

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON.COM
SERVICES LLC, and EERO LLC.

Defendants.

Case No. 6:21-cv-619-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

APPLE INC.,

Defendant.

Case No. 6:21-cv-620-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

ASUSTEK COMPUTER INC.

Defendant.

Case No. 6:21-cv-622-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

CISCO SYSTEMS, INC.
MERAKI LLC

Defendants.

Case No. 6:21-cv-623-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

Case No. 6:21-cv-625-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO
TECHNOLOGIES,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,

Defendants.

Case No. 6:21-cv-626-ADA

JURY TRIAL DEMANDED

XR COMMUNICATIONS, LLC, dba VIVATO TECHNOLOGIES, Plaintiff, v. DELL TECHNOLOGIES INC. AND DELL INC., Defendants.	Case No. 6:21-cv-646-ADA JURY TRIAL DEMANDED
XR COMMUNICATIONS, LLC, dba VIVATO TECHNOLOGIES, Plaintiff, v. HP INC., Defendant.	Case No. 6:21-cv-694-ADA JURY TRIAL DEMANDED
XR COMMUNICATIONS, LLC, dba VIVATO TECHNOLOGIES, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Case No. 6:21-cv-695-ADA JURY TRIAL DEMANDED

**Plaintiff XR Communications LLC dba Vivato Technologies’
Opening Claim Construction Brief**

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I. INTRODUCTION

Plaintiff XR Communications, LLC dba Vivato Technologies (“Vivato”) and Defendants¹ offer not just competing claim construction proposals but completely different approaches to claim construction. Vivato’s proposals stay consistent with the terms’ plain meaning and the intrinsic record, and clarify that meaning only when necessary under controlling law, or when helpful to narrow the disputes for the Court. Defendants’ proposals, on the other hand, ask this Court to recharacterize and burden clear terms by importing artificial and extraneous baggage, often from extrinsic evidence that they have cherry-picked to support their litigation-driven proposed constructions. But Defendants cannot identify any clear and unmistakable disclaimer or clear lexicography to support re-defining these terms. Thus, accepting their constructions can only invite reversible error. Defendants’ proposals should be rejected.

II. BACKGROUND OF THE PATENTED TECHNOLOGIES

The four asserted patents are U.S. Patent Nos. 8,289,939 (“the ‘939 patent”; Ex. 2); 10,594,376 (“the ‘376 patent”; Ex. 3); 10,715,235 (“the ‘235 patent”; Ex. 1); and 7,729,728. Defendants only seek constructions for terms in the ‘939 patent, the ‘376 patent, and the ‘235 patent. The ‘376 and ‘235 patents are related to each other and share substantially the same specification. The ‘376 and ‘235 patents are also related to the ‘728 patent, although that patent has a different specification from the others. The ‘939 patent is in its own family.

A. The ‘939 patent

The ‘939 patent is entitled “Signal communication coordination,” and claims priority to Provisional Patent Application Nos. 60/423,702 and 60/423,696, both filed on Nov. 4, 2002. The ‘939 Patent is in the field of wireless communications, including “WiFi” networks that operate in accordance with “IEEE 802.11” standards. It describes an exemplary access station for wireless communications that includes a wireless input/output unit that establishes a plurality of access points. The wireless input/output unit is a structure familiar to an ordinary artisan, including

¹“Defendants” refers to each of the Defendants in the above-captioned cases: Amazon.com, Inc., Amazon.com Services LLC, And eero LLC; Apple Inc.; ASUSTeK Computer Inc.; Cisco Systems, Inc. and Meraki LLC; Google LLC; Samsung Electronics Co. Ltd. and Samsung Electronics America Inc.; Dell Technologies Inc. and Dell Inc.; HP Inc.; Microsoft Corporation.

MACs, baseband units, radio frequency parts, an Ethernet switch/router, a beamformer, and an antenna array. '939 Patent, 6:54-64. The wireless input/output unit is depicted in Figure 4 as containing a signal transmission/reception coordination logic that is adapted to “restrain transmission on a first channel with a first access point 402 even when receiving a wireless communication on a second different channel with a second access point 402.” *Id.* 6:22-54.

B. The ‘376 and ‘235 patents

The ‘376 patent is entitled “Directed wireless communication” and the ‘235 patent is also entitled “Directed wireless communication.” The ‘376/’235 patents recite a Provisional Patent Application No. 60/423,660, filed on Nov. 4 2002, but claim priority to at least February 1, 2002. The 376/’235 patents are also in the field of wireless communications, including “WiFi” networks that operate in accordance with “IEEE 802.11” standards. They generally relate to “beam-forming,” which is depicted in several figures, including Figures 2, 3, 5, 6, 12, 14, and 15. “Beam-forming” refers to when the “electromagnetic waves are *focused* in a desired direction,” unlike a conventional omni-directional transmission that transmits in all directions. ‘235 Patent, 5:22-55.² The patents describe improvements to “beam-forming,” including how to compute a set of “weighting values” that can be used to direct transmissions in desired directions. *See* Fig. 12.

III. CLAIM CONSTRUCTION PRINCIPLES

The “claim construction inquiry . . . begins and ends in all cases with the actual words of the claim.” *Teleflex, Inc. v. Ficos N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002). Indeed, “the claims themselves provide substantial guidance as to the meaning of [] terms.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

Thus, when conducting a claim construction inquiry, “district courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.” *O2 Micro Int’l v. Beyond Innovation Tech.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). This is because claim construction is “not an obligatory exercise in redundancy.” *US Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Where a term is used in accordance with its plain meaning, the

² All emphasis added unless otherwise noted.

court should not replace it with different language. *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) (“we do not redefine words. Only the patentee can do that.”); *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012) (“The district court did not err in concluding that these terms have **plain meanings that do not require additional construction**. ... [T]he district court properly rejected [the proposed] construction and resolved the dispute between the parties.”).

There is a “**heavy presumption**” that claim terms carry their “full ordinary and customary meaning, unless [the accused infringer] can show the patentee **expressly relinquished** claim scope.” *Epistar Corp. v. ITC*, 566 F.3d 1321, 1334 (Fed. Cir. 2009). Because that plain meaning “is the meaning that the term would have to a [POSITA] in question at the time of the invention,” construing claims often “involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1313-14.

“There are **only two exceptions**” in which claim terms are not given their full ordinary and customary meaning: “1) when a patentee sets out a definition and acts as his own **lexicographer**, or 2) when the patentee **disavows** the full scope of a claim term either in the specification or during prosecution.” *Thorner*, 669 F.3d at 1365. Without clear and unambiguous disclaimer or lexicography, courts “**do not import limitations into claims from examples or embodiments** appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment.” *See JVW Enterprises, Inc. v. Interact Accessories*, 424 F.3d 1324 (Fed. Cir. 2005). Similarly, a statement during patent prosecution does not limit the claims unless the statement is a “clear and unambiguous disavowal of claim scope.” *Omega Engineering, Inc v. Raytek Corp.*, 334 F.3d 1314, 1325 (Fed. Cir. 2003). Moreover, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips*, 415 F.3d at 1317.

After first considering the intrinsic evidence of the patent claims, specification, and

prosecution history, “[e]xtrinsic evidence may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). Extrinsic evidence may include, for example, expert testimony, journal articles, and dictionaries. *Phillips*, 415 F.3d at 1317. However, extrinsic evidence may only be relied upon when it does not contradict the intrinsic record consisting of the claims themselves, the specification, and the prosecution history. *Vitronics Corp.*, 90 F.3d at 1383; *Callabo Innovations, Inc. v. Sony Corp.*, 2019 WL 3595450 at *2 (Fed. Cir. 2019). It is error to rely on extrinsic evidence that contradicts the intrinsic record. *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 790 F.3d 1329, 1338 (Fed. Cir. 2015).

IV. DISPUTED TERMS

A. “signal transmission/reception coordination logic” (’939 patent, all claims)

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary. Alternative proposed construction, should the term be treated as a means-plus-function limitation: Function: <i>See below</i> for cl. 15, cl. 30. <u>Claim 15</u>: ascertaining, by monitoring the plurality of access points for received signals, that: a first access point of the plurality of access points is receiving a first signal on a first channel, a second access point of the plurality of access points is receiving a second signal that is ongoing on a second channel, restrain[ing] at least a third access point of the plurality of access points from transmitting a third signal on a third channel responsive to the ascertaining that the first access point is receiving the first signal and that the second access point is receiving the second signal that is ongoing-on the second channel, wherein the restraining at least the third access point prevents degradation to the first and second signals. <u>Claim 30</u>: ascertaining, by monitoring the plurality of access points for received signals, that a first access point of the plurality of access points is receiving a first signal on a first channel, restrain[ing] at least a second access point of the plurality of access points from transmitting a second signal on a second channel different from the first channel responsive to the ascertaining that the first access point is receiving the first signal.	Means-plus-function; indefinite for lack of corresponding structure

XR's Proposed Construction	Defendants' Proposed Construction
Structure: Signal transmission/reception logic 404 and/or MAC coordinator logic 606 and/or 6:1-51 and/or 6:65-7:20 and/or 9:11-59 and/or 11:19-12:21 and/or 14:28-15:22 and/or 15:23-65 and/or 16:53-67 and/or 18:12-55 and equivalents thereof. The corresponding structure of “signal transmission/reception logic 404” includes the characteristics and configuration set forth for the signal transmission/reception coordination logic 404 (and the MAC coordinator logic 606, which is subsumed within the corresponding structure of the signal transmission/reception coordination logic 404) in the '939 Patent, including at 6:1-51 and/or 6:65-7:20 and/or 9:11-59 and/or 11:19-12:21 and/or 14:28-15:22 and/or 15:23-65 and/or 16:53-67 and/or 18:12-55, and equivalents thereof.	

This term was construed in litigation involving the '939 Patent in the Central District of California, Case No. 8:17-cv-596-DOC(JDEx) (the “Central District of California litigation”). If this Court finds the term subject to §112(6), then it should adopt the same construction.

In the Central District of California litigation, the District Court rejected the defendants' indefiniteness arguments and adopted the recommended construction from the Report and Recommendation of the Special Master (ECF No. 280) (“R&R”) over defendants' objections. R&R construed “signal transmission/reception coordination logic” as a means-plus-function term with the corresponding structure of the “signal transmission/reception coordination logic 404 (with the characteristics and configuration set forth for the signal transmission/reception coordination logic 404 in the '939 Patent), and equivalents thereof.” Ex. 5 (Special Master R&R ECF No. 280 at 58). The defendants objected to the R&R and, after careful consideration, the District Court rejected defendants' indefiniteness theories. The District Court adopted the R&R's construction, with one change: the District Court additionally found another structure disclosed in the specification, the MAC coordinator logic 606, was subsumed within the corresponding structure of the signal transmission/reception coordination logic 404 based on express teachings in the specification. Ex. 6 (ECF No. 312, Minute Order Adopting R&R) at 8-10.

1. If §112(6) applies, the '939 Patent discloses adequate, clearly linked corresponding structure in the descriptions of “signal reception/coordination logic 404” in the specification

Defendants articulate no sound reason to depart from the claim construction issued by the court in the Central District of California, which held the '939 Patent discloses adequate, clearly linked corresponding structure. Assuming §112(6) applies, Defendants must prove, by clear and convincing evidence, that the specification fails to disclose a clearly linked, corresponding structure for performing the claimed functions. Defendants fall well short of that burden.

The Parties agree on the recited functions. Defendants' Opening Claim Construction Brief (“Opening Br.”) at 6. The only function Defendants argue is not disclosed in the specification is “restrain an access point from transmitting on one channel, in response to ascertaining that a different access point is receiving on a different channel.” *Id.* Defendants contend the disclosures show “generally that the coordination logic can restrain access points from transmitting when another access point is receiving, not the claimed function of restraining transmission on one channel in response to ascertaining reception on a *different* channel (as all claims require).” Opening Br. at 8 (also contending the specification’s disclosures are “devoid of any algorithm that restrains transmission on a different channel than the channel on which a signal is received.”).

Defendants are wrong. The claimed function is disclosed as a function of the “signal transmission/reception coordination logic 404” in the '939 Patent, including at column 6, lines 19-53, which specifically recites “restraining transmission *on a first channel* with a *first access point 402 even when receiving* a wireless communication on a *second different channel* with a *second access point 402.*” '939 Patent, 6:19-53. *See* Ex. 4, Declaration of Branimir Vojcic (“Vojcic Decl.”) ¶ 37. This is a perfect match to the claimed function, which Defendants agree is “restrain an access point from transmitting on one channel, in response to ascertaining that a different access point is receiving on a different channel.” Opening Br. at 6. The full paragraph from the '939 Patent provides even more confirmation of this fact:

With reference again to FIG. 4, one access point 402 (and/or communication beam 202) may operate on a different channel from that of another access point 402 (and/or communication beam 202).

If the different channels are adjacent and/or not sufficiently-well defined, it may be beneficial to *restrain transmission on a first channel with a first access point 402 even when receiving a wireless communication on a second different channel with a second access point 402*. In another exemplary implementation for *different channel situations*, *signal transmission/reception coordination logic 404 may restrain transmission on one channel on the basis of reception on another channel with an ongoing transmission on a third channel to prevent (e.g., inter-modulation) distortion to the signals being communicated in the wireless system*. '939 Patent, 6:19-53.

Defendants argue that col. 6:19-53 does not show “restraining transmission on one channel in response to ascertaining reception on a *different* channel”—but the paragraph recites “restraining transmission on a first channel with a first access point 402 even when receiving a wireless communication on a *second different channel* with a second access point 402.” '939 Patent, 6:19-53. Further, the sentence goes on to explain that for “*different channel situations*, signal transmission/reception coordination logic 404 may restrain transmission on one channel on the basis of reception on another channel with an ongoing transmission on a third channel to prevent [] distortion to the signals.” *Id.* Thus, it is indisputable that the claimed functions for both claims 15 and 30 are recited in the specification.

Further, it is indisputable that this claimed function is clearly linked to the “signal transmission/reception coordination logic 404.” '939 Patent, 6:19-53. Indeed, the specification expressly teaches that this is a function of “signal transmission/reception coordination logic 404,” which “restrain[s] transmission on one channel on the basis of reception on another channel.” *Id.* See also R&R at 53-57.

On this point, Defendants argue that even if the recited function does appear in the specification, and even if it is clearly linked to the “signal transmission/reception coordination logic 404,” this is indefinite because logic 404 is a “black box” as “Figure 4 does not show any structure for the logic.” Opening Br. at 7.

Defendants are wrong again. This is nothing like a “black box” case, as the R&R and the Central District of California court both found. As further explained below, the specification

discloses: (1) how to implement the signal coordination logic 404 (*e.g.*, in the baseband processing layer of an off-the-shelf chip, consistent with Figure 13, or alternatively with the MAC implementation shown in Figures 6 and 8); (2) its inputs and outputs (*e.g.*, inputs from RF parts 610 and outputs to BB units 608, as described in FIG. 13); and (3) its structural connections to other physical structures (*e.g.*, its coupling within wireless input/output unit, as shown in Figure 4). Further, the specification teaches a POSITA how to perform the “ascertaining,” “monitoring,” and “restraining” functions, such as with the use of a list of access points and channels described at 5:65-6:15 and the use of the “receive information combiner 1002,” the “receive information selector 1004,” and “channel selectivity 1008” disclosed at column 15 and in Figure 10. These disclosures teach a POSITA what is inside the signal coordination logic 404, how to implement it, what it is coupled to, its inputs and outputs, and *how* to perform the recited functions. Each of the foregoing, alone or in combination, is corresponding structure and/or algorithm under binding precedent. *See Micro Chemical, Inc. v. Great Plains Chemical Co.*, 194 F.3d 1250, 1258-59 (Fed. Cir. 1999) (“Identification of corresponding structure may embrace more than the preferred embodiment. A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures...[w]hen multiple embodiments in the specification correspond to the claimed function, proper application of §112¶6 generally reads the claim element to embrace each of those embodiments”).

First, “signal transmission/reception coordination logic 404” is not a “black box,” because the specification teaches a POSITA that the “signal transmission/reception coordination logic 404 may be implemented at the baseband layer in a system that utilizes off-the-shelf chips in which MAC and baseband functionality are integrated into a single chip or chips that may not separately expose desired MAC signal(s)”. ’939 Patent, 18:39-44. This disclosure informs a POSITA that the signal transmission/reception coordination logic 404 is a baseband circuit structure that is implemented in an off-the-shelf baseband and MAC chipset—and a POSITA understands how to do this, given the specification’s teachings. *Vojcic Decl.* ¶ 40.

This confirms this is not a “black box” case. That is what the Federal Circuit taught in

Telcordia Technologies, Inc. v. Cisco Systems, Inc., 612 F.3d 1365 (Fed. Cir. 2010). There, the figures of the patent only showed the relevant controller’s circuit as a purported black box, but said nothing about the internal components. *Id.* Nonetheless, the Court held that “the absence of internal circuitry in the written description does not automatically render the claim indefinite” because a POSITA would have understood how to build the controller’s circuit. *Id.* at 1376-1377. Here, the ’939 Patent is going above and beyond the knowledge of a POSITA—it actually *tells* the POSITA to implement the signal transmission/reception coordination logic 404 in the baseband layer of an off-the-shelf baseband and MAC chipset. ’939 Patent, 18:39-44.

Second, the specification discloses to a POSITA the inputs and outputs to the signal transmission/reception coordination logic 404 structure in the baseband layer of the chip. The specification explains that the “logic 404 is shown operating at the baseband level. Signal transmission/reception coordination logic 404 accepts as inputs receive information from multiple RF parts 610(1, 2,...N) and produces as outputs combined receive information from multiple respective BB units 608(1, 2,...K).” ’939 Patent, 18:25-31. This confirms to a POSITA not only that the structure of the logic is baseband circuitry, but also what the structural inputs and outputs are within the wireless communication device depicted in Figure 13. Vojcic Decl. ¶ 41.

Third, Figure 4 clarifies the signal transmission/reception coordination logic 404 is contained within and coupled to other physical structures within the access station, such as the claimed “wireless input/output unit,” which a POSITA understands to be a physical structure comprising baseband processors (“BB units 608”), signal processors (“RF parts 610”), an Ethernet switch (“Ethernet switch/router 602”), a beamformer (“beamformer 612”), and an antenna array (“antenna array 208”), as described in the specification. *See* ’939 Patent, 6:54-7:6, FIG. 4 (depicting “signal transmission/reception coordination logic 404” coupled within “wireless input/output unit 206”). A POSITA understands the structure of the access station (*e.g.*, 3:47-59) and the wireless input/output unit that contains the antenna array, the beamformer, the ethernet switch, the baseband units, and the RF parts, all of which are well-known components of a wireless communications system. Vojcic Decl. ¶ 42. Figure 4 shows the ordinary artisan that the signal

coordination logic 404 is inside the wireless input/output unit, and a POSITA would understand it in view of Figure 13 depicting logic 404 receiving inputs from the RF parts and outputting information for the baseband units, when implemented in the baseband circuitry. *Id.*

Fourth, the specification also explains the inner structure that the signal transmission/reception coordination logic 404 uses to perform the recited function of restraining transmissions on one channel on the basis of reception on a different channel. The '939 Patent, 5:65-6:15 confirms that the logic 404 maintains a specific numbered list of access points 402(1)-402(N). Each access point is listed and numbered so that it can be identified in relation to each other access point that is receiving a signal on the same channel or on a different channel. '939 Patent, 5:65-6:15 ("When access point 402(w) is ascertained to be receiving a signal, signal transmission/reception coordination logic 404 is capable of restraining (e.g., limiting, preventing, delaying, etc.) the transmission of signals on the other access points 402(1...w-1, w+1...N)...signals can be coordinated (e.g. analyzed and controlled) based on a per-channel basis."). This structure allows the signal transmission/reception coordination logic 404 to ascertain which access points are receiving signal on a second different channel so that it can restrain transmissions for the access point on a first channel. Vojcic Decl. ¶ 43.

As another example, column 15 (referencing Figure 10) explains the structure of the logic 404 includes "receive information combiner 1002" and "receive information selector 1004," which are structures that apply the "signal coordination function to the receive information to produce the combined receive information" which is then "utilized to ascertain signal reception and restrain signal transmission." '939 Patent, 15:30-65. This disclosure also identifies the structure of "*channel selectivity 1008*," which is a structure that enables the logic 404 to restrain transmissions on the basis of reception on a *different channel*. *Id.*

Fifth, the specification provides corresponding structure for signal transmission/reception coordination logic 404 in the form of MAC coordinator logic 606 in Figures 6 and 8. As the Central District of California court found, the specification teaches "in a more specific implementation with reference to Figures 6 and 8, signal transmission/reception coordination logic 404 may be

realized as MAC coordinator logic 606.” ’939 Patent, 15:49-65. Accordingly, a POSITA would understand at least two embodiments for the signal transmission/reception coordination logic 404: the baseband implementation corresponding to Figure 13, and the MAC implementation corresponding to Figures 6 and 8. Vojcic Decl. ¶¶ 38, 44. Figure 13 discloses receive information input to logic 404 from RF Part 610 and the combined receive information output to BB unit 608, whereas Figures 6 and 8 disclose an embodiment where the input is from BB unit 608 and the signal coordination logic 404 (realized as MAC coordinator logic 606) outputs constructive receive indicator to MAC 604. ’939 Patent, 15:49-65, 18:25-31, FIGs. 6, 8, 13.

Any of these discloses *alone* confirms that this is not a “black box” case. Defendants have no answer to any one of these disclosures individually, let alone in combination. In light of these descriptions, Defendants cannot prove indefiniteness by clear and convincing evidence. At the very least, this evidence demonstrates numerous issues of fact, demonstrating a lack of clear and convincing evidence that there is an absence of any corresponding structure or algorithm. *See Rembrandt Data Technologies, LP v. AOL, LLC*, 641 F.3d 1331, 1343 (Fed. Cir. 2011) (vacating summary judgment of invalidity since there were issues of fact as to whether the specification disclosed to one of skill in the art algorithms for several means-plus-function limitations).

2. The R&R found that this term is subject to means-plus-function treatment, but that finding was made before the Federal Circuit’s latest guidance in *Dyfan v. Target Corp.*, under which this term recites sufficiently definite structure

As shown above, Defendants fall well short of proving indefiniteness by clear and convincing evidence, given the clearly linked corresponding structure in the specification for the “signal transmission/reception coordination logic 404.” Thus, at a minimum, Defendants’ indefiniteness challenge should be rejected. But further, the Court need not construe this term as means-plus-function limitation at all. In this respect, the Court should deviate from the R&R’s finding that means-plus-function applies based on additional Federal Circuit authority that issued after the R&R.

The R&R decided that this term was means-plus-function, relying on the Federal Circuit’s

decision in *Egenera, Inc. v. Cisco Sys.*, 972 F.3d 1367, 1374 (Fed. Cir. 2020), holding “logic to modify” was means-plus-function. Ex. 5 (R&R) 50-52. The R&R reasoned the “logic” term here is analogous to the “logic” term in *Egenera*, because the ’939 patent discloses that “such logic may be implemented as hardware, software, firmware, some combination thereof, and so forth” at ’939 Patent, 5:35-37. The R&R reasoned this does not recite sufficiently definite structure. R&R at 52.

Plaintiff argued the term would be understood as a sufficiently definite term for structure because the specification explains how to implement the logic in baseband circuitry. R&R at 47. The ’939 patent teaches a POSITA to implement the signal transmission/reception coordination logic 404 in the baseband processing layer of the processing chip in a wireless routing device. Vojcic Decl. ¶¶24-29; ’939 Patent, 18:39-44 (“signal transmission/reception coordination logic 404 may be implemented at the baseband layer in a system that utilizes off-the-shelf chips in which MAC and baseband functionality are integrated into a single chip or chips that may not separately expose desired MAC signal(s) (e.g. MAC primitives)”). Accordingly, a POSITA understands this term recites definite structure, because it is implemented in the physical structure of the baseband processing layer of the processor chip in a Wi-Fi router or switch. R&R at 47. Further, the contextual claim language clarifies that the signal transmission/reception coordination logic is contained within and coupled to other physical structures, such as the claimed “wireless input/output unit,” which a POSITA understands to be a physical structure comprising baseband processors (“BB units 608”), signal processors (“RF parts 610”), an Ethernet switch (“Ethernet switch/router 602”), a beamformer (“beamformer 612”), and an antenna array (“antenna array 208”), as described in the specification. *See* ’939 Patent, 6:54-7:6, FIG. 4 (depicting “signal transmission/reception coordination logic 404” coupled within “wireless input/output unit 206”); Vojcic Decl. ¶¶30-45. *See also VR Optics LLC v. Peloton Interactive, Inc.*, 345 F. Supp. 3d 394, 410 (S.D.N.Y. 2018) (holding “placement of ‘logic’ alongside and in the same format as...other clearly structural terms highlights that the...patent is using the term logic to connote a known structure rather than as a nonce substitute for the word ‘means.’”).

To reduce the disputes before the Court, Plaintiff did not object the R&R’s finding of

means-plus-function. But in view of the Federal Circuit’s latest guidance in *Dyfan v. Target Corp.*, 28 F.4th 1360 (Fed. Cir. Mar. 24, 2022) (which was issued after the deadline for objections to the R&R), this Court should depart from the R&R and find that means-plus-treatment does not apply. As *Dyfan* makes clear, Defendants bear the burden of proving that §112(6) applies, and the “essential inquiry” is “whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Dyfan*, 28 F.4th at 1365. In *Dyfan*, the Federal Circuit held that the term “code” was not means-plus-function because “persons of ordinary skill in the art would have understood that the word ‘code,’ when coupled with language describing its operation, here connotes structure.” *Id.* at 1367-68. Further, the Federal Circuit held that the term “application” was not means-plus-function because persons of ordinary skill in the art would have understood “application” to refer to a “computer program intended to provide some service to a user, and that developers could have, at the relevant time, selected existing ‘**off-the-shelf software**’ to perform specific services and functions.” *Id.*

The term at issue is analogous to the terms in *Dyfan*. Like the term “application” in *Dyfan*, which was a known structure because it could be implemented using “off-the-shelf software,” here the ’939 Patent discloses that the signal transmission/reception coordination logic 404 “may be implemented at the baseband layer in a system that utilizes **off-the-shelf chips**.” ’939 Patent, 18:39-44. This is even *more* structural than an “application,” because it is embodied as a *physical* circuit structure in the baseband processing layer of an off-the-shelf chip. *See also Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003) (holding “circuit” connotes structure and is not §112(6)) (cited with approval in *Dyfan*). Furthermore, like the “code” in *Dyfan*, here the ’939 Patent claims couple the term “signal transmission/reception coordination logic” with “language describing its operation,” including the “ascertaining” and “restraining” steps recited in the claims. *Dyfan*, 28 F.4th at 1367-68. Accordingly, the signal transmission/reception coordination logic 404 in the ’939 Patent is analogous to the “code” and “application” terms found not to invoke §112(6) in *Dyfan*. *See also VDPP LLC v. Vizio Inc.*, No. 2021-2040 (Fed. Cir. Mar. 2022) (nonprecedential) (reversing means-plus-function treatment for “processor”).

B. “802.11” (’939 patent, cl. 3, 19, 32; ’376 Patent, cl. 10 and 21)

XR’s Proposed Construction	Defendants’ Proposed Construction
No construction needed; plain and ordinary meaning.	One of the IEEE 802.11 standards that existed at the time of the invention

This term has a plain meaning that does not require further construction. A POSITA would regard “802.11 standard” and “IEEE 802.11 standard” as referring to *any* 802.11 standard, which a POSITA understands are updated from time to time, as Dr. Vojcic has opined. Vojcic Decl. ¶¶ 46-55. For example, the ’939 patent gives examples of numerous versions of the 802.11 standard. *See, e.g.* ’939 Patent at 1:41–46 (“Since the late 1990s, LANs have expanded into wireless media so that networks may be established without necessitating wire connections between or among various network elements. Such LANs *may operate in accordance with IEEE 802.11 (e.g., 802.11(a), (b), (e), (g), (k), (n), etc.)* or other wireless network standards.”). The ’939 and ’376 patents are not limited to a particular IEEE 802.11 standard as of a particular time. Absent such disclaimer or lexicography, there is no legal basis for Defendants’ narrowing construction.

C. “transmission nulls”; ’235 patent, claims 2, 4, 8, 12, 16; ’376 patent, claims 1, 12, 22, 30, 32

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary. <i>Alternative proposed construction:</i> portions of one or more spatially distributed patterns of electromagnetic signals where transmissions of no or insignificant energy are selectively directed / portions of one or more spatially distributed transmission patterns of electromagnetic signals where transmissions of no or insignificant energy are selectively directed	portions of one or more spatially distributed transmission patterns of electromagnetic signals where transmissions of no or insignificant energy are selectively directed

XR previously agreed to its alternative proposed construction to limit disputes pending before other federal courts. However, district courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims. *O2 Micro Int’l*, 521 F.3d at 1362. Defendants and XR appear to agree on the meaning of “transmission null,” which illustrates the

term has a plain and ordinary meaning to a POSITA and does not require further construction.

D. “transmission peaks” (’235, claims 2, 4, 8, 12, 16; ’376, claims 1, 12, 22, 30, 32)

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary. <i>Alternative proposed construction:</i> portions of one or more spatially distributed patterns of electromagnetic signals where transmissions of <u>significant</u> energy are selectively directed / portions of one or more spatially distributed transmission patterns of electromagnetic signals where transmissions of <u>significant</u> energy are selectively directed	portions of one or more spatially distributed transmission patterns of electromagnetic signals where transmissions of <u>maximum</u> energy are selectively directed

While the dispute between the parties on this next term seems subtle, Defendants are attempting to narrow the scope of “transmission peaks” without adequate legal or factual support. XR takes the full ordinary meaning of that claim term, namely, “portions of one or more spatially distributed patterns of electromagnetic signals where transmissions of **significant** energy are selectively directed.” Vojcic Decl. ¶¶ 56-59. Defendants would construe the term to only the portions of the pattern where transmissions of **maximum** energy are selectively directed.

Defendants’ construction poses a risk of significant confusion—and it is unsupported by legal authority. There is a “heavy presumption” claim terms carry their “full ordinary and customary meaning, unless [the accused infringer] can show the patentee expressly relinquished claim scope.” *Epistar Corp.*, 566 F.3d at 1334. As the Federal Circuit has made clear, “[t]here are only two exceptions” in which claim terms are not given their full ordinary and customary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner*, 669 F.3d at 1365. Defendants cannot show either exception applies here.

Instead of focusing on the full ordinary meaning of the simple term or the intrinsic teachings regarding it, Defendants appear to anchor their construction in general extrinsic evidence

about the term “peak,” which is not even at issue. *First*, none of Defendants’ extrinsic evidence defines the *full term* “*transmission peak*.” *Second*, none of Defendants’ extrinsic evidence define the term *in the context of beam-forming*. Specifically, Defendant’s addition of their “*maximum*” requirement appears to come straight out of dictionary definitions they cite for the term “peak”, which are not addressing beam-forming. ECF No. 35 at 13. But this should not be used to narrow the plain meaning of “transmission peak,” because “extrinsic publications may not be written by or for skilled artisans” and therefore may not reflect the *complete* understanding of a skilled artisan in the field of the patent. *Phillips*, 415 F.3d at 1318-19.

Indeed, in this case, Defendants’ dictionary definitions likely would not reflect the complete understanding of a POSITA with the patent specification in hand. As an initial matter, Defendant’s imported “*maximum*” requirement does not expressly appear in the patent itself. And even so, it is unclear how narrowly the Defendants are interpreting the imported “*maximum*” requirement. What does appear instead are several disclosures that confirm that “transmission peaks” refer to portions of a transmission beam where a “*generated and particular* amount of energy is directed in a particular direction.” The patent explains that a “communication beam **214**” results when “electromagnetic waves are focused in a desired direction.” ’235 Patent, 5:40-55. And it specifically explains that a “*transmission peak* of a directed communication beam **214** occurs in the transmission pattern 300 when a *generated and particular amount of energy is directed in a particular direction*. Transmission peaks are, therefore, associated with the signal path and/or communication beam to a desired receiving node, such as another wireless routing device or a wireless client device. *In some cases, sidelobes to a communication beam may also be considered to represent transmission peaks.*” ’235 Patent, 6:1-9.

This confirms to a POSITA the term “transmission peaks” refers to each “generated and particular amount of energy [that] is directed in a particular direction” within communication beam **214**, and that it not only refers to the “maximum” point of energy within the entire pattern, but refers to every portion of the pattern where a *significant* amount of energy is directed in a particular direction, consistent with Plaintiff’s alternative proposed construction. Vojcic Decl. ¶¶58-65.

Moreover, the intrinsic record confirms “side lobes” of a communication beam **214** can also represent “transmission peaks.” ’235 Patent, 6:1-9. Even though side lobes are not the absolute “maximum,” they are a *relative maximum*, which is why Plaintiff’s construction (“significant”) is more consistent with the intrinsic record which clarifies side lobes can be covered by this term.

Defendants assert that the FIG. 15 embodiment shows the “relative maximum of the main communication beam” can be different when “complementary beamforming” is used, and contend that this somehow proves that there is a lexicographic definition of “transmission peak” as a “maximum.” ECF No. 35 at 14-15. However, in light of the intrinsic record’s description of “side lobes” as representing “transmission peaks,” FIG. 15 is more properly interpreted to disclose a plurality of transmission peaks with several relative maxima, each of which is a “peak” even though only one portion (*e.g.*, associated with the so-called “main beam”) is the absolute maximum. Vojcic Decl. ¶¶ 60-65. FIG. 15 does not support limiting “transmission peak” to “maximum” in a manner that could exclude “side lobes” contradicting the intrinsic record.

Only a few sentences later, the intrinsic record appears to refer to “transmission peaks” as synonymous with the entire communication beam **214**. ’235 Patent, 6:20-27 (“A determination to direct a transmission null and/or **a transmission peak (e.g. a communication beam 214)** in a particular direction can be made based on collected or otherwise provided routing information which may include a variety of data associated with the operation of the multi-beam directed signal system 206, wireless routing device, and other devices at other locations or nodes within the wireless network.”). In this context, a POSITA would understand that “transmission peaks” can refer to the entire communication beam 214, not only a single, absolute maximum portion of the beam pattern. Vojcic Decl. ¶¶ 60-65; Ex. 16 (defining beam as the pattern). Defendants’ proposed construction risks juror confusion regarding whether the “transmission peak” is limited to a single point in the pattern or, instead, refers to all of the portions of the pattern where a “generated and particular amount of energy is directed...to a desired receiving node, such as another wireless routing device or a wireless client device,” as taught in the specification. ’235 Patent, 6:1-9.

Defendants alternatively argue that the specification at 14:15-23 equates a “peak”

communication load with a “max” value—but this is a gross distortion of the intrinsic record, as this embodiment’s description of a “peak communication load” has to do with the “total number of active users” and the “load on each channel” from network traffic (“overall network communication load, or traffic” on a channel), not a transmission peak of a beam. ’235 Patent, 11:24-15:43. A review of the descriptions at 11:24-15:43 confirms that the “peak communication load” is a function of “channels” and “communication traffic load of channels” and does not refer to portions of a transmission pattern. ’235 Patent, 11:24-15:43; *see, e.g., id.* at 11:48-49 (“PeakLoadLimit which identifies a maximum load allowed on one channel”).

Plaintiff’s alternative proposed construction is also more consistent with the intrinsic record’s teachings regarding “transmission nulls.” The intrinsic record explains that transmission nulls occur in a transmission pattern where a “relatively insignificant amount of energy is transmitted in a particular direction.” ’235 Patent, 6:10-14. The patentee did not limit “transmission nulls” to only the portions of the pattern where “no transmission energy” occurs, and instead, the patentee clarified that “transmission nulls” also exist where “relatively insignificant amount of energy is transmitted in a particular direction.” *Id.* This expressed an intent by the patentee to capture the plain meaning of “transmission nulls,” which is broader than the absolute zero and instead extends to “relatively insignificant” portions of the pattern. *Id.*

The same is true for “transmission peaks,” which are not limited to absolute maxima and are instead understood by a POSITA to refer to relatively significant portions of the pattern—*i.e.*, in relation to transmission nulls. Vojcic Decl. ¶¶ 63-65; Ex. 16 (null is “local minimum”).

Further, while the patent never defines “transmission peaks” as limited to the point of “maximum” energy, the intrinsic record does explain that transmission peaks represent the *intent to maximize* transmission power in a desired direction. The patent explains that transmission peaks correspond to the “*intent to maximize* power in another direction (i.e. associated with a transmission peak).” ’235 Patent, 6:1-27. A POSITA would understand that the “intent to maximize” is broader than an actual “maximum” and covers the entire area of the beam—not only the absolute tip of the beam. Defendants’ attempt to limit the scope of “transmission peaks” to the

actual maximum rather than the entire beam area where there is an *intent to maximize* contradicts the intrinsic record. This “poses the risk that it will be used to change the meaning of claims in derogation of the ‘indisputable public records consisting of the claims, the specification and the prosecution history,’ thereby undermining the public notice function of patents.” *Phillips*, 415 F.3d at 1318-19. It should be rejected.

E. “third signal comprising content based on the set of weighting values” (’235 Patent, claims 1, 8 and 15)

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary	“third signal carrying content, wherein the content is based on the set of weighting values” <i>Alternatively</i> , “third signal comprising content that is based on the set of weighting values”

Defendants argue their proposed construction for this term is consistent with a preferred embodiment, which discloses that “any one or more of the electronic and computing client devices may also transmit information via the directed communication beams 508.” ’235 Patent, 8:66-9:1. Assuming that this supported Defendants’ proposed construction, it would nonetheless be error to limit the claims to a single embodiment or to several embodiments. Without clear and unambiguous disclaimer or lexicography, courts “*do not import limitations into claims from examples or embodiments*” appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment.” See *JVW Enterprises, Inc. v. Interact Accessories*, 424 F.3d 1324 (Fed. Cir. 2005).

Moreover, Defendants imported verbiage could be used to argue that the claims do not cover certain embodiments—injecting *more* ambiguity, not less. For example, claim 1 recites a “set of weighting values is configured to be used by the transceiver to construct one or more beam-formed transmission signals” and recites that the transceiver must transmit a “third signal comprising content based on the set of weighting values.” There are preferred embodiments where access station 102 constructs a beam-formed transmission signal comprising content based on a set of weighting values. For example, one embodiment discloses a “weighting matrix 1210 which operates to apply the latest weighting values to the received signals and also to transmitted signals”

which results in beam-forming. '235 Patent, 24:25-25:30; FIG 12. This embodiment discloses configuring weighting values in weighting matrix 1210 for use by transceiver 824 to construct beam-formed transmission signals. *Id.* A POSITA would understand this limitation without further construction in light of these and other embodiments. Vojcic Decl. ¶ 71.

As a further caution against inserting more verbiage, the Examiner agreed with Patent Owner that Provisional Application No. 62/423,660 discloses this limitation. Ex. 21 (Office Action Response, Jul. 25, 2018) (explaining this limitation is supported by disclosures at C-1 and C-4 providing, *inter alia*, that “signal level information is used to compute the complex weights for a second RF beamformer...” and “the beamforming algorithm computes the beamforming weights for a particular client (identified by its wireless MAC address) and stores it in a table which is made available to the application running the modified (polling) MAC protocol on ‘card 13.’”). The scope of this limitation must include the disclosures that the Patent Owner cited for this limitation during prosecution. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (“In construing the claims we look to the language of the claims, the specification, and the prosecution history...In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. The claims, the specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee’s claim.”). Further construction now would, if anything, muddy the waters.

Finally, Defendants do not explain whether their proposed construction is consistent with dependent claims 4 and 12, which specify that the *content* of the third signal must comprise data based on the weighting values. A POSITA understands dependent claims 4 and 12 to require that the *content* of the third signal must comprise the weighting values or related data because it is weighting values that “modify the placement of one or more transmission peaks and one or more transmission nulls in a subsequent signal transmission.” Accordingly, it is unclear whether Defendants’ proposed construction would render claims 4 and 12 superfluous. The Court should refrain from adding more ambiguity and preserve the full plain meaning of the claims.

F. “the set of weighting values is configured to be used by the [remote

station/transceiver] to construct one or more beam-formed transmission signals” (’235 Patent, claims 1, 8, 15)

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary	Indefinite

Defendants cannot show by clear and convincing evidence that this term is indefinite. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014); *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1377 (Fed. Cir. 2015). This claim phrase is readily understandable to a person of ordinary skill and does not need further construction. A preferred embodiment discloses a “weighting matrix **1210** which operates to apply the latest weighting values to the received signals and also to transmitted signals” which results in beam-forming. ’235 Patent, 24:25-25:30; FIG 12. This embodiment discloses configuring weighting values in weighting matrix **1210** for use by transceiver **824** to form beams and transmit signals comprising content via the beams. *Id.* A POSITA understands this, and certainly understands what each individual term in the claimed phrase means in light of the intrinsic record, which Defendants have apparently not disputed. Vojcic Decl. ¶ 67-75. To the extent Defendants subsequently dispute that a POSITA understands the terms within this phrase (e.g., “transceiver,”), Plaintiff reserves the right to respond with intrinsic and extrinsic evidence confirming such terms are understood by a POSITA.

1. *Geneva Pharmaceuticals* is inapplicable because the claims do not require a combination with an unclaimed device or object for a POSITA to ascertain whether they are infringed.

Defendants’ indefiniteness argument rests almost entirely on *Geneva Pharms. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003). Defendants argue indefiniteness because a set of weighting values may be compatible with certain transceivers but not others, and the claims do not specify a particular type of transceiver. ECF No. 35 at 21. Accordingly, Defendants argue the claimed transceiver is analogous to the “bacterial infection” in *Geneva Pharms.* The problem in *Geneva Pharms.* was that it was impossible to ascertain whether the claims were infringed without combining the claimed compound with an unclaimed bacterium, and only some combinations would result in infringement. In other words, the claims same compound could infringe and not infringe depending on the bacterium being treated. *Geneva*

Pharms., 349 F.3d at 1384. The claims required “synergy” between the treatment and the (unspecified) bacteria, such that the claimed invention was “synergistically effective.” *Id.* Therefore, the claims required a combination of the treatment and the bacterium to ascertain whether the claims were infringed. *Id.* But *Geneva Pharms.* is inapplicable because the claims here require no such combination. Indeed, Defendants ignore the clear language of the claims at issue in a strained attempt to fit the claims to their indefiniteness theory. For example, claims 1 and 15 do not require a *combination with any other device*. Instead, claims 1 and 15 describe one device that determines a set of weighting values, where the *same device* also includes a transceiver that uses the weighting values to perform beamforming. ’235 Patent, cls. 1 and 15. Claims 1 and 15 do not recite combination with any other device or component, nor do the claims depend on the success of any combination of the claimed apparatus with another, unclaimed component.

The same is true of claim 8. While claim 8 contemplates that the weighting values are “configured to be used by the *remote station*” (rather than a *transceiver* within the claimed device), claim 8 does not require the successful combination with the remote station, much less that the remote station actually use the weighting values, for a POSITA to ascertain whether the “set of weighting values” is “configured to be used by the remote station.” Instead, a POSITA understands that this only requires that the device that is performing the method of claim 8 *prepare* or *arrange* the set of weighting values for subsequent use by the remote station. Vojcic Decl. ¶ 73.

Further, the antecedent basis in claim 8 for “remote station” provides a POSITA with the only other information that a POSITA would need to ascertain when the set of weighting values is appropriately configured for use by the remote station. A POSITA can ascertain if the “set of weighting values” is “configured to be used by the remote station” because of the earlier claim limitation which recites that the “set of weighting values” is determined based on the “first signal” and “second signal” that are received simultaneously from the remote station. Vojcic Decl. ¶¶ 72-74. This antecedent basis for “remote station” in claim 8 clarifies to a POSITA that the subsequent limitation reciting “configured to be used by the remote station” *does not require combination with the remote station*, and instead requires that the set of weighting values be determined for *that*

remote station based on *that* station's received signals. Because combination with the remote station is not needed to ascertain whether the set of weighting values are configured for use by the remote station, *Geneva Pharmaceuticals* is inapplicable here.

2. *Geneva Pharmaceuticals* is also inapposite because the same apparatus cannot both infringe and not infringe the claims depending on some unclaimed contingent possibility.

Further still, the fundamental concern with the claims in *Geneva Pharms.* was that the same claimed compound could both infringe and not, depending on the bacterium being treated. But in the claims here, the same apparatus *cannot* both infringe and not infringe. For this additional reason, *Geneva Pharms.* is inapposite.

a. Claims 1 and 15

Beginning with claims 1 and 15, the claim language confirms exactly which embodiments are covered by the claims and which are not. Each claim recites a receiver (or apparatus) comprising an antenna, a transceiver, and a processor. The claims further recite receiving a first and second signal transmission from a remote station and determining a "set of weighting values" that "is configured to be used *by the transceiver* to construct one or more beam-formed transmission signals." If the claimed receiver determines a "set of weighting values" that *is* "configured to be used by the transceiver" in that device, then the claim covers that embodiment.

Defendants argue that the scope of claims 1 and 15 depends on the operation of "some other device" whose "qualities are not specified anywhere in the claim." ECF No. 35 at 22. This ignores the claim language, which confirms that the "transceiver" is part of the claimed apparatus. Claim 1 also specifies qualities of the claimed "transceiver"—for example, the "set of weighting values" must be "configured to be used *by the transceiver* to construct one or more beam-formed transmission signals," and the transceiver must actually "transmit a third signal to the remote station via the antenna, the third signal comprising content based on the set of weighting values." '235 Patent, 32:35-58. According to Defendants, this is indefinite because a set of weighting values may be compatible with certain transceivers but not others. ECF No. 35 at 21. Not so. Claims 1 and 15 only cover embodiments where the set of weighting values are configured to be used by

the claimed transceiver. Otherwise, the claims do not cover the apparatus. Vojcic Decl. ¶¶ 66-71.

A POSITA would further understand the scope of claims 1 and 15 in light of the intrinsic record. At least one preferred embodiment discloses a “weighting matrix **1210** which operates to apply the latest weighting values to the received signals and also to transmitted signals” which results in beam-forming. ’235 Patent, 24:25-25:30; FIG 12. The embodiment discloses configuring weighting values in weighting matrix **1210** for use by transceiver **824** to form beams. *Id.* Defendants identify nothing in the intrinsic record supporting their indefiniteness argument.

b. Claim 8

Claim 8 requires the weighting values be arranged for use in the *remote station*, rather than the apparatus’s own transceiver as in claims 1 or 15. Based on this distinction, Defendants argue *Genera Pharms.* applies to claim 8 because the “same set of weighting values could be configured to be used in one type of remote station, but not for another.” ECF No. 35 at 21.

However, Defendants’ argument ignores earlier claim limitations requiring that the “set of weighting values” be determined from the “first signal” and “second signal” received simultaneously from the remote station, so that a POSITA understands whether a “set of weighting values” is covered by the claims without any further experimentation or process involving the remote station. Vojcic Decl. ¶¶ 72-74. Defendants’ interpretation is therefore unsupported by the claim and must be rejected. *See Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (“[T]he claim construction inquiry ... begins and ends in all cases with the actual words of the claim.”). A POSITA understands the “set of weighting values” in claim 8 must be arranged for use by the remote station based on the “first signal” and “second signal” received simultaneously from the remote station—no further analysis of the “remote station” is needed to ascertain whether the “set of weighting values” is appropriate for it. Vojcic Decl. ¶¶ 72-74.

This distinguishes *Geneva Pharms.*, because in that case, the claimed compound was not determined based on the bacterium being treated. Instead, the claimed compound was the same regardless of the bacterium being treated, but would only actually satisfy the claim language’s “synergy” requirement for certain bacteria and not others. *Geneva Pharms.*, 349 F.3d at 1384. This

made it impossible to ascertain whether the claims were infringed without combining the claimed compound with an unclaimed bacterium. *Id.* But here, the “set of weighting values” for the remote station *is determined based on the first and second signals received from the same remote station.* This is the opposite of the compound in *Geneva Pharms.*, which was not determined based on anything specific to the unclaimed bacterium, making it impossible for a POSITA to determine if the compound would be synergistically effective until a particular bacterium was treated. The problem with Defendants’ *Geneva Pharms.* analogy is that it ignores the ordered combination of the limitations of claim 8 and focuses only on the “set of weighting values configured to be used” limitation in isolation. Defendants’ argument also ignores the antecedent basis for “remote station” in the earlier claim limitations. Claim 8 does not cover “determining a set of weighting values” that is analogous to the *Geneva Pharms.* compound, where a POSITA would not know whether the “set of weighting values” is “configured to be used by the remote station” until a particular type of remote station is identified (as was the case for the bacterium in *Geneva Pharms.*). Instead, a POSITA understands that the claimed method requires determining a set of weighting values (the “compound”) using specific first and second signals received simultaneously from the remote station (the “bacterium”). A POSITA thus understands which “sets of weighting values” without further analysis of the remote station. Vojcic Decl. ¶¶ 72-74.

G. “remote station” (’235 patent, claims 1, 4, 8, 9, 12, 15)

XR’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning; no construction necessary.	Plain and ordinary meaning, which is “remote client device”

The term “remote station” is a textbook example of one which needs no further construction. It is a term that has a widely understood, clear, and plain meaning to a person of ordinary skill in the art—namely, a remote communications device in a wireless network. Vojcic Decl. ¶¶ 77-82. Defendants’ proposal is intended to exclude remote *access* stations from the construction of “remote station.” This proposal contradicts the plain meaning of “remote station” as well as the intrinsic record, and it should be rejected.

1. Defendants’ proposal contradicts the intrinsic record.

There is a “*heavy presumption*” that claim terms carry their “full ordinary and customary meaning, unless [the accused infringer] can show the patentee *expressly relinquished* claim scope.” *Epistar*, 566 F.3d at 1334 (Fed. Cir. 2009). “There are *only two exceptions*” in which claim terms are not given their full ordinary and customary meaning: “1) when a patentee sets out a definition and acts as his own *lexicographer*, or 2) when the patentee *disavows* the full scope of a claim term either in the specification or during prosecution.” *Thorner*, 669 F.3d at 1365. Here, there has been no lexicography by the patentee, as the term “remote station” was not provided any special meaning within the intrinsic record. Nor has there been disclaimer, which requires a “clear and unambiguous disavowal of claim scope.” *Omega Eng’g*, 334 F.3d at 1325 (Fed. Cir. 2003). Thus, construing this term would be contrary to Federal Circuit guidance on how courts should conduct claim construction, which makes clear that district courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims. *O2 Micro Int’l*, 521 F.3d at 1362.

Defendants do not argue lexicography or disclaimer, and yet their proposed construction (“remote **client device**” for “remote **station**”) replaces the plain and ordinary term “station” with a different term—“client device.” Defendants agree that the intrinsic record does not define “remote station” as “remote client device.” ECF No. 35 at 24. Instead, Defendants assert that “remote station” should be construed as “remote client device” because the term “remote client device” appears in *certain preferred embodiments*, such as the FIG. 1, 2, and 9 embodiments. *Id.* Alternatively, Defendants identify a different embodiment from the Provisional Application where “remote stations” appears to be used in a manner that is describing laptops. *Id.* at 25. But it would be error to limit the claims to a single embodiment or to several embodiments. Without clear and unambiguous disclaimer or lexicography, courts “*do not import limitations into claims from examples or embodiments* appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment.” *See JWW Enterprises, Inc. v. Interact Accessories*, 424 F.3d 1324 (Fed. Cir. 2005).

Defendants’ proposal to construe “remote station” as “remote client device” is also wrong because it discards the claim language in favor of certain embodiments in the specification.

Defendants' proposal replaces a term appearing in the claims ("station") with a term that does not appear in the claims ("client device"), even though the intrinsic record uses both terms ("station" and "client device"). In these circumstances, it is error to replace the term in the claims ("station") with a different term ("client device") appearing elsewhere in the intrinsic record. After all, it is the actual words of the claims that matters most. *See Renishaw*, 158 F.3d at 1248 ("[T]he claim construction inquiry ... begins and ends in all cases with the actual words of the claim.").

Further, Defendants' proposal contradicts other preferred embodiments that disclose remote stations that correspond to remote *access* stations. Vojcic Decl. ¶¶ 82-93. Defendants' proposed construction would exclude these preferred embodiments—which cannot be correct. For example, the claims recite determining a set of "weighting values" based on "signal information from a remote station." *See, e.g.*, '235 Patent, 32:40-55 (cl. 1), 33:15-29 (cl. 6). And preferred embodiments disclose determining a set of "weighting values (w)" based on "received signals" from remote access stations and remote client devices ("desired sources") *as well as* remote access stations that are causing interference ("interferers"). '235 Patent, 6:1-9 ("Transmission peaks are, therefore, associated with the signal path and/or communication beam to a desired receiving node, such as another wireless routing device or a wireless client device."), 24:25-25:30 ("scanning receiver 822 may identify information about different classes of interferers (e.g., known and unknown types) within routing information 1206....the routing table includes identifiers of the desired sources and other identifiers for the interferers ("Int")...a description of the received signal(s) can be stored in the routing table in the form of the pattern or weighting of the signal(s)"); *see also* 15:59-16:10.

As shown in FIG. 12, preferred embodiments maintain "stored weighting values (w) each associated with a particular signal source," including signals from remote access stations or client stations that are desired receiving nodes, as well as remote access stations that may be interfering with communications (these are identified as "Int" in routing table **1206**). '235 Patent, 24:25-25:30, FIG. 12. Remote access stations can correspond to the specification's "interferers," including "other nodes" in the same network, or remote access stations operating another wireless

network (“WLAN 1204”). *Id.*; *see* Vojcic Decl. ¶¶83-90. The “routing table” includes “stored weighting values (w)” particular to interfering remote access stations, where “zeroes represent directions for communication that should be nulled out to prevent self-interference or interfering with other nodes or possibly other known wireless communication systems, such as WLAN 1204 that is not part of the wireless routing network, but is operating within at least a portion of a potential coverage area 1208 and frequency bands.” ’235 Patent, 24:25-25:30. The specification consistently explains that “scanning logic 1008 may scan across communication beams 214 to detect the presence of other access points (e.g., non-co-located access points) that are causing interference on a regular or constant basis.” ’235 Patent, 22:56-23:4.

Preferred embodiments describe how to detect and mitigate interference from remote “stations” (“nodes”)—including remote *access* stations—by placing “transmission nulls” toward “other devices at other locations or nodes within the wireless network.” ’235 Patent, 6:10-27. The patent explains that a “transmission null is associated with a signal path or lack of a communication beam towards an undesired, possibly interfering, device and/or object...a determination to direct a transmission null and/or transmission peak (e.g. a communication beam 214) in a particular direction can be made based on collected or otherwise provided routing information which may include a variety of data associated with the operation of the multi-beam directed signal system 206, wireless routing device, and **other devices at other locations or nodes within the wireless network.**” ’235 Patent, 6:10-27.

Indeed, the intrinsic record consistently describes determining weighting values for remote “stations” corresponding to other “node[s] in the wireless network”—including remote *access* stations—for the placement of “station interference nulls.” ’235 Patent, 15:59-16:10 (describing “known station interference nulls” and “unknown station interference nulls” for each “node in the wireless network,” including remote access stations). Because the patent describes determining weighting values to place “station interference nulls” in the direction of other “nodes in the wireless network” that are remote *access* stations, it would be error to exclude remote access stations from the construction of “remote station.” ’235 Patent, 15:59-16:10 (preferred

embodiment discloses maintaining “routing information” in the form of a “routing table” that includes the “IP address [] of a node in the wireless network” together with various parameters corresponding to that remote station, including “received signal strength indicator (RSSI) level from a node,” “**known station interference nulls**,” and “**unknown station interference nulls**”). A POSITA understands the term “node in the wireless network” here refers to a remote access station. Vojcic Decl. ¶¶ 83-90. A POSITA also understands that the “routing table” includes weighting values that place “station interference nulls” at the location of these remote nodes, which are remote *access* stations. *Id.*

The intrinsic record also discloses placing “transmission peaks” at the location of “desired receiving nodes” including “*another wireless routing device* or a wireless client device,” and a POSITA would understand that both are “remote stations.” Vojcic Decl. ¶ 89; ’235 Patent, 6:1-9 (“Transmission peaks are, therefore, associated with the signal path and/or communication beam to a desired receiving node, such as another wireless routing device or a wireless client device.”).

As yet another example, the intrinsic record describes remote *access* stations participating in 802.11 carrier sense multiple access/collision avoidance operations—and it uses the term “station,” rather than the term “client device,” in this context. ’235 patent, col. 20:32-46 (“The media access technique in 802.11 is based on a Carrier Sense Multiple Access (CSMA) operation in which *each station transmits only when it determines that no other station is currently transmitting*. This tends to avoid collisions that occur when two or more stations transmit at the same time where a collision would typically require that a transmitted packet be retransmitted.”); 23:32-24:24 (FIG. 11 embodiment describing a “notforus() function indicates that *a frame was not addressed to a particular station*.”). Remote stations—including remote access stations, base stations, or client stations—will participate in an 802.11 CSMA operation. Vojcic Decl. ¶ 87. The plain meaning of “remote station” includes remote access stations that participate in the CSMA operation. *Id.* As Defendants’ construction contradicts the intrinsic record, it must be rejected.

2. Extrinsic evidence does not support Defendants’ proposal.

Defendants next turn to extrinsic evidence, arguing that two U.S. patents and three

publications appear to use the term “remote station” to refer to client devices. But undue “reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims[.]” *Phillips*, 415 F.3d at 1318-19. Moreover, Defendants’ proposed construction would not cover other usages of “remote station” that fall within the ordinary meanings of the term. For example, Dr. Vojcic has explained that the term “remote station” would be understood by a POSITA as covering remote access stations and remote clients. Vojcic Decl. ¶¶ 88-95. Indeed, the term “station” is understood to a POSITA as broader than the “access station” / “client device” dichotomy advanced by Defendants, as the term “station” was understood by ordinary artisans in the early 2000’s based on its use in the IEEE 802.11 standard, which disclosed that a group of “stations” can operate in at least two modes: a self-organizing ad hoc mode, *or* an “access station” mode where one station is actually serving as an anchor to provide access to wired or wire-line infrastructure, in which case the anchor station would be called an access station. Vojcic Decl. ¶ 95 (confirming agreement with the testimony of Dr. Anthony Acampora (Ex. 9 at 31-32)). Further, Dr. Vojcic explains that Wi-Fi stations can function as both an access station and a client station in a variety of circumstances. Vojcic Decl. ¶ 91-92. A POSITA understands that Wi-Fi access stations or access points can behave as a client station that connects to another access station. Vojcic Decl. ¶ 91-92.

Further, as shown above, Defendants’ approach to anchor their construction of this term in extrinsic evidence is especially problematic here, because the specification clarifies “station” is not limited to a client device and includes access stations, including in the context of determining “weighting values” based on received signals from a “remote station.” Vojcic Decl. ¶ 93-94. A POSITA in the field of wireless communications systems would understand the patent claims’ use of the term “remote station” can include remote access stations and remote client devices. *Id.*

V. CONCLUSION

For the foregoing reasons, the Court should adopt Plaintiff’s proposed construction and reject Defendants’ proposals.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that this document is being served upon counsel of record for Defendants on May 6, 2022 via electronic service.

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