

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

**XR COMMUNICATIONS, LLC, DBA VIVATO
TECHNOLOGIES,**
Plaintiff-Appellant

v.

**ARRIS SOLUTIONS, INC., RUCKUS WIRELESS,
INC.,**
Defendants-Appellees

2022-1125, 2022-1141

Appeals from the United States District Court for the Northern District of California in Nos. 3:18-cv-01992-WHO, 3:18-cv-02736-WHO, Judge William H. Orrick, III.

Decided: May 18, 2023

REZA MIRZAIE, Russ August & Kabat, Los Angeles, CA, argued for plaintiff-appellant. Also represented by MINNA CHAN, MARC A. FENSTER, BRIAN DAVID LEDAHL, JAMES PICKENS.

MATTHEW YUNGWIRTH, Duane Morris LLP, Atlanta, GA, argued for defendant-appellee. Also represented by ALICE SNEDEKER.

Before PROST, REYNA, and STARK, *Circuit Judges*.

PROST, *Circuit Judge*.

XR Communications, LLC dba Vivato Technologies (“Vivato”) appeals an order and judgment of the U.S. District Court for the Northern District of California that construed a claim term in U.S. Patent No. 6,611,231 (“the ’231 patent”) as subject to 35 U.S.C. § 112 ¶ 6¹ and held claims 1–9 and 12 of the ’231 patent invalid as indefinite. We affirm.

I

The ’231 patent relates to wireless communication systems. The term at issue is “search receiver logic,” which appears in illustrative claim 1 as follows:

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.

’231 patent claim 1.

In a well-considered order, the district court evaluated (1) whether “search receiver logic” is a means-plus-function

¹ The Leahy-Smith America Invents Act (“AIA”) re-designated § 112 ¶¶ 2 and 6 as, respectively, § 112(b) and (f). Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4(c), 125 Stat. 284, 296 (2011). We refer to the pre-AIA version because the application resulting in the ’231 patent was filed before September 16, 2012. *See id.* sec. 4(e), 125 Stat. at 297; *see also Media Rights Techs., Inc. v. Cap. One Fin. Corp.*, 800 F.3d 1366, 1371 n.1 (Fed. Cir. 2015).

term subject to § 112 ¶ 6 and, if so, (2) whether the '231 patent's specification discloses adequate corresponding structure to avoid indefiniteness under § 112 ¶ 2. *See XR Commc'ns, LLC v. Ruckus Wireless, Inc.*, No. 18-cv-01992, 2021 WL 3918136, at *5 (N.D. Cal. Sept. 1, 2021) (“*Claim Construction Order*”).

On the first issue, the district court concluded that “search receiver logic” invokes § 112 ¶ 6. The court correctly noted that, because this term lacks the word “means,” there is a rebuttable presumption against application of § 112 ¶ 6. *Id.* (citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc in relevant part)). It also correctly noted that such a presumption “can be overcome and [§ 112 ¶ 6] will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure *or else recites function without reciting sufficient structure for performing that function.*” *Id.* at *4 (emphasis added) (cleaned up) (quoting *Williamson*, 792 F.3d at 1349). The court observed that “Vivato agree[d] that one of the claimed functions of ‘search receiver logic’ is to ‘update said routing information.’” *Id.* at *6; *see also* '231 patent claim 1. And it concluded that defendants-appellees ARRIS Solutions, Inc. and Ruckus Wireless, Inc. (collectively, “Ruckus”) overcame the presumption against application of § 112 ¶ 6 by showing that the term does not recite sufficient structure for performing that function. *Id.* at *6–10.

The district court acknowledged that a person of ordinary skill in the art (“POSITA”) might have understood, from different fields like electronic warfare or Global Positioning System (“GPS”) receivers, that “search receiver” or “search receiver logic” connoted some structure. *Id.* at *6–9. But the court observed: “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 [of updating said routing information].” *Id.* at *5 (relying on *Williamson* and *Egenera, Inc. v. Cisco Sys., Inc.*, 972 F.3d 1367 (Fed. Cir. 2020)). After reviewing the ’231 patent’s specification and Vivato’s and Ruckus’s competing expert declarations, the court concluded that a POSITA would not understand “search receiver logic” as structure for updating said routing information. *See, e.g., id.* at *9 (“As [Ruckus’s expert] 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.”); *see also id.* at *6 (observing that the specification “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” (cleaned up)). The court therefore construed the term as invoking § 112 ¶ 6.

On the second issue, the district court concluded that the specification fails to disclose adequate structure corresponding to the claimed function of updating said routing information. In particular, the court rejected Vivato’s arguments that “search receiver 164” in Figure 18 and steps 610 and 612 of Figure 22 disclose adequate corresponding structure. *Id.* at *11–15. As a result, the court held the claims at issue invalid as indefinite under § 112 ¶ 2 and entered final judgment accordingly.

Vivato timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

“Regarding questions of claim construction, including whether claim language invokes [§ 112 ¶ 6], the district court’s determinations based on evidence intrinsic to the patent as well as its ultimate interpretations of the patent claims are legal questions that we review *de novo*.” *Williamson*, 792 F.3d at 1346. “To the extent the district court,

in construing the claims, makes underlying findings of fact based on extrinsic evidence, we review such findings of fact for clear error.” *Id.*

Vivato makes two arguments on appeal—first, that the district court erred in concluding that “search receiver logic” invokes § 112 ¶ 6; and second, that the district court erred in concluding that the specification fails to disclose adequate structure corresponding to the claimed function of updating said routing information. We address each argument in turn.

A

The first step of a § 112 ¶ 6 analysis is determining whether a claim term has invoked that statutory provision by being drafted in means-plus-function format. *See, e.g., Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365 (Fed. Cir. 2022). This inquiry turns on a POSITA’s understanding. *Id.* at 1366. When, as here, the disputed term lacks the word “means,” there is a rebuttable presumption that the term is not drafted in means-plus-function format. *Id.* at 1365. But “the presumption can be overcome and [§ 112 ¶ 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.’” *Williamson*, 792 F.3d at 1348 (alteration in original) (emphasis added) (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)); *id.* at 1349.

The district court asked whether a POSITA would understand “search receiver logic” as structure for updating said routing information.² To frame the question like this,

² More precisely (given the presumption): the court asked whether Ruckus had demonstrated that a POSITA would *not* understand “search receiver logic” as structure

the court relied on the *Williamson* standard (emphasized above) and our decision in *Egenera* applying that standard. In *Egenera*, we concluded that the term “logic to modify” invoked § 112 ¶ 6. In reaching that conclusion, we observed that the patentee (who opposed § 112 ¶ 6 treatment) did “not explain how its ‘logic’—even assuming it connotes some possible structure in the general sense of software, firmware, or circuitry—amounts to *sufficient* structure for performing the modification function.” *Egenera*, 972 F.3d at 1374 (emphasis in original) (cleaned up); *see id.* (“[A]gain, the question is not whether ‘logic’ is utterly devoid of structure but whether the claim term recites sufficient structure to perform the claimed functions.”).

Vivato argues that the district court asked the wrong question. According to Vivato, the court shouldn’t have asked whether a POSITA would have understood “search receiver logic” as structure *for updating said routing information*; instead, it should have asked only whether a POSITA would have understood “search receiver logic” as structure—period. *See, e.g.*, Appellant’s Br. 3, 23, 27–28, 38; Reply Br. 2. We disagree. Vivato’s argument simply fails to meaningfully reckon with this court’s precedent, including *Williamson*’s en banc articulation of the legal standard and *Egenera*. Given this precedent, we conclude that the district court properly asked whether a POSITA would understand the disputed term not just as structure, but as sufficient structure “for performing [the claimed] function.” *Williamson*, 792 F.3d at 1348–49.

Vivato also sees error in the district court’s statement that “[a] so-called ‘known class of circuit structures’ cannot be sufficient under the *Williamson* standard.” *Claim Construction Order*, 2021 WL 3918136, at *6. In context, however, this statement is unproblematic. True, “[c]laim terms

for updating said routing information. *See Claim Construction Order*, 2021 WL 3918136, at *7.

need not connote a single, specific structure, and may instead describe a class of structures” while still avoiding § 112 ¶ 6. *Dyfan*, 28 F.4th at 1366 (cleaned up). But it’s clear from context that the court wasn’t disputing *that* point. Instead, it was rejecting Vivato’s position that § 112 ¶ 6 is avoided by reciting something a POSITA would understand as structure—even if a POSITA wouldn’t understand it as sufficient structure *for performing the claimed function*. As discussed above, that is the position our precedent compels rejecting. We therefore see no error in this statement by the district court.

The district court applied the correct legal standard here, and Vivato’s arguments to the contrary are unpersuasive. Vivato also hasn’t shown error in the court’s application of that standard to the record. We therefore affirm the court’s conclusion—based on the ’231 patent’s specification and expert testimony—that “search receiver logic” invokes § 112 ¶ 6.

B

If, as here, a claim term is construed to invoke § 112 ¶ 6, we proceed to the second step of the analysis: “determining what structure, if any, disclosed in the specification corresponds to the claimed function.” *Dyfan*, 28 F.4th at 1365 (cleaned up). “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.” *Williamson*, 792 F.3d at 1352 (emphasis added) (cleaned up). And “[e]ven if the specification discloses corresponding structure, the disclosure must be of *adequate* corresponding structure to achieve the claimed function.” *Id.* (emphasis added) (cleaned up). If the specification fails to disclose adequate corresponding structure to perform the claimed function, the claim is indefinite. *Traxcell Techs., LLC v. Sprint Commc’ns Co.*, 15 F.4th 1121, 1134 (Fed. Cir. 2021) (citing *Williamson*, 792 F.3d at 1351–52).

On appeal, Vivato again advances as adequate corresponding structure “search receiver 164” in Figure 18 and steps 610 and 612 of Figure 22. The district court comprehensively analyzed these (among other) disclosures and concluded that none satisfied the standard for adequate structure clearly linked to the claimed function of updating said routing information. For example, as to “search receiver 164” in Figure 18, it noted that the specification describes Figure 18 as a “functional block diagram for an exemplary *scheduling capability*,” *Claim Construction Order*, 2021 WL 3918136, at *13 (emphasis in original) (quoting ’231 patent col. 24 ll. 40–41), and it concluded that none of the referenced disclosure concerning Figure 18 “reveals the structure of ‘search receiver 164’” or “clearly link[s] the ‘search receiver 164’ to any claimed function,” *id.* (citing ’231 patent col. 24 ll. 40–41, col. 25 ll. 1–3, col. 25 ll. 12–15). As to steps 610 and 612 of Figure 22, the court observed that Figure 22 depicts a process involving a function different from the relevant claim 1 function, and it rejected Vivato’s attempt to isolate steps 610 and 612 from their context in this figure—reasoning that such an attempt in this case “does not meet the threshold of clearly linked corresponding structure.” *Id.*; *see id.* at *12. We find the district court’s analysis on this second step well supported and are unpersuaded to disturb its ultimate conclusion—i.e., that the specification’s failure to disclose adequate corresponding structure renders the claims at issue indefinite under § 112 ¶ 2.

III

We have considered Vivato’s remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm.

AFFIRMED