UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

XR COMMUNICATIONS LLC dba VIVATO TECHNOLOGIES, Plaintiff, vs. RUCKUS WIRELESS, INC., Defendant.	Case No. 3:18-cv-01992-WHO **JUDGMENT**
vs. ARRIS SOLUTIONS INC., Defendant.	Case No. 3:18-cv-02736-WHO

Judgment is entered in favor of defendants ARRIS Solutions, Inc. and Ruckus Wireless, Inc., and against plaintiff XR Communications LLC dba Vivato Technologies, in accordance with the Order On Stipulation Of Final Judgment.

IT IS SO ORDERED.

Dated: October 15, 2021

William H. Orrick
United States District Judge

UNITED STATES DISTRICT COURT

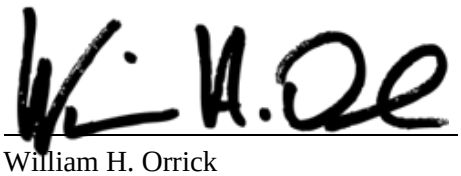
NORTHERN DISTRICT OF CALIFORNIA

XR COMMUNICATIONS LLC dba VIVATO TECHNOLOGIES, Plaintiff, vs. RUCKUS WIRELESS, INC., Defendant.	Case No. 3:18-cv-01992-WHO **JUDGMENT**
vs. ARRIS SOLUTIONS INC., Defendant.	Case No. 3:18-cv-02736-WHO

Judgment is entered in favor of defendants ARRIS Solutions, Inc. and Ruckus Wireless, Inc., and against plaintiff XR Communications LLC dba Vivato Technologies, in accordance with the Order On Stipulation Of Final Judgment.

IT IS SO ORDERED.

Dated: October 15, 2021



William H. Orrick
United States District Judge

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

XR COMMUNICATIONS, LLC,

Plaintiff,

v.

RUCKUS WIRELESS, INC., et al.,

Defendants.

Case No. 18-cv-01992-WHO

CLAIM CONSTRUCTION ORDER

Re: Dkt. No. 176

Plaintiff XR Communications LLC dba Vivato Technologies ("Vivato") accuses defendants Ruckus Wireless, Inc. and Arris Solutions, Inc. (collectively "defendants") of infringing United States Patent No. 6,611,231 (the "'231 Patent"). The parties agree on the proper claim construction of each term of the '231 Patent except for one term: "search receiver logic." Vivato contends that the term has a plain and ordinary meaning that needs no further construction. Defendants argue that the term is an empty nonce word that invokes means-plus-function treatment under 35 U.S.C. §112(6).

The disputed term does not include the word "means," so there is a rebuttable presumption that section 112(6) does not apply. That presumption, however, is not strong and defendants have carried their burden to overcome it. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348–49 (Fed. Cir. 2015). Vivato's argument to the contrary relies on the wrong pre-*Williamson* legal standard. Under the two-step means-plus-function analysis, Vivato fails to identify adequate corresponding structure to achieve the claimed function of the "search receiver logic," rendering the term indefinite.[1]

[1] On July 2, 2021, Vivato filed a notice of pendency of other action regarding two new cases it has filed in this District (also before me) and in the Western District of Texas: *XR Communications,*

BACKGROUND

The '231 Patent, entitled "Wireless Packet Switched Communication Systems and Networks Using Adaptively Steered Antenna Arrays," was issued on August 26, 2003. Declaration of Reza Mirzaie in Support of Opening Claim Construction Brief ("Mirzaie Decl.") [Dkt. No. 176-1], Ex. 1 ('231 Patent). The patent is directed towards technology for wireless communication, specifically Wi-Fi/802.11 access point technologies. A problem with "conventional wireless communications systems" that used "omni-directional antennas" for communication was that omni-directional transmissions could interfere with or otherwise restrict the use of other devices operating in the same frequency band. *Id.* at 1:49–54. The purported solution was to use "adaptively steered antenna arrays" to transmit multiple beams, referred to in the '231 Patent as "multi-beam electromagnetic signals." *Id.* at 1:15–18, 2:3–8.

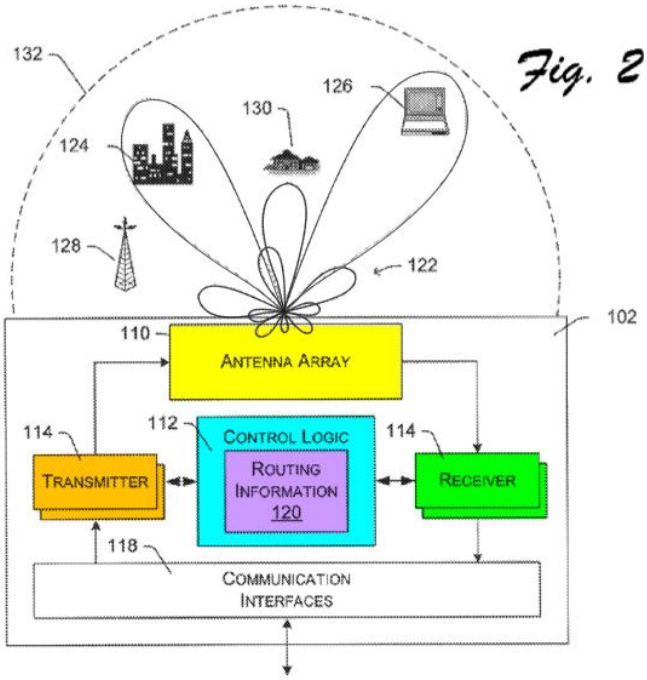
The multi-beam electromagnetic signals "[exhibit] a plurality of selectively placed transmission peaks and transmission nulls within a far field region of a coverage area," as illustrated in the wireless routing device 102 shown in Figure 2 below. *Id.* at 2:3–8, 6:1–11, 7:1–26. Figure 2 shows that adaptive antenna 110 outputs a multibeam pattern 122 with a plurality of "selectively placed transmission peaks" and "selectively placed transmission nulls." *Id.* at 7:1–26. The "selectively placed transmission peaks" are placed in the direction of buildings 124 and user

---

LLC dba Vivato Technologies v. Ruckus Wireless Inc., Case No. 3:21-cv-04679-WHO (N.D. Cal.) (the "2021 Ruckus Case") and *XR Communications, LLC dba Vivato Technologies v. Arris Solutions, Inc.*, Case No. 6:21-cv-00621 (W.D. Tex.) (the "2021 Arris Case"). *See* Notice of Pendency of Other Action [Dkt. No. 175]. The 2021 Ruckus case involves the '728 Patent, '376 Patent and '939 Patent and the 2021 Arris case involves the '728 Patent and '376 Patent. Because there is no overlap in the patents or patent infringement claims at issue between the 2021 cases and this consolidated case (which only involves the '231 Patent), Vivato contends that transfer or coordination should not be effected under Local Rule 3-13(b).

Defendants acknowledge that only the '231 Patent remains in this case but argue that the 2021 cases should still be transferred/coordinated because the '728 Patent was originally part this case and only dropped following successful *inter partes* reviews ("IPR") in which the asserted claims of the '728 Patent were invalidated. Response to Notice of Pendency of Other Action [Dkt. No. 177]. They point out that some of the accused products overlap as well. At the claim construction hearing, defendants further argued that the '728 Patent claims should be dismissed for collateral estoppel reasons. Any collateral estoppel argument can be raised in the 2021 cases. I agree with Vivato that there is no need to coordinate or transfer the 2021 cases because this case only involves the '231 Patent. To the extent the parties wish to consolidate the 2021 Ruckus case with the 2021 Arris case, that request can be made in the 2021 Ruckus case before me, which has a Case Management Conference set on September 28, 2021.

126. Those directions are "illuminated" because they are associated with a desired receiving node. *Id.* at 7:15–22, 6:11–15. On the other hand, the "selectively placed transmission nulls" are placed in the direction of external transmitter 128 and residence 130 because those directions are associated with "undesired, possibly interfering" devices or objects. *Id.* at 7:15–20, 6:16–23.



The parties agree that "selectively placed transmission peaks" are "portions of the electromagnetic signal transmission pattern where transmissions of significant energy are selectively directed," and that "selectively placed transmission nulls" are "portions of the electromagnetic signal transmission pattern where transmissions of no or insignificant energy are selectively directed." Joint Claim Construction and Prehearing Statement ("JCCS") [Dkt. No. 172] 1. They also agree that "an adaptive antenna" is "antenna array and supporting mechanisms configured to produce a transmission pattern that selectively places transmission nulls and peaks in certain directions within an applicable coverage area." *Id.*

Claim 1 of the '231 Patent recites an adaptive antenna, transmitter, receiver, and control logic, as depicted in Figure 2 above. It also discloses the disputed term: a "search receiver logic operatively coupled to said control logic and said at least one receiver and configured to update

said routing information based at least in part on cross-correlated signal information that is received by said receiver using said adaptive antenna." *Id.* at 29:22–26. The "search receiver logic" receives "cross-correlated signal information" as an input from the receiver and updates the "routing information" based "at least in part on cross-correlated signal information that is received" by the receiver. *Id.* at 29: 24–26. The routing information is then an input for the control logic, which causes the transmitter "to output at least one transmission signal to said adaptive antenna to transmit corresponding outgoing multi-beam electromagnetic signals exhibiting a plurality of selectively placed transmission peaks and transmission nulls[.]" *Id.* at 29:19–21. The parties agree to construe "cross-correlated signal information" and "cross-correlated signal information that is received by said receiver" as "signal information that has already been cross-correlated at the time it is received" and "signal information that has already been cross-correlated at the time it is received by said receiver." JCCS at 1.

LEGAL STANDARD

I. CLAIM CONSTRUCTION GENERALLY

Claim construction is a matter of law. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). "Generally, a claim term is given its ordinary and customary meaning—the meaning that a term would have to a person of ordinary skill in the art in question at the time of the invention." *Howmedica Osteonics Corp. v. Zimmer, Inc.*, 822 F.3d 1312, 1320 (Fed. Cir. 2016) (internal quotation marks and citation omitted). In determining the proper construction of a claim, a court begins with the intrinsic evidence of record, consisting of the claim language, the patent specification, and, if in evidence, the prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005); *see also Vitronics*, 90 F.3d at 1582. "A claim term used in multiple claims should be construed consistently . . . ." *Inverness Med. Switzerland GmbH v. Princeton Biomeditech Corp.*, 309 F.3d 1365, 1371 (Fed. Cir. 2002).

"The appropriate starting point . . . is always with the language of the asserted claim itself." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of

ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313. "There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Such redefinition or disavowal need not be express to be clear. *Trustees of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1364 (Fed. Cir. 2016).

Like a person of ordinary skill in the art, courts read terms in the context of the claim and of the entire patent, including the specification. *Phillips*, 415 F.3d at 1313. The specification is "the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). The court may also consider the prosecution history of the patent, if in evidence. *Markman*, 52 F.3d at 980. The prosecution history may "inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Phillips*, 415 F.3d at 1317 (citing *Vitronics*, 90 F.3d at 1582–83); *see also Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.") (internal quotations omitted).

In most situations, analysis of this intrinsic evidence alone will resolve claim construction disputes, *Vitronics*, 90 F.3d at 1583; however, a court can further consult "trustworthy extrinsic evidence" to compare its construction to "widely held understandings in the pertinent technical field," *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999). Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. All extrinsic evidence should be evaluated in light of the intrinsic evidence, *Phillips*, 415

F.3d at 1319, and courts should not rely on extrinsic evidence in claim construction to contradict the meaning of claims discernible from examination of the claims, the written description, and the prosecution history, *Pitney Bowes*, 182 F.3d at 1308 (citing *Vitronics*, 90 F.3d at 1583).

II. MEANS-PLUS-FUNCTION CLAIMS

Certain claim terms may be construed as being in the "means-plus-function" format, which invokes 35 U.S.C. § 112(6).[2] *Williamson*, 792 F.3d at 1347. That provision states:

> 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.

35 U.S.C. § 112(6). The *Williamson* court noted that this section reflects "a balance in allowing patentees to express a claim limitation by reciting a function to be performed rather than by reciting structure for performing that function, while placing specific constraints on how such a limitation is to be construed, namely, by restricting the scope of coverage to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347.

Only purely functional limitations that do not provide the structure that performs the recited function constitute means-plus-function claiming. *Phillips*, 415 F.3d at 1311. "The standard 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." *Williamson*, 792 F.3d at 1349. "When a claim term lacks the word 'means,' the presumption can be overcome and [section] 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.*; *see id.* at 1348–49 (overruling those cases requiring a heightened evidentiary showing to overcome the presumption that section 112(6) does not apply when the claims lack the word "means"); *Advanced Ground Info. Sys., Inc. v. Life360, Inc.*, 830 F.3d 1341, 1347 (Fed. Cir.

[2] The America Invents Act ("AIA") changed the designation of 35 U.S.C. § 112(6) to 35 U.S.C. § 112(f). Because the asserted patent was filed before the effective date of the AIA, I refer to the pre-AIA version of this provision.

2016) ("In determining whether this presumption has been rebutted, the challenger must establish by a preponderance of the evidence that the claims are to be governed by [section] 112, [para.] 6.").

To determine the applicability of section 112(6), "[t]he standard 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." *Williamson*, 792 F.3d at 1349. If the limitation is in means-plus-function format, the court proceeds to the "two-step process" in construing a means-plus-function claim term. *Id.* at 1351. "The court must first identify the claimed function." *Id.* (citing *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012)). "Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function." *Id.* "Structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed. Cir. 2003) (quoting *B. Braun Med. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (internal quotations omitted)); *see, e.g., Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1331-32 (Fed. Cir. 2008) ("[I]n a means-plus-function claim in which the disclosed structure is a computer or a microprocessor programmed to carry out an algorithm, a corresponding structure must be a specific algorithm disclosed in the specification, rather than merely an algorithm executed by a computer"). If the specification fails to disclose adequate corresponding structure, the claim is indefinite. *Williamson*, 792 F.3d at 1352.

DISCUSSION

The parties' dispute turns on two inquiries: (i) whether the disputed "search receiver logic" term is a means-plus-function term under section 112(6) and, if so, (ii) whether the '231 Patent identifies corresponding structure such that the claim term survives as definite.

I. APPLICABILITY OF SECTION 112(6)

When the disputed claim does not use the word "means," as is the case here, there is a rebuttable presumption that section 112(6) does not apply, and it is defendants' burden to rebut that presumption by a preponderance of the evidence. *See Williamson*, 792 F.3d at 1348. That

presumption, however, is not strong. *Id.* a 1349 (overruling the characterization of the means-plus-function presumption as "strong," partly because the doctrine had "resulted in a proliferation of functional claiming").

Vivato recognizes the Federal Circuit's seminal ruling in *Williamson*, yet it relies on the very legal standard that *Williamson* overruled. *See* Plaintiff's Opening Claim Construction Brief ("Opening Br.") [Dkt. No. 176] 6; Plaintiff's Reply Brief ("Reply Br.") [Dkt. No. 179] 8 (arguing that defendants cannot overcome the presumption "without a showing that the limitation essentially is *devoid of anything that can be construed as structure*") (emphasis added); *Williamson*, 792 F.3d at 1348 ("We also overrule the strict requirement of 'a showing that the limitation essentially is *devoid of anything that can be construed as structure*.'") (emphasis added). It claims that the legal standard quoted in its briefs is taken from *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018), a post-*Williamson* case, but no such quote exists in that opinion. Instead, *Zeroclick* recites the correct post-*Williamson* legal standard: "[T]he presumption can be overcome, and [section] 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*.'" *Zeroclick*, 891 F.3d at 1007 (quoting *Williamson*, 792 F.3d at 1348) (emphasis added).

Vivato's argument that "search receiver logic" connotes structure and that a person of ordinary skill in the art ("POSITA") would recognize a "search receiver logic" as a class of structures used in wireless communications technology to detect, measure, or acquire information from signals, is also premised on the wrong legal standard. *See* Opening Br. 8. The inquiry is not whether a POSITA would have some general understanding as to the structure of the term "search receiver logic." It is whether a POSITA would associate a sufficiently definite structure with "search receiver logic" for performing the claimed function recited in the '231 Patent.

The Federal Circuit's recent opinion in *Egenera, Inc. v. Cisco Sys., Inc.*, 972 F.3d 1367 (Fed. Cir. 2020) illustrates this point. The plaintiff there argued that the term "logic" denotes "software, firmware, circuitry, or some combination thereof." *Id.* at 1374. The district court found that definition "so broad and formless" as to be "a generic 'black box' for performing the

recited computer-implemented functions." *Egenera, Inc. v. Cisco Sys., Inc.*, No. CV 16-11613-RGS, 2018 WL 717342, at *6 (D. Mass. Feb. 5, 2018). The Federal Circuit affirmed, clarifying that "[t]he question is not whether a claim term recites *any* structure but whether it recites *sufficient* structure—a claim term is subject to [section] 112(f) if it recites 'function without reciting sufficient structure *for performing that function*.'" *Egenera*, 972 F.3d at 1374 (quoting *Williamson*, 792 F.3d at 1348 (emphasis in original)). Accordingly, "even assuming ['logic'] connotes some possible structure in the general sense of software, firmware, or circuitry," the *Egenera* plaintiff failed to explain how it "amounts to '*sufficient* structure for performing [the claimed modifying] function.'" *Id.* (quoting *Williamson*, 792 F.3d at 1348 (emphasis in original)). The Federal Circuit tied the inquiry to the claimed function at hand: "the question is not whether 'logic' is utterly devoid of structure but whether the claim term recites sufficient structure to perform the *claimed functions*." *Id.* (emphasis added).

For these reasons, Vivato's proposition that "search receiver logic" is a known class of circuit structures for the general purpose of detecting and processing signals and the evidence it cites to support that proposition, including the numerous dictionaries and the testimony of its expert Dr. Branimir Vojcic, is fundamentally flawed. *See* Mirzaie Decl., Ex. 2 (Vojcic Decl. ¶ 38) (opining that "a POSITA would understand that 'search receiver logic' refers to the electronic circuits that make up the search receiver and execute its functions"). A so-called "known class of circuit structures" cannot be sufficient under the *Williamson* standard. *See, e.g., Synchronoss Techs., Inc. v. Dropbox Inc.*, No. 16-CV-00119-HSG, 2017 WL 6059302, at *7 (N.D. Cal. Dec. 7, 2017) ("Indeed, accepting Synchronoss's argument that a 'broad class of structures' is sufficient for functional claiming contravenes *Williamson*'s understanding of Congress's intent in enacting section 112[.]").

Applying the correct standard—whether the term "search receiver logic" conveys to a POSITA *sufficient structure* for performing the *claimed function*—Vivato agrees that one of the claimed functions of "search receiver logic" is to "update said routing information." *See infra* section II.A. Defendants offer the testimony of Dr. Kevin Negus to argue that "search receiver logic" recites function without reciting sufficient structure for performing that function. Dr.

Negus identifies two examples, from other fields, in which a POSITA might have heard of the term "search receiver," but found nothing about those examples that would inform a POSITA about structure associated with search receiver logic in the field of wireless communications or how to perform the claimed function (updating routing information). *See* Declaration of Sajid Saleem in Support of Defendants' Response to Plaintiff's Opening Claim Construction Brief ("Saleem Decl.") [Dkt. No. 178-1], Ex. 2 (Negus Decl. ¶¶ 111–18).

Dr. Negus explains that the most likely source for a POSITA hearing of the term is from "the field of signals intelligence within the larger field of electronic warfare," where the term "search receiver" is used to describe "non-communications equipment used to identify different types of signals within a battlespace." *Id.* at ¶ 114. A POSITA in that context, however, "would not expect such non-communications equipment to operate within 'a wireless routing network' and to utilize 'routing information'" in wireless communications device. *Id.* Dr. Negus also suggests that a POSITA might have heard of the term "search receiver" in the context of Global Positioning Systems ("GPS") receivers, where the term is sometimes used to "describe circuitry within GPS receivers that was used to acquire synchronization with the satellite transmitters." *Id.* at ¶ 115. "GPS receivers do not generally transmit at all," and the step of acquiring synchronization is "a very specific but challenging task" that is quite different from the recited functions of the "search receiver logic" claim limitation. *Id.*

Dr. Negus concludes that "a POSITA with a GPS-based understanding of the term 'search receiver' would not understand this term to convey sufficiently definite structure for performing the claimed function of the claim element 'search receiver logic.'" *Id.* Based on that opinion, defendants argue that even if the terms may have been used in electronic warfare or GPS receivers, the usage in those fields does not inform a POSITA about how to perform the claimed function or what is meant by the term in the claim.

Defendants further contend that the '231 Patent's specification does not describe "search receiver logic" consistent with its common usage in the fields of electronic warfare devices and GPS receivers. For instance, the description accompanying Figure 22 (further discussed below) states that it is a "functional flow diagram depicting processing associated with an exemplary

search receive process 600." '231 Patent at 25:65–66. The specification then describes at length the "functional flow" of the "exemplary search receiver process," but only does so in generic functional terms without referring to any "search receiver" structure, whether from electronic warfare, GPS receivers, or any other field. *Id.* at 25:67–26:34. As Dr. Negus explains, the functions recited in the claims and the process described in Figure 22 have nothing to do with potentially-known search receivers in other fields. Negus Decl. ¶¶ 116–17.

Vivato counters that defendants' argument is undercut by the following exchange in Dr. Negus' deposition testimony:

> Q. Okay, so you're not opining that search receiver logic fails to convey *any* structure to a POSITA in this field. Fair?
>
> A. Yeah that's fair. [I can't say] that a POSITA would hear the term "search receiver logic" and say oh, that's some abstract thing that's *absolutely unrelated to any structure* []."

Mirzaie Decl., Ex. 3 (Negus Dep. at 85:12–22) (emphasis added). But Vivato is relying on the wrong pre-*Williamson* legal standard.[3] Defendants are not required to show that the limitation is essentially *devoid of anything* that can be construed as structure;" instead, they must "demonstrate[] that the claim term fails to recite *sufficiently definite structure* or else recites function without reciting *sufficient structure for performing that function*." *Williamson*, 792 F.3d at 1349 (internal quotation marks and citations omitted) (emphasis added). That is what defendants have done here.

Vivato argues that Dr. Negus was shown another patent during his deposition, U.S. Patent No. 7,426,392 entitled "Search Receiver Using Adaptive Detection Thresholds" and filed in May 2002, that he admitted demonstrates that a POSITA in the exact same field as the '231 Patent knew about search receivers and search receiver logic structures. *See* Negus Dep. at 80:6–83:7. Dr. Negus made no such admission in his testimony. He said that the '392 Patent, a patent he had

[3] Dr. Negus also recognized that Vivato was relying on the wrong legal standard after the exchange quoted above. *See* Negus Dep. at 86:3–12 ("But under [the Federal Circuit's] standard, which I understand to be that the words of the claim itself need to provide a sufficient recitation of structure that will perform the claimed function, it's clear to me that search receiver logic does not get you there. It does not convey to a POSITA sufficient structure to perform the very specific claim function that's within Claim 1 as well as Claim 5 and Claim 12.").

not reviewed before his deposition and was "not familiar with," appears to be "within the field of wireless communications." *Id.* at 83:3–25. He went on to state the following based on a "quick look" at the '392 patent: "And I see nothing that would suggest to me that this patent is providing a disclosure of a structure that would be sufficient in order to inform a person of ordinary skill in the art how to update routing information for the control logic of Claim 1 based, at least in part, on cross-correlated signal information that is received by said receiver using said adaptive antenna." *Id.* at 84:15–85:1.

In addition to Dr. Negus' testimony, which I find persuasive, defendants argue that the term "logic," considered on its own, further demonstrates that the claim term "search receiver logic" fails to recite sufficiently definite structure. The '231 Patent defines "logic" in its "Terminology" section as:

> hardware, firmware, software, or any combination thereof that may be implemented to perform logical operations associated with a given task. Such, logic may further include any supporting circuitry that may be required to complete a given task including supportive non-logical operations. For example, "logic" also may include analog circuitry, memory, input/output (I/O) circuitry, power providing/regulating circuitry, etc.

'231 Patent at 6:34–42. Defendants contend that these broad descriptions of logic mean that anything can perform the recited function, making it clear that "logic" was intended to be a "nonce" word in the context of the '231 Patent, *i.e.*, a word that operates as a substitute for "means" in the context of section 112(6). They cite other cases that have similarly found "logic" to be no more than a 'black box recitation of structure' that is simply a generic substitution for 'means.'" *See, e.g.*, *Egenera*, 972 F.3d at 1374–75 (affirming "logic to modify" was a means-plus-function limitation, in part because the patent specification states that "logic has to be implemented" and the implementation could be "software logic" or "BIOS-based," and that description was, as the district court concluded, "consistent with an understanding of logic as an abstraction for the set of steps designed to accomplish a stated function).[4]

[4] The single case that Vivato cites, which found terms "logic" and "logic configured to" were not means-plus-function terms in the context of an exercise equipment patent, is distinguishable because defendants there only offered conclusory arguments and "produce[d] no evidence to rebut [the section 112(6)] presumption, let alone a preponderance of such evidence." *VR Optics, LLC v.*

Vivato responds that the term "logic" cannot be viewed in isolation, but even if it were, extrinsic evidence, including the testimony of its expert Dr. Vojcic and the supposed admissions made by Dr. Negus,[5] shows that a POSITA would understand that the term "logic" is limited to electrical circuitry. Defendants correctly argue that Vivato cannot use extrinsic evidence to avoid the broad definition of "logic" contained in the '231 Patent. *See Thorner*, 669 F.3d at 1365 (explaining that one of the exceptions to the general rule that claims are given their ordinary and customary meaning is "when a patentee sets out a definition and acts as his own lexicographer"); *see, e.g.*, *BookIT Oy v. Bank of Am. Corp.*, 817 F. App'x 990, 994 (Fed. Cir. 2020) ("There can be no clearer definitions than those expressly recited in the patent."); *Braintree Labs., Inc. v. Novel Labs., Inc.*, 749 F.3d 1349, 1355–56 (Fed. Cir. 2014) (reversing claim construction that narrowed term beyond clear definition introduced with the language "as used herein"). Vivato fails to explain why I should give "logic" a narrower meaning when the '231 Patent itself defines "logic" in broad functional terms.

Vivato claims that defendants' position with respect to the term "logic" is undermined by Dr. Negus' admission that the surrounding claim term "control logic" is not a means-plus-function term. The cited portions of his deposition testimony reveal otherwise. Dr. Negus did not admit that "control logic" is not a means-plus-function term, he simply stated that he did not express an opinion on the "control logic" term: "I don't express an opinion with respect to the control logic claim element in this declaration other than its relationship to search receiver logic." Negus Dep. at 20:2–10. He said that he "[had] not expressed an opinion with respect to control logic and indefiniteness" and that he "[had] not put forth [his] opinions with respect to whether control logic should be a [section 112(6)] element." *Id.* at 21:7–14, 21:15–24. Defendants further clarify in

---

Peloton Interactive, Inc., 345 F. Supp. 3d 394, 410 (S.D.N.Y. 2018).

[5] Vivato mischaracterizes Dr. Negus' testimony in this regard as well. Dr. Negus recognized that the term "logic" in isolation "connotes general purpose digital computing elements" but went on to say "'logic,' of course, is a term that's actually defined in the '231 Patent." Negus Dep. at 38:15–39:25. He explained that the '231 Patent's definition of "logic" is "quite an expansive meaning; I'd say more expansive than I'm used to seeing over the years. But, again, you know, patentees or applicants can be their own lexicographers. So there's nothing wrong with the applicants choosing to define 'logic' with this extraordinary expanse of scope, as they have." *Id.* at 40:17–24.

briefing that they never conceded that "control logic" is not a means-plus-function claim. Rather, they decided to limit the terms for construction to those that were necessary to resolve the parties' dispute.

Shifting gears to focus on other words within the disputed "search receiver logic" term, Vivato argues that the term "receiver" and "search receiver" are well-known terms of art, which means that the term "search receiver" adds structure by describing the logic's operation. *See* Vojcic Decl. ¶¶ 37–38 (testifying that the term "receiver" is well known to a POSITA as an electronic device that receives radio-frequency signals and the term "search receiver" is a specific type of receiver that is "tuned over a relatively wide frequency range in order to detect, identify, or measure electromagnetic signals" (citing Mirzaie Decl., Ex. 5, Martin H. Weik, Communications Standard Dictionary at p. 969 (2d. ed. 1989)); *see also* Mirzaie Decl., Ex. 6, Rudolf F. Graf, Modern Dictionary of Electronics, at 507 and 892 (Charlie Buffington et. al. eds. 6th ed. 1997) (defining "intercept receiver," which is "[a]lso called search receiver," as "[a] specially calibrated receiver which can be tuned over a wide frequency range in order to detect and measure enemy rf signals").

These definitions of "receiver" and "search receiver" do not inform a POSITA about the structure that performs the functions recited in the disputed term "search receiver logic." As Dr. Negus explains, a POSITA would not understand that a "receiver" or "search receiver," or any known structures of "receiver" and "search receiver" from different fields, perform the function of updating routing information. Negus Decl. ¶ 106; *see also* Negus Dep. at 70:18–71:5 (acknowledging that "receiver" and "search receiver" were known terms of art but explaining that "what was known about 'search receiver,' as I went into considerable detail in this declaration, was that the known search receivers of the time frame of 2001 would not connote structure that would be capable of performing the recited function of the claim element -- search receiver logic claim element in the Claim 1 of the '231 Patent"). Dr. Negus also notes that the terms "search receiver" and "search receiver logic" were not used to describe components within wireless networking products, as evidenced by the terms not being mentioned in the IEEE Dictionary of Standards Terms. Negus Decl. ¶¶ 112–13.

Finally, Vivato argues that defendants' failure to consider the claim language surrounding "search receiver logic" is fatal to their position. Claim 1 discloses a "search receiver logic" that is "*operatively coupled to*" the "adaptive antenna," the "receiver," and the "control logic," all of which are indisputably physical structures depicted in Figure 2 (see image in Background section above). '231 Patent at 29:22–26 (emphasis added). In Vivato's view, this confirms that "search receiver logic" describes a class of structures, as it is "coupled to" other elements that are physical structures.

That the "search receiver logic," which notably is not depicted in Figure 2, is operatively coupled to structural components depicted in Figure 2 does not automatically mean that a POSITA would know that the "search receiver logic" is also a structural component merely by proxy. A "search receiver logic" being "operatively coupled" to other structural components tells a POSITA little about the structure that performs the claimed function of "search receiver logic." *See* Negus Decl. ¶¶ 121–26.[6] A similar argument was rejected in *Egenera*, where the plaintiff argued that the larger claim context indicated that the disputed term was structural because it was "part of a supposedly structural component." *Egenera*, 972 F.3d at 1374. The Federal Circuit found "that [was] not enough" because "[m]ere inclusion of a limitation within a structure does not automatically render the limitation itself sufficiently structural" and reiterated that "the question is not whether [the disputed term] is utterly devoid of structure but whether the claim term recites sufficient structure to perform the claimed functions." *Id.*

Because "search receiver logic" does not connote "sufficiently definite structure" to a POSTIA or else recites "function without reciting sufficient structure for performing that function," defendants have met their burden to rebut the presumption against application of section

[6] In particular, Dr. Negus concludes: "Therefore, a POSITA would understand that these various 'operatively coupled' limitations among the various elements of Claim 1 and the requirement that the 'information' must be 'received by said receiver using said adaptive antenna' are insufficient to inform with reasonable certainty what the structure must be that performs the recited functions for the claim element 'search receiver logic . . . configured to' in Claim 1 at least because a POSITA would know that the necessary algorithm needed to 'update … based at least in part upon cross-correlated signal information that is received by said receiver using said adaptive antenna' is different than that needed to 'update … based at least in part upon' other types of possible 'information that is received by said receiver using said adaptive antenna.'" Negus Decl. ¶ 125.

112(6). *Williamson*, 792 F.3d at 1349. The "search receiver logic" term is a means-plus-function term because a POSITA would not understand the term to describe the relevant structure to perform the claimed function.

II. TWO-STEP MEANS-PLUS-FUNCTION ANALYSIS

Having determined that "search receiver logic" is subject to section 112(6), I now turn to whether the specification discloses sufficient structure that corresponds to the claimed functions. The inquiry here is two-fold: (i) "identify the claimed function" and (ii) "determine what structure, if any, disclosed in the specification corresponds to the claimed function." *Williamson*, 792 F.3d at 1351 (citation omitted). "Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions." *Id.* at 1351–52. "If the patentee fails to disclose adequate corresponding structure, the claim is indefinite." *Id.* at 1352.

A. Claimed Functions

The parties provide the following claimed functions in their joint statement:

	Vivato's Proposal	Defendants' Proposal
Claim 1	update routing information based at least in part on cross-correlated signal information that is received by said receiver using said adaptive antenna	update *said* routing information based at least in part on cross-correlated signal information that is received by said receiver using said adaptive antenna
Claim 5	dynamically determine and maintain at least a portion of said routing information	dynamically determine and maintain at least a portion of said routing information
Claim 12	determine at least one transmission constraint based at least in part on the received signal	determine at least one transmission constraint based at least in part on *said* received signal, *said transmission constraint being included in said routing information*

See JCCS, Ex. A at 1 (differences in defendants' proposal emphasized). The parties agree on the function of claim 5. Defendants say it is unclear whether there is a still a disagreement as to the functions of claims 1 and 12. I address it to the extent there is any disagreement but note that the

parties only focus on the claimed function of claim 1 to determine if the second step of the two-step means-plus-function analysis has been satisfied.

Claim 1 Function: In the JCCS, Vivato's proposed function for claim 1 was simply "update routing information" instead of "update *said* routing information." JCCS, Ex. A at 1. But in its opening brief, Vivato states that the function is "update *said* routing information," without clarifying whether it has changed its position. Opening Br. 5–6. Vivato does not confirm this point in its reply brief but it does say that the parties agree that the claimed function centers on updating or maintaining "routing information" and that it does so by using already "cross-correlated" signal information. *See* Reply Br. 8, 13 (citing '231 Patent at 26:7–12, 26:27–31).

I adopt defendant's construction here: "update *said* routing information based at least in part on cross-correlated signal information that is received by said receiver using said adaptive antenna." Claim 1 introduces the term "routing information" in the "control logic" limitation (the limitation before "search receiver logic"). The "control logic" is "configured to . . . cause said adaptive antenna to transmit corresponding outgoing multi-beam electromagnetic signals exhibiting a plurality of selectively placed transmission peaks and transmission nulls within a far field region of a coverage area based on routing information." '231 Patent at 29:14–21. Defendants' construction, "update *said* routing information," clarifies what "routing information" the "search receiver logic" is configured to update. *See* Negus Decl. ¶¶ 198–201

Claim 12 Function: I adopt defendant's construction here as well: "determine at least one transmission constraint based at least in part on *said* received signal, *said transmission constraint being included in said routing information*." The construction "*said* received signal" as opposed to "the received signal" reflects the function as it is recited in claim 12. *See* '231 Patent at 30:23–26 (claim 12 reciting that the "search receiver logic is configured to determine at least one transmission constraint based at least in part on *said* received signal, said transmission constraint being included in said routing information") (emphasis added). Claim 12 also requires that "at least one transmission constraint" be "included in said routing information," which is captured by defendants' proposal by adding to the latter part of the sentence "*said transmission constraint being included in said routing information*." Vivato does not make any argument concerning

claim 12's function in its reply brief, focusing solely on claim 1's function.

B. Whether the Specification Discloses Corresponding Structure that Performs the Claimed Functions

Addressing the claimed function of claim 1, I next determine "what structure, if any, disclosed in the specification corresponds to the claimed function." *Williamson*, 792 F.3d at 1351 (citation omitted). "Structure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim." *Id.* at 1352. Vivato identifies the "search receiver 164" of Figure 18 as the corresponding structure for claim 1's function, as well as the "processes 610 and 612" of Figure 22 and the corresponding portions of the specification at 26:7–17 and 26:27–31. *See* JCCS, Ex. A at 1; Opening Br. 17–19; Reply Br. 12–15. Defendants rely on the expert testimony of Dr. Negus to explain how Figure 18 and Figure 22 do not show corresponding structure.

To repeat, the claimed function of claim 1 is: "update said routing information based at least in part on cross-correlated information that is received by said receiver using said adaptive antenna." The parties agreed that the term "cross-correlated signal information that is received by said receiver" means "signal information that has *already been cross-correlated* at the time it is

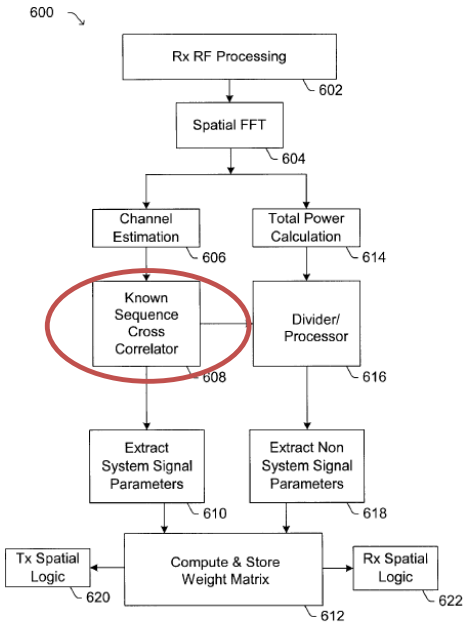


Fig. 22

received by said receiver." JCCS at 1 (emphasis added). That is, cross-correlation must occur *before* it is received by said receiver. Defendants argue that Figure 22 in the '231 Patent discloses an apparatus performing cross-correlation *after* it is received and as a part of a search receiver process, and thus cannot qualify as corresponding structure. *See* Negus Decl. ¶¶ 218–24.

Figure 22 is described as a "functional flow diagram depicting processing associated with an exemplary search receiver process 600." '231 Patent at 25:66–67. At the outset in step 602, "a receiver processes the RF signal received with an antenna array." *Id.* at 25:67–26:1. The "resulting element domain values are provided to 604, wherein a spatial FFT process converts them into corresponding pattern domain values," which are then provided to step 606, "wherein a FFT process or other process, such as, *e.g.*, a *pilot cross-correlation process*, is employed to estimate the channel." *Id.* at 26:1–7 (emphasis added). "The resulting estimated channel data is then provided to step 608", circled in red above, "wherein a *known sequence cross correlation process* . . . is conducted." *Id.* at 26:7–11 (emphasis added). "The resultant data from the cross-correlation process is then provided to step 610 in which signal parameters are extracted. These parameters may then be included or otherwise incorporated in constraints 504 (FIG. 18). The data is then provided to step 612, wherein the weighting values are computed and stored, for example, in a weighting matrix." *Id.* at 26: 11–17. From this, defendants conclude, the cross-correlation disclosed in Figure 22 (at step 608 circled in red) is performed by the apparatus *after* a signal is received (at step 602), not before it is received by said receiver. *See* Negus Decl. ¶ 224.

Vivato contends that the corresponding structure of a "search receiver logic" is only revealed in steps 610 and 612 in Figure 22 (not the entire Figure 22 that defendants rely on), and steps 610 and 612 describe updating the weighting values based on signal information that is already cross-correlated from step 608 and thus consistent with the claimed function. Reply Br. 13. I am not persuaded. Vivato only focuses on steps 610 and 612, when the entire Figure 22 is described in the specification as an "exemplary search receiver process." '231 Patent at 25:66. The claimed function of claim 1 is "update said routing information based at least in part on *cross-correlated* information *that is received by said receiver* using said adaptive antenna." As defendants point out, Figure 22 reveals a signal received step 602 (described as "a receiver

processes the RF signal received with an antenna array") but a cross-correlation process is conducted later at step 608, which suggests that the information received in step 602 was not already cross-correlated as it should be to capture the function of claim 1. *Id.* at 25:67–26.

When asked at the claim construction hearing why Vivato only focuses on steps 610 and 612, rather than the entire Figure 22, Vivato recognized that "there are earlier steps in the figure where the search receiver is actually performing cross-correlation itself," but argued that "step 610 and 612 of Figure 22 don't have any limit requirement that . . . they only operate on information that the search receiver itself cross-correlated." Transcript of Proceedings Held on August 20, 2021 ("Transcript") [Dkt. No. 188] 20:4–13. This argument contradicts itself. On the one hand, it acknowledges that "Claim 1 says that the search receiver updates routing information based on *cross-correlated* signal information that has *already been cross-correlated at the time it's received*," but on the other hand it contends that the search receiver can also perform cross-correlation itself (as opposed to receiving information that is already cross-correlated). *Id.* at 20:8–13. If I take Vivato's argument at face value (that the search receiver logic not only operates on information that is already cross-correlated but can also operate on information that is cross-correlated at the receiver), it fails to explain how that is reflected in the specification. Figure 22 cannot not qualify as "corresponding structure" when the specification itself does not "clearly link[] or associate[] that structure to the function recited in the claim." *Williamson*, 792 F.3d at 1352.[7]

Defendants separately argue that Vivato should be precluded from relying on Figure 22 as the corresponding structure in the specification because during IPR proceedings, Vivato confirmed

[7] At the claim construction hearing, defendants also pointed to a technology tutorial Vivato submitted in a different case, *XR Communications, LLC v. D-Link Systems, Inc.*, Case No. 17-cv-00596 (C.D. Cal.), in which Vivato explained that claim 1 of the '231 Patent includes a "search receiver logic" that "updates the routing information based on cross-correlated signal information" and "the cross-correlated signal information *is an input* to the search receiver logic and is received by the receiver using the adaptive antenna." Defendants' Notice of Filing of Presentation Materials from August 20, 2021 Claim Construction Hearing [Dkt. No. 184], Ex. A at slide 57. Vivato then differentiated between claim 1 (where information is already cross-correlated) and claim 12 (where cross-correlation is performed): "claim 1 recites that the access point's adaptive antenna *receives cross-correlated signal information*, such as from a client device," whereas "claim 20 recites that the adaptive antenna *itself is configured to cross-correlate data* sequences in the received signal." *Id.* at slide 64.

that Figure 22 is not an embodiment of claim 1. It said, "Patent Owner demonstrated that other claims cover the preferred embodiment of FIG. 22 . . . Claim 1 does not, and need not." Saleem Decl., Ex. 5 (Patent Owner's Sur-Reply In Support Of Its Preliminary Response at 4). Based on this representation, the IPR decided "We determine that this example [Figure 22], which explains how cross-correlation that takes place after the signal information is received can be used to update routing information, does not compel reading this temporal requirement into claim 1, which contains plain and ordinary language to the contrary." *Id.*, Ex. 6 (IPR Decision at 20).

Vivato contends that it did not disclaim the entirety of Figure 22 but merely distinguished portions of the specification concerning the search receiver's receipt of signal information that *was not already cross-correlated*, a distinction that it argues does not apply to steps 610 and 612 of Figure 22, which describe updating the weighting valued based on *cross-correlated* signal information. *See* Reply Br. 15. Not only does it fail to explain why that distinction should not apply to steps 610 and 612 of Figure 22, it does not cite any portion of the specification that supports this view. Vivato cannot draw a distinction between what is happening in Figure 22 (where cross-correlation happens at the receiver) against claim 1 (where cross-correlation happens elsewhere and the receiver picks up information that is already cross-correlated), and then come back around to say that "search receiver logic" structure of claim 1 is revealed in only those portions of Figure 22 that would match the function of claim 1. That does not meet the threshold of clearly linked corresponding structure.

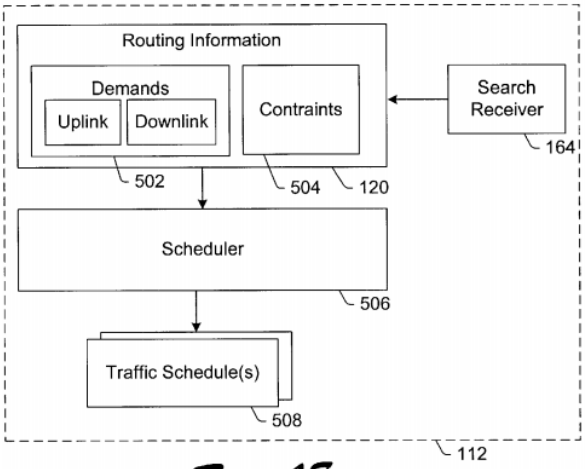


Fig. 18

Vivato next focuses on Figure 18, arguing that it depicts "search receiver 164" updating the "routing information 120." The specification, however, describes Figure 18 as a "functional block diagram for an exemplary *scheduling capability*." '231 Patent at 24:40–41 (emphasis added). Figure 18 discusses the "search receiver 164" only to the extent that the search receiver "identifie[d]" the "transmission constraints." *Id.* at 25: 1–3. It describes the transmission constraints as "useful information within the routing information 120" and explains how such information is "provided to a scheduler 506," which is "tasked with generating traffic schedules." '231 Patent at 24:40–41; 25: 1–3, 12–15. None of that reveals the structure of "search receiver 164" nor does it clearly link the "search receiver 164" to any claimed function. To the extent that Vivato argues that the corresponding structure is revealed in some combination of Figure 18 and Figure 22, that is not revealed in the specification either. *See* Negus Decl. ¶¶ 228–36 (explaining that "nothing within FIG. 18 itself and/or the '231 Patent specification text associated with FIG. 18 discloses, or even suggests, that there exists some 'structure' that is either that of 'Search receiver 164 of Fig. 18' arranged in some unspecified combination with 'processes 610 and 612 in Fig. 22', or that of 'Search receiver 164 of Fig. 18' as composed only of "processes 610 and 612 in Fig. 22").

The recited outputs (updated routing information used for beamforming) are also not depicted in Figure 18. Even though the routing information is shown by the arrow coming out of "search receive 164," Figure 18 does not show the *structure* of the search receiver itself that outputted the updated routing information. Instead, it is simply a black box depiction that is not clearly linked to structure for performing the claimed functions. *See Fiber, LLC v. Ciena Corp.*, 792 F. App'x 789, 795–96 (Fed. Cir. 2019) (affirming ruling that term "control" was indefinite under section 112(6), where patent only disclosed a black box labelled "control" without any description of structure).

The "search receiver 164" in Figure 18 has no depicted inputs either, whereas the claimed function requires that the "search receiver logic" perform the function "update said routing information *based at least in part on cross-correlated signal information that is received* by said receiver." '231 Patent at 29: 24–26; *see* Negus Decl. ¶ 229 (explaining how Figure 18 has no

depicted input). Without the recited inputs of a search receiver (cross-correlated signal information), Figure 18 cannot qualify as corresponding structure to the claimed function of claim 1. When asked about the lack of input depicted in Figure 18 at the hearing, Vivato argued that "a couple of figures earlier . . . such as Figure 4, Figure 5, Figure 15, and the accompanying text, that's where the patent is really helping us understand that the input would be cross-correlated signal information that's received at the receiver." Transcript at 21:13–18.

Figures 4, 5, and 15 were not the focus of Vivato's briefing, but were nevertheless raised at the claim construction hearing. *See* Plaintiffs' Submission of Markman Presentation Slides [Dkt. No. 184], Ex. A at slides 25–26, 32–33 (discussing Figures 4, 5D, and 15).[8] That itself is telling. When considered, none of these new figures get Vivato past the second step.

To start, Vivato presented Figure 5D as "another example of the search receiver connecting to the receivers" but quickly moved past it to focus on Figure 22 discussed above. *See* Transcript 13:2–4. Vivato argued that the search receiver 164 in Figure 4 is "operatively coupled to the

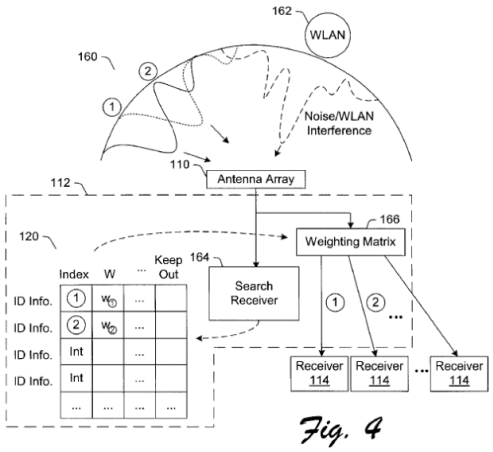


Fig. 4

[8] Vivato made two passing references to Figures 4 and 5 in its briefing, but never explained why it sufficed to show corresponding structure. *See* Opening Br. 4 (stating, under "technology background," that "Figure 4 depicts 'search receiver 164' coupled to control logic 112 updating routing information with weighting values in the weighting matrix'") (citing '231 Patent at 9:26–62); Reply Br. 13 and 15 (arguing that Dr. Negus admitted in deposition that search receiver 164 was "one example" of a discussion linked to the claimed search receiver, such as in Figure 5D and its corresponding descriptions, and separately arguing at the very end of the brief, that even if the court finds that Figure 22 was disclaimed by Vivato during IPR review, "Figure 18 and Figure 5 and elsewhere" suffice to show corresponding structure).

receivers 114 and the antenna array 110, and [] other structural elements" and that a POSITA "would know that this is the structure that's repeatedly talked about in the patent as linked to the claimed function of claim 1." Transcript at 12:19–13:1. To the extent Vivato attempts to rehash the argument rejected above, it is unconvincing for similar reasons—operatively connecting the search receiver to other structural components does not reveal the corresponding structure of the search receiver itself. *See Egenera*, 972 F.3d at 1374. ("Mere inclusion of a limitation within a structure does not automatically render the limitation itself sufficiently structural").

Vivato's reference to column 19, lines 19 to 26 of specification is not helpful either. That portion of the specification is describing Figure 11B, not Figure 4. Figure 11B "depicts a cross section of an exemplary barrier 314 suitable for use as barriers 310 and/or 312. *See* '231 Patent at 18:62–63. Vivato fails to explain how that qualifies as corresponding structure for the disputed search receiver logic term.

Vivato next argued that Figure 15 is "where the first wireless routing device measures the signal, sends it to the second one, and then the second one adaptively applies a null in the direction of the first wireless routing device based on the information provided by the first wireless routing device." Transcript at 16:19–23. In particular, it focused on the last box in Figure 15 (box 406), which purportedly tells a POSITA about updating routing information.

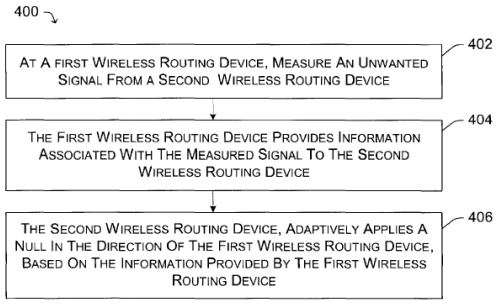


Fig. 15

Box 406 is not about updating routing information—the claimed function of claim 1 "search receiver logic—it is about "adaptively appl[ying] a null in the direction of the first wireless routing device," which is what the *control logic* is supposed to do once it receives updated routing information from the search receiver logic. *See* '231 Patent at 29:14–26 (reciting

claim 1 "search receiver logic . . . configured *to update said routing information* based at least in part on cross-correlated signal information" and "control logic . . . to transmit corresponding outgoing multibeam electromagnetic signals exhibiting *a plurality of selectively placed transmission peaks and transmission nulls . . . based on routing information*") (emphasis added).

During their presentation at the hearing, defendants cited Dr. Vojcic's testimony where he disclaimed that Figure 15 qualified as corresponding structure for search receiver logic and instead focused on Figure 22 discussed above. *See* Dr. Vojcic Dep. at 26:24–27:4 ("Q. Why didn't you identify Figure 15 in your statement as to the structure of the search receiver logic of claim 1? A: I don't know if I didn't identify, why I didn't identify because, because it's not, yeah, I know why I didn't identify it, because Figure 15 is not part of -- part of search receiver logic. It's only in figure for example what we discussed in Figure 22, the parts of claimed search receiver logics [were] blocks 610 and 612."). Earlier, Dr. Vojcic suggested that there "could be other ways to implement claim 1 . . . a variation of embodiment of Figure 15 and Figure 22." *Id.* at 26:19–23. Even if the search receiver logic could be implemented through some combination of Figure 15 and Figure 22, Vivato fails to explain where that is disclosed in the specification. *See Fiber, LLC*, 792 F. App'x at 796 ("Expert testimony cannot create structure where none is adequately disclosed in the specification.").

Vivato's overall cherry-picking approach does not show corresponding structure of the search receiver logic. Because the '231 Patent specification fails to disclose adequate structure corresponding to the claimed function, the "search receiver logic" term is rendered indefinite.

CONCLUSION

For the reasons stated above, "search receiver logic" is a means-plus-function limitation and the claimed functions do not have adequate corresponding structure disclosed in the specification. The term "search receiver logic" is not amenable to construction and is invalid for indefiniteness under section 112(6).

IT IS SO ORDERED.

Dated: September 1, 2021

William H. Orrick
United States District Judge

ADRMOP,AO279,APPEAL,CLOSED,CONSOL,PROTO,PRVADR

U.S. District Court
California Northern District (San Francisco)
CIVIL DOCKET FOR CASE #: 3:18-cv-01992-WHO

XR Communications, LLC v. Ruckus Wireless, Inc.
Assigned to: Judge William H. Orrick
Case in other court: The Federal Circuit, 22-01141
California Central, 2:17-cv-02961
Cause: 35:271 Patent Infringement

Date Filed: 04/02/2018
Date Terminated: 10/15/2021
Jury Demand: Defendant
Nature of Suit: 830 Patent
Jurisdiction: Federal Question

Plaintiff

XR Communications, LLC
doing business as
Vivato Technologies

represented by **Marc Aaron Fenster**
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
(310) 826-7474
Fax: (310) 826-6991
Email: mafenster@raklaw.com
LEAD ATTORNEY
ATTORNEY TO BE NOTICED

Christian W. Conkle
Russ August Kabat
12424 Wilshire Blvd.
Suite 1200
Los Angeles, CA 90025
United Sta
310-826-7474
Fax: 310-826-6991
Email: cconkle@raklaw.com
ATTORNEY TO BE NOTICED

James Nathan Pickens
Russ, August and Kabat
12424 Wilshire Boulevard
12th Floor
Los Angeles, CA 90025
310-826-7474
Fax: 310-826-6991
Email: jpickens@raklaw.com

ATTORNEY TO BE NOTICED

Kent N. Shum
Russ August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
(310) 826-7474
Fax: (310) 826-6991
Email: kshum@raklaw.com
ATTORNEY TO BE NOTICED

Minna Y. Chan
Russ, August & Kabat
12424 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90025
(310) 826-7474
Fax: (310) 826-6991
Email: mchan@raklaw.com
ATTORNEY TO BE NOTICED

Philip X. Wang
Russ August & Kabat
12424 Wilshire Blvd
12th Floor
Los Angeles, CA 90025
310-826-7474
Fax: 310-826-6991
Email: pwang@raklaw.com
ATTORNEY TO BE NOTICED

Reza Mirzaie
Russ August & Kabat
12424 Wilshire Blvd
12th Floor
Los Angeles, CA 90025
310-826-7474
Fax: (310) 826-6991
Email: rmirzaie@raklaw.com
ATTORNEY TO BE NOTICED

V.

Defendant

Ruckus Wireless, Inc.

represented by **Matthew Sean Yungwirth**
Duane Morris LLP
1075 Peachtree Street, N.E.
Suite 2000

Atlanta, GA 30309-3448
(404) 253-6935
Email: msyungwirth@duanemorris.com
LEAD ATTORNEY
ATTORNEY TO BE NOTICED

Richard L. Seabolt
Duane Morris LLP
Spear Tower
One Market Plaza, Suite 2200
San Francisco, CA 941051127
415-957-3212
Fax: 415-957-3001
Email: RLSeabolt@duanemorris.com
TERMINATED: 06/27/2018
LEAD ATTORNEY

Alice Egan Snedeker
Duane Morris LLP
1075 Peachtree Street
Suite 1700
Atlanta, GA 30309
404-253-6900
Fax: 404-253-6901
Email: aesnedeker@duanemorris.com
ATTORNEY TO BE NOTICED

Amadou K Diaw
RuyakCherian LLP
1700 K Street NW Suite 810
Washington, DC 20006
202-838-1564
Fax: 202-478-1715
Email: amadoukd@ruyakcherian.com
TERMINATED: 03/07/2018
PRO HAC VICE

Anjali Kulkarni
Duane Morris LLP
One Market, Spear Tower, Suite 2200
San Francisco, CA 94108-5530
415.957.3000
Fax: 415.957.3001
Email: Akulkarni@duanemorris.com
TERMINATED: 04/27/2021

Audra Lynn Thompson

Duane Morris LLP
865 S. Figueroa Street, Suite 3100
Los Angeles, CA 90017-5450
213-689-7400
Fax: 213-689-7401
Email: athompson@duanemorris.com
TERMINATED: 04/24/2018

Daniel Todd McCloskey
Duane Morris LLP
2475 Hanover Street
Palo Alto, CA 94130-1194
(650) 847-1194
Fax: (650) 847-4151
Email: dtmccloskey@duanemorris.com
TERMINATED: 02/04/2021

Don Francis Livornese
RuyakCherian LLP
222 Pacific Coast Highway
Suite 2000
El Segundo, CA 90245
310-586-6789
Email: donl@ruyakcherian.com
TERMINATED: 03/07/2018

Korula T. Cherian
RuyakCherian LLP
1936 University Avenue
Suite 350
Berkeley, CA 94704
510-944-0185
Email: sunnyc@ruyakcherian.com
TERMINATED: 03/07/2018

Meghan Charlene Killian
Duane Morris LLP
Spear Tower One Market Plaza Suite 2200
San Francisco, CA 94105-1127
United Sta
415-957-3138
Fax: 415-957-0017
Email: mckillian@duanemorris.com
ATTORNEY TO BE NOTICED

Nicole Elizabeth Johnson
Duane Morris