
	§	
v.	§	CASE NO. 2:16-CV-293-JRG-RSP
	§	
CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS	§	

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

On May 4, 2017, the Court held a hearing to determine the proper construction of disputed claim terms in United States Patents No. 8,559,369 and 9,042,306. Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing (Dkt. Nos. 45, 47 & 52),[1] having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

[1] Citations to documents (such as the parties' briefs and exhibits) in this Claim Construction Memorandum and Order refer to the page numbers of the original documents rather than the page numbers assigned by the Court's electronic docket unless otherwise indicated.

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I. BACKGROUND

Plaintiff Barkan Wireless Access Technologies, L.P. ("Plaintiff" or "Barkan") has alleged infringement of United States Patents No. 8,559,369 ("the '369 Patent") and 9,042,306 ("the '306 Patent") (collectively, the "patents-in-suit," sometimes referred to as the "Asserted Patents") by Defendant Cellco Partnership d/b/a Verizon Wireless ("Defendant" or "Verizon"). Plaintiff submits that "[t]he patents include various claims directed to mobile devices (e.g., mobile phones), cellular network systems, and methods of providing or using mobile hotspot capabilities." Dkt. No. 45 at 1.

The '369 Patent and the '306 Patent are both titled "Wireless Internet System and Method." The '369 Patent issued on October 15, 2013, and bears an earliest priority date of February 22, 2006. The '306 Patent is a continuation of the '369 Patent, and therefore the patents-in-suit share a common specification. The Abstracts of the '369 Patent and the '306 Patent are also the same and state:

> A method for providing a wireless Internet connection to WiFi-enabled devices (STAs) comprising: wirelessly connecting a first STA to the Internet through a first AP with a first SSID; remaining connected to the first Access Point (AP), the first STA creates a software-based wireless AP with a second SSID for wirelessly connecting other STAs to the Internet through the first STA. A software module running on the first STA allows a second STA a wide access to the Internet only if the second STA has a copy of the software module running installed and active therein. A method for configuring STAs to connect to a wireless network, comprising: a customer first connects a STA by wire to its network; a software on the STA copies to the STA the security information gained through the wired connection, thus setting the security parameters for the STA.

In their briefing, the parties have cited primarily the specification of the '306 Patent.

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties' arguments and facilitating

discussion. Those preliminary constructions are set forth below within the discussion for each term.

II. LEGAL PRINCIPLES

"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*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). "In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva*, 135 S. Ct. at 841 (citation omitted). "In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the 'evidentiary underpinnings' of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal." *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*,

415 F.3d at 1312–13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979 (en banc)). "[T]he 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 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris*

Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

III. THE PARTIES' STIPULATED TERMS

The parties reached agreement on constructions as stated in their February 14, 2017 Patent Rule 4-3 Joint Claim Construction and Pre-Hearing Statement (Dkt. No. 41 at 1) and their

April 20, 2017 Joint Patent Rule 4-5(d) Claim Construction Chart (Dkt. No. 53, Ex. A at 2). Those agreements are set forth in Appendix A to the present Claim Construction Memorandum and Order.

IV. CONSTRUCTION OF DISPUTED TERMS

A. "a proxy server . . . such that the proxy server acts as a proxy of the given device," "a proxy server connected to the IP based network and adapted to act as a proxy of at least a subset of computing devices," and "[the/a] proxy server, wherein the proxy server acts as a proxy of the [second/third] computing device"

Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
No construction necessary beyond construction of components: (1) proxy server; and (2) computing device. The remainder of the phrases should be interpreted according to their plain and ordinary meaning. Proxy server: "a server (a computer system or an application) that acts as an intermediary for requests from clients seeking resources from other servers" Otherwise: "a proxy server . . . such that the proxy server acts as a proxy of the given device" should be construed as "a proxy server . . . such that the proxy server acts as a proxy of one of the other wireless enabled computing devices" "a proxy server connected to the IP based network and adapted to act as a proxy of at least a subset of computing devices" should be construed as "a proxy server connected to the IP based network and acts as a proxy for one or more computing devices" "[the/a] proxy server, wherein the proxy server acts as a proxy of the [second/third] computing device" should be construed under its plain an[d] ordinary meaning (except for the "proxy server" term, which should be construed using Plaintiff's proposal above)	"an intermediate server that accepts requests from the device and acts on behalf of the device by making the requests appear to originate from the intermediate server, rather than directly from the device"

Dkt. No. 45 at 2; Dkt. No. 47 at 4; Dkt. No. 53, Ex. A at 2–4. The parties submit that these terms appear in Claims 1, 9, 16, 17, 19, and 43 of the '306 Patent and Claim 1 of the '369 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "proxy server" means "an intermediate server that accepts requests from the device and acts on behalf of the device."

(1) The Parties' Positions

Plaintiff argues that Defendant's proposal should be rejected because "[t]he intrinsic record does not require that a 'proxy server' make requests that appear to originate from an intermediate server." Dkt. No. 45 at 3.

Defendant responds that "the established meaning of a 'proxy server . . . act[ing] as a proxy' at the time of invention is a server that protects privacy by hiding the origin of a request, and this is how the specification uses the term." Dkt. No. 47 at 4–5. Defendant argues that "[Plaintiff's] construction reduces the proxy server to a mere 'intermediary' server, ignoring the term's established meaning and excluding the claimed function of 'acting as a proxy.'" *Id.* at 7.

Plaintiff replies that "[t]he proxy server may (but need not) replace the IP address of the requesting entity according to claim 24 of the '306 patent." Dkt. No. 52 at 2. Further, Plaintiff argues, "even where replacement of the IP address occurs, replacing the IP address does not prevent the data packets from containing other information that identifies the second computing device." *Id.*

At the May 4, 2017 hearing, Plaintiff argued that the claims set forth no need for a proxy server to provide a client with anonymity. Defendant responded that the specification emphasizes privacy as "a vital aspect of the new technology" and as "important." *See* '306 Patent at 6:35, 9:40–41, 10:20–25 & 14:36.

(2) Analysis

Claim 16 of the '306 Patent, for example, recites in relevant part:

16. A system comprising:

a first wireless access point (AP) connected to an IP based network, the first wireless AP having a first AP Identification (APID);

a proxy server connected to the IP based network and adapted to act as a proxy of at least a subset of computing devices that connect via the first wireless AP; . . . .

Plaintiff has argued that dependent Claim 23 of the '306 Patent demonstrates that "a proxy server may simply forward data packets without making the requests appear to originate from an intermediate server" (Dkt. No. 45 at 4), but Plaintiff has not shown that the "proxy server" recited in independent Claim 16 need have only the functionality set forth in dependent Claim 23.

Nonetheless, Plaintiff has cited dependent Claim 24 of the '306 Patent as well as Claim 23, and Claims 23 and 24 recite (emphasis added):

23. The system of claim 16 wherein the proxy server allocates the second public IP address for the second computing device and *forwards* data packets destined for the second public IP address to a current IP address associated with the second computing device, wherein the current IP address is distinct from the first public IP address and the second public IP address.

24. The system of claim 23 wherein the proxy server *replaces the current IP address with the second public IP address* in data packets destined for other servers on the IP based network, wherein the data packets are tunneled from the second computing device, through the first computing device, through the first AP, through the IP network, to the proxy server.

The recital of such "replac[ing]" in a dependent claim weighs at least somewhat against imposing such a limitation in the independent claim. *See Phillips*, 415 F.3d at 1315 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

Turning to the specification, several disclosures refer to a proxy forwarding packets and to a proxy protecting privacy:

> In another embodiment, a remote site 50 with a fast Internet connection acts as a proxy of STA 14. Incoming and outgoing packets are forwarded between STA 14 and remote site 50.
>
> * * *
>
> . . . STA 13's privacy is protected by tunneling its sensitive traffic to a trusted network site 50, and STA 13 accesses the internet through its tunnel to the trusted network site 50, which acts as a proxy of STA 13.
>
> * * *
>
> To protect the privacy of STA while it is surfing, its traffic can be tunneled to a trusted network site 50, which acts as its proxy.

'306 Patent at 13:23–25, 14:49–52 & 15:1–3; *see id.* at 6:49–53 (similar). Plaintiff has also cited a disclosure that analogizes using a "proxy" to using "mobile IP":

> In case STA 11 wishes to communicate with a node that is not aware of the novel network, it can do so through a node that is aware of the network. For example, TN 41 can serve as a *proxy* for STA 11 (in a similar way to mobile IP). The node that is not aware of the network communicates with TN 41. TN 41 forwards the information to STA 11. TN 41 can allocate an IP address (perhaps using NAT, or allocate ports using its own IP address) that will serve STA 11.

Id. at 29:32–39 (emphasis added). The specification describes "Mobile IP" as using a "care-of IP address":

> One solution to this problem is provided by the Mobile IP standard (see RFC 2002): in this solution the STA updates a server with its current IP address, every time that the IP address changes. As a preparation for roaming, the server allocates to the STA (in addition to the STA's current IP address) an IP address that remains fixed, even when the real IP address of the STA changes. This fixed IP address is also known as a "care of" address. From this moment on, the STA keeps the server posted of the real IP address of the STA, and the STA can use (in its communications with the rest of the Internet) the "care of" address (or its home address) as if it was its own fixed address.
>
> Any IP data packet that is sent to the care-of IP address is tunneled by the Mobile-IP server to the current[] IP address of the STA. For packets originating from the STA to the Internet, the STA can tunnel the packets to the Mobile-IP server, which replaces the IP address with the care-of address. However, many times the STA can simply write its care-of IP address as the source address of the IP data

> packet, as many times, the source address of IP packets is not checked what-so-ever in the course of routing the IP data packet in the Internet.

Id. at 4:13–33. The disclosure regarding Mobile IP thus does not require making requests appear to originate from the intermediate server. This passage discloses that "[f]or packets originating from the STA to the Internet, the STA can tunnel the packets to the Mobile-IP server, which *replaces the IP address with the care-of address*," not the IP address of the Mobile-IP server. *Id.* at 4:27–29 (emphasis added). Indeed, the disclosed purpose of Mobile IP is to facilitate roaming, not to provide anonymity.

Thus, the specification indicates that proxy servers can be useful not only for providing privacy but also for keeping track of a mobile device and also perhaps for improving handovers. *See id.* at 4:13–33 & 29:32–39 (quoted above); *see also id.* at 29:57–30:17; *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 908 (Fed. Cir. 2004) ("The fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives.").

On balance, Defendant has not demonstrated any sufficient basis in the specification for requiring that a "proxy server" must make requests appear to originate from the intermediate server rather than directly from the device.

As to extrinsic evidence, Plaintiff has submitted a Wikipedia entry for the term "proxy server" (Dkt. No. 45 at Ex. E), but Plaintiff has not demonstrated that this evidence is contemporaneous with the filing of the patents-in-suit or is otherwise relevant. *See Markman*, 52 F.3d at 986 ("[T]he focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean."). Although Plaintiff submits that the Wikipedia entry cites a 1994 document (Dkt. No. 52 at 3), the evidence that Plaintiff is

attempting to submit is the Wikipedia entry, not the 1994 document cited therein. *See* Dkt. No. 45 at Ex. C.[2]

Defendant has submitted an excerpt of a textbook that discusses "proxy service firewalls" that "act as go-betweens for the network and the Internet" and that "replac[e] the IP address on the outgoing packets with their own address":

> This type of firewall has a set of rules that the packets must pass to get in or out of the network. They hide the internal addresses from the outside world and don't allow the computers on the network to directly access the Internet. They do this by receiving all packets and replacing the IP address on the outgoing packets with their own address, and then change the address of the packets coming in to the destination address.

Dkt. No. 47, Ex. 3, Diane Barrett, et al., *Computer Networking Illuminated* 554 (2005). Of note, this passage refers to a "firewall," not a proxy server.

Defendant has also submitted a technical dictionary definition of "proxy" as follows:

> 1. A proxy is an intermediate application program that acts as both a client and a server. A proxy runs on a gateway that relays packets between a [*sic*] other trusted clients and an untrusted host, perhaps making protocol translations in the process. A proxy accepts requests from the trusted client for specific Internet services and then acts on behalf of this client (in other words, serves acts [*sic*] as proxy for this client) by establishing a connection for the requested service. The request appears to originate from the gateway running the proxy, rather directly than [*sic*, than directly] from the client. All application-level gateways use application-specific proxies (that is, modified versions of specific TCP/IP services). Most circuit-level gateways use pipe, or generic, proxies that offer the same forwarding service but support most TCP/IP services. A "transparent proxy" makes no modifications to a request from an origin client other than what absolutely is required to identification and authentication. A "non-transparent

[2] Plaintiff has also cited a District of Delaware construction of the term "proxy server" in patents unrelated to the patents-in-suit. *See SRI Int'l, Inc. v. Internet Security Sys., Inc., et al.*, No. 1:04-CV-01199-SLR-MPT, 2006 WL 2949305, at *3 (D. Del. Oct. 17, 2006) ("A server that mediates communication between a client application, such as a Web browser, and a real server. It handles requests to the real server to see if it can fulfill the requests itself; if not, it forwards the requests to the real server. The proxy server can serve as a firewall component."). Plaintiff has not demonstrated that this construction in unrelated patents is persuasive here. In particular, the ruling cited by Plaintiff does not include any accompanying discussion but rather merely sets forth the construction. *See id.*

> proxy" modifies requests from the origin client and/or responses from the origin server in order to provide additional services. See Client, Dual-Homed Gateway, Proxy Server, and Server.
>
> 2. A software agent that acts on behalf of a user. Also, the mechanism whereby one system "fronts for" another system in responding to protocol requests. Proxy systems are used in network management to avoid having to implement full protocol stacks in simple devices, such as modems. In SNMP, a proxy is a device which performs SNMP functionality for a separate managed device. The amount of responsibility may vary. Proxy ARPing refers to address recognition for another unit with SNMP capability, while a proxy agent provides an external SNMP agent for a managed device which does not have SNMP capability.

Id., Ex. 2, *Newton's Telecom Dictionary* 677 (21st ed. 2005). Although this definition states that a "request appears to originate from the gateway running the proxy" rather than from the client, this definition also cites an accompanying definition of "Proxy Server" that states as follows:

> A proxy is an application running on a gateway that relays packets between a trusted client and an untrusted host. A proxy server is software that runs on a PC and is basically a corporate telephone system for the Internet. Here's what I mean: A telephone system's main job is to allow a large number of people access to a few number of phone lines. Example: we have 100 people in our firm. But we have only 30 outside phone lines. To grab an outside phone line you dial 9 and then dial your number. When the 31st person tries to grab on outside line, he gets a busy. If this happens a lot, we install more phone lines. The reason we have fewer phone lines than people is clearly economic. We save money that way. All phone systems work that way. A proxy server performs the same function. Let's say your company is connected to the Internet on a single high-speed digital line, e.g. a T-1. The provider of this line gives you a certain number of distinct and different IP addresses which you can use—just like our phone system gives us 30 distinct and different phone lines. Since most firms will have fewer IP addresses than they have people wanting to use the Internet, they'll need a proxy server to act like a phone system allocating precious IP addresses as the people want them. This process is called address translation. A proxy server is typically also a firewall—that means it keeps unwanted intrusion from the Internet getting into your corporate network. Thus, the firewall's IP addresses function as a [*sic*] proxy addresses. Proxy servers provide extra security by replacing calls to insecure systems' subroutines. Proxy servers also allow companies to provide World Wide Web access to selected people, restricting some, allowing others through the firewall—just like a phone system restricts some people from making long distance calls, etc. Acting as behind-the-scenes directors, proxy servers can also help distribute processing load and provide an added layer of security. A proxy server could also cache some of the material from popular Web sites, saving access time and phone monies.

> In short, a proxy server lets your employees access the Internet right from their desktop PCs over a shared, managed, and secure connection to the Internet. No more running modems to desktops—a slow, expensive solution. That connection to the Net can be "nailed up," like a T-1 or equivalent, or it can even be an on-demand connection. That is, if there is no traffic moving over the connection for a period of time, a proxy server can turn off the connection so your company isn't wasting dollars on an Internet connection not being used. And the proxy would then re-establish the connection immediately when a user tried to access a web site.
>
> According to Microsoft, a proxy server has the following advantages:
> 1. It accelerates access to the Internet with intelligent caching—no more World Wide Wait!
> 2. It protects your Intranet in ways a packet filtering router can not.
> 3. It blocks access to undesirable sites and provides other easy-to-use management features.
> 4. It saves money by consolidating and making the most of your Internet connection.
>
> See also Router-based Firewall and Dual-Homed Gateway.

Id. This definition reinforces the above-cited intrinsic evidence that a proxy server can provide many different functions.

As a whole, the extrinsic evidence submitted by Defendant is not inconsistent with finding that a "proxy server" may merely accept requests from a client and act on behalf of the client. Defendant has not established that "replacing the IP address on the outgoing packets with their own address"[3] is an essential feature of a "proxy server."

The Court therefore hereby construes **"proxy server"** to mean **"an intermediate server that accepts requests from a device and acts on behalf of the device."**

[3] Dkt. No. 47, Ex. 3, Diane Barrett, et al., *Computer Networking Illuminated* 554 (2005) (quoted above).

B. "tunnel[] data traffic"

Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
"wrap or encapsulate data traffic"	"create a secure path for data traffic between two end points" Alternatively: "create a secure path for data traffic between the given device and the proxy server"

Dkt. No. 45 at 5; Dkt. No. 47 at 9 & 12; Dkt. No. 53, Ex. A at 4. The parties submit that this term appears in Claims 1, 16, 17, 24, 26, 34, 35, 43, 48, 51, 60, and 61 of the '306 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "encapsulate data traffic."

(1) The Parties' Positions

Plaintiff argues that "[t]he claim language supports that the tunneling of data traffic, as that term is used in the claims, does not necessarily need to be accompanied by a secure path, as the claim separately recites that the data traffic is secure." Dkt. No. 45 at 5. Further, Plaintiff argues, "[t]he claim language also reveals that the tunneling of data traffic, as that term is used in the claims, need not occur between two end points." *Id.* at 6.

Defendant responds that surrounding claim language, as well as disclosures in the specification, demonstrate that the disputed term refers to data security, not to wrapping or encapsulating. Dkt. No. 47 at 9.

Plaintiff replies by reiterating that "the claim separately recites that the data traffic is secure." Dkt. No. 52 at 4 (citing '306 Patent at Claim 1). Plaintiff urges also that Defendant's proposal should be rejected because "the secure path is smaller than the tunnel." Dkt. No. 52 at 4.

At the May 4, 2017 hearing, Defendant argued as to Claim 1 of the '306 Patent, for example, that the "tunnel" forms a secure path from the "given device" to the proxy server. Plaintiff responded that the claim language itself recites only that data traffic is "secure from said computing device and first AP," which Plaintiff argued means that the "secure" limitation does not include the "given device" but rather begins "from" the computing device and extends to the proxy server. As to whether "tunneling" requires creating a secure path, Defendant argued that although there are multiple types of tunneling, the claims recite that the type of tunneling claimed is tunneling for security. Defendant also noted that some of the Figures in the patents-in-suit refer to encryption.

(2) Analysis

As a threshold matter, Plaintiff's argument that tunneling need not be from one "end point" to another "end point" is moot in light of Defendant's above-noted alternative proposed construction (submitted in Defendant's response brief). *See* Dkt. No. 47 at 11–12.

Claim 16 of the '306 Patent, for example, recites (emphasis added):

> 16. A system comprising:
>
> a first wireless access point (AP) connected to an IP based network, the first wireless AP having a first AP Identification (APID);
>
> a proxy server connected to the IP based network and adapted to act as a proxy of at least a subset of computing devices that connect via the first wireless AP; and
>
> a first computing device having a user interface, wherein the first computing device is adapted to:
>
> wirelessly connect to the IP based network via the first wireless AP;
>
> wirelessly communicate with other wireless enabled computing devices;
>
> enable a user of the first computing device to interact, through the user interface, with destinations over the IP based network, through the first wireless AP, using a first public IP address associated with the first computing device;
>
> provide a second computing device of the other wireless enabled computing devices with access to the IP based network by causing the first computing device to serve the second computing device as a second AP having a second APID, distinct from the first APID, and provide the second computing device access to the IP based network via the first AP; and

> *tunnel data traffic* from the second computing device, through the first computing device, through the first AP, through the IP network, to the proxy server, wherein the proxy server acts as a proxy of the second computing device and *the data traffic is secure* from the first computing device and the first AP and the second computing device operates on the IP based network using a second public IP address distinct from the first public IP address, with the second public IP address associated with the second computing device.

The separately recited limitation that "the data traffic is secure" weighs against Defendant's proposal that the term "tunnel data traffic" requires creating a "secure path." *See, e.g., Primos, Inc. v. Hunter's Specialties, Inc.*, 451 F.3d 841, 848 (Fed. Cir. 2006) ("[T]he terms 'engaging' and 'sealing' are both expressly recited in the claim and therefore 'engaging' cannot mean the same thing as 'sealing'; if it did, one of the terms would be superfluous.").

In some instances, the specification refers to using tunneling to provide security or to protect privacy:

> Another important issue is the security of the system. A Laptop might agree to act as an Aps [*sic*], but it does not agree to allow other STAs to access its inner network (i.e., the laptop owner wishes to allows these STAs to access the internet through its private network but does not allow them to access computers on its private network[])]. Another security-concern is that the new STAs may desire to prevent the first STA from tapping into their Communications, i.e., they do not want the first STA to be able to tap into communications that the first STA relays. The current disclosure provides novel method to deal with these two problems.
>
> First, external STAs (new STAs) are not allowed access to computers in the inner network by having the first STA drop data packets from the external STAs that are designated to local IP addresses on the inner network. Second, a new STA's privacy is protected by *tunneling* its sensitive traffic to a trusted network site, and the new site [*sic*] accesses the Internet through his *tunnel* to the trusted network site which acts as a proxy for it.
>
> * * *
>
> To protect the privacy of STA while it is surfing, its traffic can be *tunneled* to a trusted network site 50, which acts as its proxy. The network site can be replaced by simply *tunneling* the connection to another node in the network, and switching the network node once in a while. The access to the remote nodes is made without identifying the STA, but only proving that it belongs to the group of STAs, thus, its privacy is preserved.

’306 Patent at 6:35–53 & 15:1–8 (emphasis added); *see id.* at 14:35–64 (similar); *see also id.* at 16:26–27 (“Preserve privacy using tunneling 485 to a trusted network site for sensitive traffic”).

Nonetheless, Defendant has not shown that the specification uses the term “tunnel” necessarily with reference to creating a secure path. Instead, creating a secure path is a specific feature of particular embodiments that should not be imported into the claims. *See Phillips*, 415 F.3d at 1323.

As to extrinsic evidence, the parties have submitted competing technical dictionary definitions (cited below). In general, “heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.” *See Phillips*, 415 F.3d at 1321. Nonetheless, technical dictionaries in particular may be of assistance. *See id.* at 1318 (“We have especially noted the help that technical dictionaries may provide to a court to better understand the underlying technology and the way in which one of skill in the art might use the claim terms.”) (citation and internal quotation marks omitted).

Plaintiff has submitted a technical dictionary definition of “tunnel” that refers to encapsulating and that does not refer to a secure path:

> To encapsulate or wrap a packet or a message from one protocol in the packet for another. The wrapped packet is then transmitted over a network via the protocol of the wrapper. This method of packet transmission is used to avoid protocol restrictions.

Dkt. No. 45, Ex. F, *Microsoft Computer Dictionary* 532 (5th ed. 2002).

Defendant has submitted a competing definition of “tunneling” that refers to providing a secure path:

> 2. As an Internet term, tunneling means to provide a secure, temporary path over the Internet, or other IP-based network, in a VPN (Virtual Private Network)

> scenario. In this context, tunneling is the process of encapsulating an encrypted data packet in an IP packet for secure transmission across an inherently insecure IP network, such as the Internet.

Dkt. No. 47, Ex. 2, *Newton's Telecom Dictionary* 677 (21st ed. 2005).

On balance, the technical dictionary definition submitted by Defendant pertains to a specific secure "VPN" context that does not warrant importing a "secure path" limitation into the meaning of "tunnel." Further, as quoted above in Claim 16 of the '306 Patent, for example, the claims separately recite limitations as to how "the data traffic is secure."[4]

Because the above-discussed analysis relies in part upon the recital that "the data traffic is secure," and because the parties disputed the meaning of this language at the May 4, 2017 hearing, the Court here resolves the dispute. At the May 4, 2017 hearing, the parties addressed Claim 1 of the '306 Patent, which recites in relevant part (emphasis added):

> . . .
> (2) tunnel data traffic from the given device, through said computing device, through the first AP, through the IP network, to a proxy server, such that the proxy server acts as a proxy of the given device and *the data traffic is secure from said computing device and first AP* and the given device operates on the network using a second public IP address distinct from the first public IP address, with the second public IP address associated with the given device.

Plaintiff argued that the "secure" limitation does not apply to data traffic from the given device to the computing device. Plaintiff's interpretation of "secure from" as setting forth a starting point is not supported by the context in which this language appears. Notably, the limitation "the data traffic is secure *from* said computing device and first AP" is not followed by

[4] The parties have also discussed *Alcatel Internetworking, Inc. v. Cisco Systems, Inc.*, which construed a "tunnel" as a "communication path between a remote client and a local network through an intermediary." No. CV 00-05799, 2002 WL 34454788, at *59–*60 (C.D. Cal. Aug. 29, 2002). The parties have not shown that this finding or the accompanying analysis by another court as to an unrelated patent is binding or persuasive here. Also of note, the term at issue in *Alcatel Internetworking* was "tunnel" as a noun rather than as a verb. *See id.*

any recitation of where the data traffic is secure *to*. Thus, a better reading of this usage of "secure from" is that the data traffic passing from the given device to the proxy server is secure "from" the computing device and the first AP in the sense that the data cannot be accessed by the computing device or the first AP. Substantially the same analysis applies to all of the "data traffic is secure" limitations in the independent claims of the '306 Patent.

The Court thus hereby construes **"tunnel[] data traffic"** to mean **"encapsulate data traffic."**

C. "access point"

Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
"a device that connects a computer to a network"	"WiFi public hotspots"

Dkt. No. 45 at 7; Dkt. No. 47 at 12; Dkt. No. 53, Ex. A at 4. The parties submit that this term appears in Claims 1, 4, 5, 7, 8, 16, 17, 22, 24–26, 28–36, 43, 46, 48–50, 52, 53, and 62 of the '306 Patent and Claims 1 and 3 of the '369 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "WiFi public hotspot."

(1) The Parties' Positions

Plaintiff argues that the specification refers to "WiFi hotspots" as well as "cellular cells." Dkt. No. 45 at 7–8 (citing '306 Patent at 2:56–59 & 5:16–26).

Defendant responds that the specification sets forth a lexicography. Dkt. No. 47 at 12 (citing '306 Patent at 1:30–33 & 2:19–22).

Plaintiff replies that "[t]he parenthetical [cited by Defendant] explains that WiFi public hotspots can be one species of access points." Dkt. No. 52 at 6. Plaintiff argues that this is

apparent from the plain meaning of "access point," and Plaintiff also cites several dependent claims. *Id.* at 6–7.

At the May 4, 2017 hearing, Plaintiff reiterated the arguments set forth in its briefing. Plaintiff emphasized its arguments that the specification discloses two different types access points, WiFi and cellular. Defendant responded that Plaintiff cannot identify any disclosure that contradicts the lexicography. Also, Defendant submitted that the dependent claims cited by Plaintiff did not appear in the original application but instead were added during prosecution several years later.

(2) Analysis

"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." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)).

On one hand, the specification refers to a "WiFi AP," which could be read as implying that not all "APs" are "WiFi." '306 Patent at 2:36 & 5:35; *cf. Phillips*, 415 F.3d at 1314 ("[T]he context in which a term is used in the asserted claim can be highly instructive. To take a simple example, the claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel."). The specification also discusses cellular communication networks. *See, e.g.*, '306 Patent at 5:27–42.

On the other hand, the specification twice discloses:

> Currently, there is a growing number of WiFi public hotspots (or Access Points—"AP"). These APs allow WiFi-enabled devices (which we refer to as STA) that are in their coverage area to [c]onnect to the interne[t].

'306 Patent at 1:30–33 & 2:19–22; '369 Patent at 1:26–29 & 2:14–17.

This disclosure explicitly defines the term "Access Points" to mean "WiFi public hotspots." Although the parenthetical uses the word "or," the sentence that follows (reproduced above) refers to "[t]hese APs" providing a WiFi connection for "WiFi-enabled devices" that are "refer[red] to as STA," thus reinforcing that the patentee here used "or" as part of a lexicography. *See, e.g., Pause Tech., LLC v. TiVo, Inc.*, 419 F.3d 1326, 1335 (Fed. Cir. 2005) (as to disclosure of "fixed duration *or* 'time window,'" finding that "the use of the quotation marks and the context of the surrounding text shows that this phrase does not specify two alternative time intervals but simply describes in different words *the same* interval") (emphasis added). Also, as Defendant emphasized at the May 4, 2017 hearing, it is noteworthy that the above-reproduced disclosure capitalizes the words "Access Points." Thus, the above-reproduced disclosure uses "AP" as an abbreviation for "WiFi public hotspots," and the specification uses the abbreviations "AP" and "STA" extensively.

Plaintiff has noted that a connection to an AP may be a wired connection. '306 Patent at 11:42–44. Plaintiff has not shown, however, that wired and WiFi connections are mutually exclusive. Further, immediately following this disclosure of a wired connection to "AP 10," the specification refers to a wireless connection to "AP 10," which is thus consistent with an "AP" having wireless capability. *Id.* at 11:42–46.

Plaintiff has also noted a disclosure that refers to "APs (or the cellular cells)." *Id.* at 2:58. Read in context, however, the parenthetical serves to identify "cellular cells" as an alternative rather than as being within the scope of "APs":

> The concept of handover is taken from cellular networks. Handovers usually work well *in managed networks, such as cellular networks, campuses, or office environment*, where the entire network is usually owned by the same operator.
>
> The network operator in many cases chooses to add cells where coverage or capacity are needed. *In managed networks, the APs (or the cellular cells)* are

> synchronized and communicate with each other through a backbone, and are usually controlled by some other network entity (e.g., BSC—base station controller in cellular systems).

'306 Patent at 2:52–61 (emphasis added). Likewise, Plaintiff's citation of disclosures regarding WiFi-enabled cellular phones is unpersuasive. *See id.* at 2:41–42 ("Another approach is to have a handset which supports both WiFi and Cellular, and handover the conversation from WiFi to Cellular.").

Plaintiff's other submissions, namely a technical dictionary definition and constructions of "access point" in unrelated cases, are unpersuasive and do not disrupt the above-discussed lexicography set forth in the patents-in-suit. *See* Dkt. No. 45, Ex. G, *Newton's Telecom Dictionary* 86 (23d ed. 2007) (defining "access point" as: "Basically a device that connects a computer to a network"); *see also Agere Sys., Inc. v. Broadcom Corp.*, No. 03-3138, 2004 WL 1737495, at *4 (E.D. Pa. Aug. 2, 2004) (construing "access point" as "an element in a network that provides access to the network infrastructure"); *Univ. of Fl. Research Found., Inc. v. Motorola Mobility LLC*, 3 F. Supp. 3d 1374, 1378 (S.D. Fla. Feb. 19, 2014) (construing "wireless access point" as "[d]evice that communicates a wireless protocol signal wirelessly"). That is, even though the term "access point" may have a broader meaning outside of the patents-in-suit, the above-cited lexicography applies here. *See Phillips*, 415 F.3d at 1316 ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs.").[5]

[5] Plaintiff has cited deposition testimony by one of Defendant's engineers that an "eNB" in a cellular network could be considered an "access point" (Dkt. No. 45, Ex. D, Jan. 13, 2017 McGee dep. at 12:11–13:15), but Plaintiff has not demonstrated that this testimony has any persuasive value as to how the term "access point" is used in the patents-in-suit.

Finally, Plaintiff has cited various dependent claims that refer to "cellular":

> Here, the dependent claims make clear that an access point is not restricted to WiFi. Claims 5, 28, and 50 of the '306 patent state that the "AP is a cellular cell." Claims 7, 30, and 52 of the '306 patent require the first and second APs to be two different wireless protocols (i.e., cannot both be WiFi). Claims 4, 27, and 49 require that the access point is included in a cellular telephone network. Claims 6, 29, and 51 require that the AP module is controlled by a network entity in a cellular system. "When claim language has as plain a meaning on an issue as the language does here, leaving no genuine uncertainties on interpretive questions relevant to the case, it is particularly difficult to conclude that the specification reasonably supports a different meaning." *Straight Path IP Grp., Inc. v. Sipnet EU*, 806 F.3d 1356, 1361 (Fed. Cir. 2015).

Dkt. No. 52 at 6–7. For example, dependent Claims 4–6 of the '306 Patent recite:

> 4. The computing device of claim 1 wherein the first wireless AP is included in a cellular telephone network.
>
> 5. The computing device of claim 4 wherein the first wireless AP is a cellular cell.
>
> 6. The computing device of claim 1 wherein the AP module is controlled by a network entity in a cellular system.

Plaintiff thus argues that because the dependent claims must be within the scope of the claims from which they depend, the recital of "cellular" in the dependent claims demonstrates that the term "access point" must encompass cellular access points.[6]

On balance, the presence of dependent claims that refer to "cellular" does not outweigh the above-discussed lexicography set forth in the specification. *Cf. Cornell Univ. v. Illumina, Inc.*, No. CV 10-433, 2017 WL 89165, at *8 (D. Del. Jan. 10, 2017) (Stark, J.) (finding that "the claim-differentiation presumption is overcome by the patent's definition of" the term at issue) (citing *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) ("any presumption created by the doctrine of claim differentiation will be overcome by a

[6] The parties have agreed that the term "cellular cells" in Claims 5, 28, and 50 of the '306 Patent means "a base station used in a cellular system." Dkt. No. 41 at 1; Dkt. No. 53, Ex. A at 2.

contrary construction dictated by the written description or prosecution history") (citation and internal quotation marks omitted); citing *Phillips*, 415 F.3d at 1316 (quoted above)). This is particularly the case where, as here, the dependent claims at issue were added very late in the prosecution of the patent.

The Court therefore hereby construes **"access point"** to mean **"WiFi public hotspot."**

D. "AP module adapted to: (1) provide a given device of the other wireless enabled computing devices with access to the IP based network by causing said computing device to serve the given device as a second AP having a second APID, distinct from the first APID, and provide the given device access to the network via the first AP; and (2) tunnel data traffic from the given device, through said computing device, through the first AP, through the IP network, to a proxy server, such that the proxy server acts as a proxy of the given device and the data traffic is secure from said computing device and first AP and the given device operates on the network [with/using] a [second] public IP address distinct from the first public IP address[, with the second public IP address associated with the given device]"

Plaintiff's Proposed Construction	**Defendant's**
Not means-plus-function. No construction necessary beyond construction of components: (1) access point ("AP"); (2) wireless; (3) computing device; (4) tunnel; (5) proxy server. If the Court determines that a construction is necessary, then Plaintiff proposes "a component within another device that enables the device to operate as an access point". Alternatively, if the Court determines that the claim term is subject to § 112(6): Function: (1) provide a given device of the other wireless enabled computing devices with access to the IP based network by causing said computing device to serve the given device as a second AP having a second APID, distinct from the first APID, and provide the given device access to the network via the first AP; and (2) tunnel data traffic from the given device, through said computing device, through the first AP, through the IP network, to a proxy server, such that the proxy server acts as a proxy of the given device and the data traffic is secure from said computing device and first AP and the given device operates on the network [with/using] a [second] public IP address distinct from the first public IP address[, with the second public IP address associated with the given device] Structure: (1) Network Address Translation ("NAT") server; and (2) Dynamic Host Configuration Protocol ("DHCP") server. Terms used in Plaintiff's proposed structure: (1) "wireless network interface card ('NIC')" should be construed as "electronic circuitry for the purpose of connecting a computing device to a wireless network". (2) "DHCP server" should be construed as "a server that assigns a temporary IP address to a host automatically when the host connects to the network"	The term is governed by 35 U.S.C. § 112(6). The term is invalid as indefinite because the specification does not disclose sufficient structure to perform the claimed functions. In the event the term is not deemed to be indefinite, the function is expressly stated in the claim, and the corresponding structure must include, at a minimum, the software module described in the '306 patent at col. 16, ll. 42-48 and the algorithm in Figs. 7 (steps 41-472); 16 (steps 491, 492) and 17 (steps 491-493).

Dkt. No. 45 at 10; Dkt. No. 47 at 15; Dkt. No. 53, Ex. A at 4–7. The parties submit that this term appears in Claims 1, 6, 10, and 14 of the '306 Patent and Claims 1 and 3 of the '369 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning (not means-plus-function)."

(1) The Parties' Positions

Plaintiff argues that this is not a means-plus-function term because "[t]he limitation recites sufficient structure for a person of skill in the art to be able to configure components for implementing the requirements of the limitation in an AP module." Dkt. No. 45 at 11. In particular, Plaintiff argues that "AP" refers to "access point," which has a well-known structural meaning in the relevant art. *See id.* Further, Plaintiff urges, "the *limitation itself* describes how the communication to and from the access point takes place in considerable detail." *Id.* at 12. Alternatively, Plaintiff argues that even if this disputed term is found to be a means-plus-function term, the specification links the claimed function to a "computing device" such as a laptop computer. *Id.* at 13–14. Plaintiff urges that no algorithm is required but, alternatively, submits that "one skilled in the art would understand that the specification identifies the components within the wireless enabled computing device that are used to implement each function." *Id.* at 16. Plaintiff argues that Defendant's proposed algorithms "describe features unrelated to the functions cited in the limitation." *Id.* at 20.

Defendant responds that "module" is a nonce term and that the modifier "AP" does not impart any particular structural meaning to "module." Dkt. No. 47 at 16. Defendant also submits that "[d]uring prosecution of the '369 Patent, the Patent Office found this term to be a means-plus-function term and examined it with that understanding." *Id.* at 17. Further, Defendant argues, the specification fails to disclose any corresponding structure for the claimed

functions of "causing said computing device to serve the given device as a second AP having a second APID, distinct from the first APID . . ." and "tunnel data traffic . . . such that . . . the given device operates on the network [with/using] a [second] public IP address distinct from the first public IP address . . . ." *Id.* at 18–21.[7]

Plaintiff replies that "[i]n light of the subsequent amendments and examiner interviews, the examiner's comments provide little claim construction guidance." Dkt. No. 52 at 7. Plaintiff also argues that "a PHOSITA [(person having ordinary skill in the art)] would understand AP identification to simply be an identifier for an access point." *Id.* at 8.

At the May 4, 2017 hearing, Defendant emphasized that the "AP module" is not itself an access point but rather is recited as something that sets up connections with access points.

(2) Analysis

Title 35 U.S.C. § 112(f) (formerly § 112, ¶ 6) provides: "An element in a claim for a combination may be expressed 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." "In exchange for using this form of claiming, the patent specification must disclose with sufficient particularity the corresponding structure for performing the claimed function and clearly link that structure to the function." *Triton Tech of Tex., LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1378 (Fed. Cir. 2014).

[7] Defendant has also submitted the April 6, 2017 Declaration of Henry Houh, Ph.D. Dkt. No. 47 at Ex. 1. Plaintiff has filed a motion to strike this declaration. Dkt. No. 48. Defendant has responded and Plaintiff has replied. Dkt. Nos. 54 & 55. Because this declaration, even when considered, does not significantly affect the Court's analysis in the present claim construction proceedings, the Court denies Plaintiff's motion to strike (Dkt. No. 48).

"[T]he failure to use the word 'means' . . . creates a rebuttable presumption . . . that § 112, para. 6 does not apply." *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). "When a claim term lacks the word 'means,' the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id.* at 1349 (citations and internal quotation marks omitted).

Williamson, in an *en banc* portion of the decision, abrogated prior statements that the absence of the word "means" gives rise to a "strong" presumption against means-plus-function treatment. *Id.* (citation omitted). *Williamson* also abrogated prior statements that this presumption "is not readily overcome" and that this presumption cannot be overcome "without a showing that the limitation essentially is devoid of anything that can be construed as structure." *Id.* (citations omitted). Instead, *Williamson* found, "[h]enceforth, we will apply the presumption as we have done prior to *Lighting World . . . .*" *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004)). In a subsequent part of the decision not considered *en banc*, *Williamson* affirmed the district court's finding that the term "distributed learning control module" was a means-plus-function term that was indefinite because of lack of corresponding structure, and in doing so *Williamson* stated that "'module' is a well-known nonce word." 792 F.3d at 1350.

Here, the modifier "AP" provides structural meaning to this "module" term. *See id.* at 1351 (noting that "the presence of modifiers can change the meaning of 'module'"). The term "AP," which is an abbreviation for "access point," is a distinct disputed term that is addressed separately above. Although Defendant argued at the May 4, 2017 hearing that the "AP module"

is not itself an "AP," the modifier "AP" as construed by the Court nonetheless limits the disputed term to a particular class of structures.

Finally, Defendant has emphasized that, during prosecution of the '369 Patent, the Examiner expressly stated that "'AP module' has been interpreted under 35 U.S.C. 112(f) or 35 U.S.C. 112 (pre-AIA), sixth paragraph, because it uses a non-structural term 'module' coupled with functional language 'adapted to' without reciting sufficient structure to achieve that function. Furthermore, the non-structural term is not preceded by a structural modifier." Dkt. No. 45, Ex. M, Mar. 13, 2013 Office Action at 2 (M43). In light of the Court's above construction of "access point," however, this "module" term is indeed preceded by a structural modifier that limits the disputed term to a particular class of structures.

The Court therefore finds that 35 U.S.C. § 112(f) does not apply. Defendant has not proposed any construction in the event that 35 U.S.C. § 112(f) does not apply. The Court thus finds that no further construction is necessary.

The Court accordingly hereby construes **"AP module adapted to: (1) provide a given device of the other wireless enabled computing devices with access to the IP based network by causing said computing device to serve the given device as a second AP having a second APID, distinct from the first APID, and provide the given device access to the network via the first AP; and (2) tunnel data traffic from the given device, through said computing device, through the first AP, through the IP network, to a proxy server, such that the proxy server acts as a proxy of the given device and the data traffic is secure from said computing device and first AP and the given device operates on the network [with/using] a [second] public IP address distinct from the first public IP address[, with the second public IP address associated with the given device]"** to have its **plain meaning**.

E. "communication module adapted to: (1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices"

Plaintiff's Proposed Construction	**Defendant's**
Not means-plus-function. No construction necessary beyond construction of components: (1) wirelessly connect; (2) computing device; (3) access point; (5) wirelessly communicate; (6) wireless enabled computing devices. If the Court determines that construction is necessary, then Plaintiff proposes "a component that enables a device to wirelessly communicate with both a wireless access point that provides connectivity to an IP-based network, and also wirelessly communicate with other wireless computing devices using a communication protocol (e.g., WiFi, Bluetooth, cellular, etc.)" Alternatively, if the Court determines that the claim term is subject to § 112(6): Function: (1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices. Structure: Wireless network interface card ("NIC"). Terms used in Plaintiff's proposed structure: (1) "wireless network interface card ('NIC')" should be construed as "electronic circuitry for the purpose of connecting a computing device to a wireless network".	The term is governed by 35 U.S.C. § 112(6). The term is invalid as indefinite because the specification does not disclose sufficient structure to perform the claimed functions. In the event the term is not deemed to be indefinite, the function is expressly stated in the claim, and the corresponding structure must include, at a minimum, the software module described in the '306 patent at col. 16, ll. 42-48 and the algorithm in Figs. 16 (step 491) and 17 (step 491).

Dkt. No. 45 at 21; Dkt. No. 47 at 22–23; Dkt. No. 53, Ex. A at 7–9. The parties submit that this term appears in Claim 1 of the '306 Patent and Claim 1 of the '369 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "Means-plus-function / Function: '(1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices' / Structure: 'a wireless network card, and equivalents thereof.'"

(1) The Parties' Positions

Plaintiff argues that "communication" modifies "module" such that the presumption against means-plus-function treatment is not rebutted. Dkt. No. 45 at 21–22. Further, Plaintiff submits, "the claim limitation describes the roles of the communication module in considerable detail." *Id.* at 23. Alternatively, Plaintiff argues that the specification discloses that, in Plaintiff's words, "the laptop or STA (or more generically, 'computing device') is the structure that performs the functions." *Id.* at 24. Plaintiff urges that no algorithm is required but, alternatively, submits that "one skilled in the art would understand that the specification identifies the components within the wireless enabled computing device that are used to implement each function." *Id.* at 25. Plaintiff further argues that Defendant's proposed algorithms "are not linked or associated with the 'communication module' limitations . . . ." *Id.*

Defendant responds that "module" is a nonce word and that the modifier "communication" does not impart any particular structural meaning to "module." Dkt. No. 47 at 23. Defendant argues that the specification fails to disclose any corresponding structure for the claimed functions. *Id.* at 24.

Plaintiff replies by reemphasizing the opinions and examples provided by Plaintiff's expert. Dkt. No. 52 at 8 (citing Dkt. No. 45, Ex. C, Mar. 15, 2017 Kirkendoll Decl. at ¶ 58; *see id.* at Exs. 4 & 5). Further, Plaintiff argues that "the claim limitation's operation also describes elements of structure, e.g., 'wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID).'" *Id.* at 9 (emphasis omitted).

At the May 4, 2017 hearing, Defendant urged that the corresponding structure cannot merely be a wireless network card because the claimed function, which involves simultaneous

communications, is identified in the specification as being a point of novelty. Defendant also emphasized that, during prosecution, the examiner identified software as the corresponding structure and the patentee did not object.

(2) Analysis

Legal principles regarding 35 U.S.C. § 112(f) are set forth above in the discussion of the "AP module . . ." term.

Unlike the "AP module . . ." term, the "communication module . . ." term does not recite any distinct structure, and the term does not modify the word "module" with any language that imparts structure. *Williamson* is analogous:

> The prefix "distributed learning control" does not impart structure into the term "module." These words do not describe a sufficiently definite structure. Although the "distributed learning control module" is described in a certain level of detail in the written description, the written description fails to impart any structural significance to the term.

Williamson, 792 F.3d at 1351. Plaintiff submits the opinion of its expert that "commercial devices have been sold that were known as 'communication modules' and one of ordinary skill in the art would have known of such devices." Dkt. No. 45, Ex. C, Mar. 15, 2017 Kirkendoll Decl. at ¶ 58; *see id.* at Exs. 4 & 5. On balance, however, Plaintiff has not persuasively demonstrated that the disputed term refers to a particular class of structures or that the disputed term's use of the word "communication" is structural rather than functional. Further, the disputed term does not contain a "recitation of . . . operation in sufficient detail to suggest structure to persons of ordinary skill in the art." *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320–21 (Fed. Cir. 2004).[8]

[8] Plaintiff has also cited *Blast Motion, Inc. v. Zepp Labs, Inc.*, No. 15-CV-700 JLS (NLS), 2017 WL 476428, at *17 (S.D. Cal. Feb. 6, 2017), which found that a "communications module" term was not governed by 35 U.S.C. § 112, ¶ 6. Plaintiff has not shown that this finding by another

The "communication module . . ." term is thus a means-plus-function term governed by 35 U.S.C. § 112(f). The parties agree that the claimed function is: "(1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices."

As to the corresponding structure, the specification discloses that performing wireless communication between a device and an access point and between a device and other devices is carried out by a wireless network card:

> Dual Use Laptop Simultaneously Connected to the Internet and Serving as AP
>
> FIGS. 1 and 2 illustrate a wireless system for connecting mobile devices to the Internet through an access point. It may use a novel method for performing the deployment of APs, i.e., the method that allows devices to function at the same time as STAs and as APs. For example, a laptop 11 is connected to the Internet through access point AP 10, and at the same time, laptop 11 shares its connection for other STAs by operating as an AP. Thus, other STAs 12 and 13 look at laptop 11 as an AP, and can connect through it to the Internet.
>
> When laptop 11 is connected to AP 10 through a wired connection, it can simply set its wireless connection as an AP (Infrastructure mode). However, when laptop 11 is connected to AP 10 through a wireless connection, the situation is more complex. Disclosed is a novel method in which laptop 11 can be connected to AP 10 and serve as an AP using only a single *wireless network card*. Laptop 11 connects to AP 10 just like any other STA, and at the same time runs the protocol stack of an AP.

'306 Patent at 11:30–50 (emphasis added); *see id.* at 31:22–24 ("The present application discloses a STA which has a capability of communicating in two or more channels in parallel (for example, by using two *wireless network cards*).") (emphasis added).

court as to an unrelated patent is binding or persuasive here. Further, it appears that *Blast Motion* relied at least in part upon agreement between the parties. *See id.*

The opinion of Plaintiff's expert is persuasive that a "wireless network card" is also known as a wireless "network interface controller" ("NIC") and is a well-known structure. *See* Dkt. No. 45, Ex. C, Mar. 15, 2017 Kirkendoll Decl. at ¶ 60.

Because a wireless network card is a specialized device rather than a general-purpose computer (*see id.*), the algorithm requirement does not apply. *See, e.g., WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999) ("In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm."). Defendant has argued that "[a] wireless network card would need to be specifically programmed to perform" the claimed function of establishing two wireless connections. Dkt. No. 47 at 25; *see id.*, Ex. 1, Apr. 6, 2017 Houh Decl. at ¶ 56. This argument perhaps might bear upon enablement but does not appear relevant to the present claim construction dispute. *See Phillips*, 415 F.3d at 1327 ("we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction").

The Court therefore hereby finds that **"communication module adapted to: (1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices"** is a **means-plus-function term** governed by 35 U.S.C. § 112(f), the claimed function is **"(1) wirelessly connect said computing device to an IP based network via a first wireless access point (AP) having a first AP Identification (APID); and (2) wirelessly communicate with other wireless enabled computing devices,"** and the corresponding structure is **"a wireless network card, and equivalents thereof."**

F. "computing device"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
"a computer, including, but not limited to a tablet computer, laptop computer, or WiFi-enabled phone"	No construction necessary—plain and ordinary meaning

Dkt. No. 45 at 26; Dkt. No. 47 at 26; Dkt. No. 53, Ex. A at 9. The parties submit that this term appears in Claims 1, 2, 4–10, 14, 16, 17, 19, 21, 23–26, 35–37, 39, 41–46, 48, 56, 58, 61–63, 65, 67, and 68 of the '306 Patent and Claims 1–5 and 7 of the '369 Patent. *Id.*

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning."

(1) The Parties' Positions

Plaintiff argues that it "requests that the Court construe the term 'computing device' to avoid potential confusion by jurors who may think that 'computing device' is limited to a device exhibiting a computer form factor, e.g., laptop or tablet computer, and may not include other devices, such as smartphones." Dkt. No. 45 at 26.

Defendant responds that "[t]he term 'computing device' does not require construction" because "[t]here is no dispute about the scope of this claim term related to either non-infringement or invalidity." Dkt. No. 47 at 26. Defendant argues that Plaintiff's proposed construction would incorrectly "suggest to the jury that the Asserted Patents explicitly contemplated a tablet and a phone as the claimed 'computing devices.'" *Id.* at 26–27.

Plaintiff replies that the specification indeed discloses WiFi-enabled cellular phones. Dkt. No. 52 at 9–10.

At the May 4, 2017 hearing, the parties presented no oral argument and instead rested on their briefing as to this disputed term.

(2) Analysis

Plaintiff has not demonstrated that the parties have any substantive dispute as to the term "computing device." *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[A]lthough the claims are construed objectively and without reference to the accused device, only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy."). Plaintiff's proposed list of examples would thus tend to confuse rather than clarify the scope of the claims and is accordingly hereby expressly rejected.

No further construction is necessary. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("[D]istrict courts are not (and should not be) required to construe every limitation present in a patent's asserted claims."); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) ("Unlike *O2 Micro*, where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction."); *ActiveVideo Networks, Inc. v. Verizon Commcn's, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015).

The Court accordingly hereby construes **"computing device"** to have its **plain meaning**.

G. "wireless," "wirelessly communicate," "wirelessly connect," "wirelessly connecting," and "wireless enabled computing device"

"wireless" ('306 Pat., Cls. 1, 7, 8, 16, 27, 28, 30, 31, 37, 43, 49, 50, 52, 53, 63)	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
"without the use of interconnecting wires or cables"	No construction necessary—plain and ordinary meaning
"wirelessly communicate," "wirelessly connect," and "wirelessly connecting" ('306 Pat., Cls. 1, 16, 43; '369 Pat., Cl. 1)	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
"communicate without the use of interconnecting wires or cables"	No construction necessary—plain and ordinary meaning
"wireless enabled computing device" ('306 Pat., Cls. 1, 16, 17, 37, 43, 63; '369 Pat., Cl. 7)	
Plaintiff's Proposed Construction	**Defendant's Proposed Construction**
"a computing device that is able to wirelessly communicate"	No construction necessary—plain and ordinary meaning

Dkt. No. 45 at 27; Dkt. No. 47 at 27; Dkt. No. 53, Ex. A at 10.

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "Plain meaning."

(1) The Parties' Positions

Plaintiff submits that it "requests that the Court construe the term 'computing device' to avoid potential confusion by jurors who may think (or be led to believe) that 'wireless' is limited to WiFi communications." Dkt. No. 45 at 27.

Defendant responds that "[t]he 'wireless' claim terms do not require construction" because "[t]here also is no dispute about the scope of this claim term related to either non-infringement or invalidity." Dkt. No. 47 at 27.

Plaintiff replies:

> Verizon disputes whether "access point" is restricted to the WiFi protocol or can also include, e.g., a cellular protocol. Barkan contends that "wireless access point" includes the use of any wireless protocol. Thus, instructing the jury that the terms should be given their plain and ordinary meaning may not resolve the dispute.

Dkt. No. 52 at 10.

At the May 4, 2017 hearing, the parties presented no oral argument and instead rested on their briefing as to these disputed terms.

(2) Analysis

Defendant has not argued that the term "wireless" is limited to "WiFi," and Plaintiff has not shown that a finder of fact would be likely to interpret the term "wireless" to mean "WiFi." Further, as to Plaintiff's arguments regarding "access point," that term is a distinct disputed term addressed separately above.

The Court therefore hereby expressly rejects Plaintiff's proposed constructions. *See Vivid Techs.*, 200 F.3d at 803 (quoted above). No further construction is necessary. *See U.S. Surgical*, 103 F.3d at 1568; *see also O2 Micro*, 521 F.3d at 1362; *Finjan*, 626 F.3d at 1207; *ActiveVideo*, 694 F.3d at 1326; *Summit 6*, 802 F.3d at 1291.

The Court accordingly hereby construes **"wireless," "wirelessly communicate," "wirelessly connect," "wirelessly connecting,"** and **"wireless enabled computing device"** to have their **plain meaning**.

H. "network address translation (NAT) service"

Plaintiff's Proposed Construction	Defendant's Proposed Construction
"NAT enables IP addresses used in one IP address space to be translated into different IP addresses used in a second IP address space" Alternatively: "NAT enables IP addresses used on one side of a device that performs NAT to be translated into different IP addresses used on another side of the device"	"a service that converts between IP addresses used within an intranet or other private network and public IP addresses"

Dkt. No. 45 at 27; Dkt. No. 47 at 28; Dkt. No. 53, Ex. A at 26–27. Plaintiff submits that this term appears in Claims 42 and 68 of the '306 Patent. Dkt. No. 45 at 27.

Shortly before the start of the May 4, 2017 hearing, the Court provided the parties with the following preliminary construction: "a service that converts between IP addresses used in one network and IP addresses used in another network."

(1) The Parties' Positions

Plaintiff argues that Defendant's proposal is too narrow because "the NAT disclosed in the preferred embodiment converts IP addresses between two private networks." Dkt. No. 45 at 28. Plaintiff explains that "[a] NAT simply modifies the network address information in IP packet headers in order to remap one IP address space into another." *Id.*

Defendant responds that "[Defendant's] construction is literally the one that [Plaintiff] originally proposed, and is supported by the dictionary definition [Plaintiff] submitted with its initial disclosures to prove the term's plain and ordinary meaning." Dkt. No. 47 at 28. Defendant explains that "[Plaintiff] now seeks to broaden the plain and ordinary meaning of the term, seeking a construction that would permit conversion of any IP address to any other IP address (unlike the private to public conversion understood in the art)." *Id.*

Plaintiff replies by citing the opinion of its expert that the NAT disclosed in the preferred embodiment converts IP addresses between two private networks. Dkt. No. 52 at 10.

At the May 4, 2017 hearing, the parties presented no oral argument and instead rested on their briefing as to this disputed term.

(2) Analysis

Claim 42 of the '306 Patent, for example, recites:

> 42. The system of claim 16 wherein the proxy server provides a network address translation (NAT) service that translates IP addresses for the second computing device.

The specification discloses:

> FIGS. 1 and 2 illustrate a wireless system for connecting mobile devices to the Internet through an access point. It may use a novel method for performing the deployment of APs, i.e., the method that allows devices to function at the same time as STAs and as APs. For example, a laptop 11 is connected to the Internet through access point AP 10, and at the same time, laptop 11 shares its connection for other STAs by operating as an AP. Thus, other STAs 12 and 13 look at laptop 11 as an AP, and can connect through it to the Internet.
>
> * * *
>
> In the preferred embodiment, laptop 11 will run a Network Address Translation (NAT) and a DHCP server as part of his [*sic*] protocol stack. Running DHCP enables laptop 11 to provide an Internet address to STAs that connect to it. Running a NAT allows laptop 11 to connect other STAs through it, while keeping conformance with regards to AP 10[.] To AP 10 all the communication appears to be originating form [*sic*, from] laptop 11.

'306 Patent at 11:33–67; *see id.* at 21:3–5 ("NAT device that need[s] to relate an internal IP address and port number with an external IP address and port number")

With reference to this disclosure, Plaintiff's expert has persuasively opined that NAT service can be provided between two private networks, such as one between the AP 10 and the laptop 11 and another between the laptop 11 and the other STAs. Dkt. No. 45, Ex. C, Mar. 15, 2017 Kirkendoll Decl. at ¶ 46.

Further, Defendant has not shown any intrinsic definition or disclaimer that would warrant imposing any private-to-public limitation. To the extent such requirements appear in the extrinsic evidence that Defendant has cited, Defendant has not shown that such extrinsic evidence should override the above-discussed embodiment involving private-to-private network address translation. *See* Dkt. No. 47, Ex. 6, *Microsoft Computer Dictionary* 357 (5th ed. 2002) (NAT *n.* Acronym for Network Address Translation. The process of converting between IP addresses used within an intranet or other private network and Internet IP addresses. This approach makes it possible to use a large number of addresses within the private network without depleting the limited number of available numeric Internet IP addresses. Variations of NAT displaying similar functions include IP aliasing, IP masquerading, and Port Address Translation."); *see also Phillips*, 415 F.3d at 1317 ("[W]hile extrinsic evidence can shed useful light on the relevant art, we have explained that it is less significant than the intrinsic record in determining the legally operative meaning of claim language.") (citations and internal quotation marks omitted).

As to the proper construction, the parties are otherwise in substantial agreement. That is, apart from Defendant's proposed private-to-public limitation, the parties essentially agree that a NAT service provides conversion between IP addresses in one network and IP addresses in another network.

The Court therefore hereby construes **"network address translation (NAT) service"** to mean **"a service that converts between IP addresses used in one network and IP addresses used in another network."**

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit.

As noted above, the Court hereby **DENIES** Plaintiff's Emergency Motion to Strike Untimely Expert Declaration (Dkt. No. 48).

The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 14th day of May, 2017.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

APPENDIX A

Term	Parties' Agreement
"cellular cell" ('306 Patent, Claims 5, 28, 50)	"a base station used in a cellular system"
"IP address" ('306 Patent, Claims 1, 14, 16, 17, 23–25, 39, 41–46, 63, 67, 68; '369 Patent, Claim 1)	"a number used to address a device on an IP network"

Dkt. No. 41 at 1; Dkt. No. 53, Ex. A at 2.