

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

GENERAL ACCESS SOLUTIONS, LTD.,	§	
	§	
<i>Plaintiff,</i>	§	
	§	
v.	§	CIVIL ACTION NO. 2:23-CV-00158-JRG
	§	
T-MOBILE USA, INC.,	§	
	§	
<i>Defendant,</i>	§	
	§	
ERICSSON, INC.,	§	
	§	
<i>Intervenor-Defendant,</i>	§	
	§	
NOKIA OF AMERICA CORPORATION.,	§	
	§	
<i>Intervenor-Defendant.</i>	§	
	§	

CLAIM CONSTRUCTION ORDER

General Access Solutions, Ltd. (“GAS”), alleges infringement by Defendants T-Mobile USA, Inc., Ericsson Inc., and Nokia of America Corporation (collectively, “Defendants”) of claims from U.S. Patent Nos. 6,947,477 (the “’477 Patent”); 7,099,383 (the “’383 Patent”); and 7,230,931 (the “’931 Patent”). These patents relate generally to wireless communication systems. (*See* ’477 Patent at 3:23-28 (noting “the present invention relates to [an] apparatus, and an associated method, by which to create a profile representative of expected signal characteristics of a burst data signal and of expected characteristics of the channel upon which the burst data signal is communicated.”); ’383 Patent at 3:30-33 (“The present invention is directed, in general, . . . to an apparatus for processing data signals received from wireless subscriber stations.”); ’931 Patent at 3:28-31 (“The present invention is directed . . . to a burst packet transmission media access system

using selectively adaptable beam forming in a fixed wireless access network.”).)

The parties dispute the scope of eleven terms. Having considered the parties’ briefing and arguments of counsel during a July 16, 2024 hearing, the Court resolves the disputes as follows.

I. BACKGROUND

A. U.S. Patent 7,230,931

The ’931 Patent concerns a transceiver for use in a wireless access network with base stations. (’931 Patent at Abstract.) The transmitter has “transmit path circuitry associated with a beam forming network for transmitting directed scanning beam signals in a sector of a cell site of . . . [a] base station.” (*Id.*) The ’931 Patent teaches using a combination of beam forming and broadcast beams to increase spectral efficiency, thereby increasing the number of devices supportable by each base station in the network. (*Id.* at 27:61-67.)

GAS alleges infringement of Claims 28 and 29, which depend from Claim 1 and Claim 19, respectively. Claim 1 recites:

1. For use in a *wireless access network* comprising a plurality of base stations, each of said plurality of base stations capable of bidirectional time division duplex (TDD) communication with *wireless access devices* disposed at a plurality of subscriber premises in an associated cell site of said *wireless access network*, a transceiver associated with a first of said plurality of base stations comprising:

transmit path circuitry associated with a beam forming network capable of transmitting directed scanning beam signals each directed to substantially only *wireless access devices* within a different one of a plurality of *sectors* of a cell site associated with said first base station, wherein said transmit path circuitry

transmits, at a start of a TDD frame, a broadcast beam signal to *wireless access devices* within more than one of said *sectors*, the broadcast beam signal comprising a start of

frame field, and
 subsequently transmits, in a downlink portion of said TDD
 frame, first downlink data traffic to substantially only
wireless access devices within one of said *sectors* using
 one of said directed scanning beam signals.

(’931 Patent at 30:31-52 (disputed terms emphasized).) Claim 28 then recites:

28. The transceiver as set forth in claim 1 wherein said transmit path
 circuitry transmits, *in said downlink portion of said TDD frame*,
 second downlink data traffic to substantially only *wireless*
access devices within an other of said *sectors* using an other of
 said directed scanning beam signals.

(*Id.* at 33:4-9 (disputed terms emphasized).) Claim 19 and Claim 29 recite methods of
 communicating with base stations using similar language to that of Claims 1 and 28. (*See id.* at
 32:16-34, 34:1-6.)

The parties dispute the scope of three groups of terms from the ’931 Patent: (1) “wireless
 access network” and “wireless access devices”; (2) “sector[s]”; and (3) “in said downlink portion
 of said TDD frame.” (*See* Dkt. No. 56-1 at 1-12.) This Court previously considered issues related
 to these terms in *General Access Sols., Ltd., v. Sprint Spectrum L.P.*, No. 2:20-CV-00007-RWS
 (“*Sprint*”) and *General Access Sols., Ltd., v. Celco P’ship*, No. 2:22-CV-00394-JRG (“*Verizon*”).
 (*See generally* Dkt. No. 57-1 (claim construction order in *Verizon*, construing “wireless access
 devices,” “wireless access network,” “sectors,” and “in said downlink portion of said TDD
 frame”); Dkt. No. 57-2 (claim construction order in *Sprint*, construing “wireless access devices”).

B. U.S. Patent 6,947,477

The ’477 Patent, which discloses much of the same subject matter as the ’931 Patent, relates
 to “creat[ing] a profile representative of expected signal characteristics of a burst data signal and
 of expected characteristics of the channel upon which the burst data signal is communicated.”

(’477 Patent at 3:23-28.) The “receiving station” uses the profile to speed up the processing of the burst data signals.¹ (*Id.* at 3:28-30; *see also id.* at 5:51-57 (noting base stations “must be able to quickly and accurately . . . operate upon data bursts received from a potentially large number of subscribers,” so “[a]ny manner by which to facilitate an increase in speed and accuracy by which the data bursts can be operated upon by the base stations [is] advantageous”).)

According to the ’477 Patent, “[c]haracteristics of data bursts and the channels by which the data bursts are received are stored in memory as signal and channel profiles at the receiving station.” (’447 Patent at 6:1-3.) Those profiles include, for example,

parameters, such as the modulation index of the data signals communicated by the subscriber stations to the base station, the modulation orthogonalizations of the bursts of data signals of the bursts of data signals, parameters associated with FEC (forward error correction) of the data bursts sent to the base station by the subscriber stations, antenna combining parameters when antenna diversity and/or beamforming is utilized, timing adjustment parameters, as well as other values.

(*Id.* at 6:10-18.)

The independent claims are directed to a “profile creating apparatus” and a method of creating the profiles. Claim 1, for example, recites:

1. Profile-creating apparatus for creating at least a first profile associated with transmission upon at least a first channel of at least a first burst-data signal transmitted in bursts to a *receiving station*, said profile-creating apparatus comprising:
 - a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the *receiving station*, said profile parameter determiner for determining a value of at least one signal-related parameter and at least one channel-related parameter, wherein the signal-related and channel-related parameters are collectively representative of communication

¹ Generally, a “burst” refers to the broadcast of a high-bandwidth transmission over a short period.

of the first burst data signal over the first channel to the *receiving station*; and

- a profile parameter storage device *coupled to* said profile parameter determiner, said profile parameter storage device for storing values representative of the at least one signal-related parameter and the at least one channel-related parameter determined [sic] by said profile parameter determiner, the values stored at said profile parameter storage device to be used to facilitate receive operations performed at the receiving station on subsequent bursts of the first burst data signal.

(’477 Patent at 12:63-13:18 (disputed terms emphasized).) Claim 2, which depends from Claim 1, requires the “profile parameter determiner” to “determine[] the at least one parameter.” (*Id.* at 12:23-24.)

The parties have three disputes from these claims. They dispute the scope of “receiving station” and “coupled to.” (*See* Dkt. No. 56-1 at 12-14.) They also dispute whether Claim 2 is indefinite because “the at least one parameter” has no antecedent basis in Claim 1 and might refer to either the signal- or channel-related parameter of Claim 1. (*See id.* at 14-15.)

C. U.S. Patent 7,099,383

The ’383 Patent, which has an identical disclosure to that of the ’477 Patent but is not part of the same family, relates to “an apparatus for processing data signals received from wireless subscriber stations.” (’383 Patent at 3:32-33.) The base station of a system has multiple modems, and a controller selects to which modem a received data signal is directed. (’383 Patent at Abstract.) Profiles relating to channel and signal characteristics, such as those created by the “profile creating apparatus” of the ’477 Patent, are used by the modem when demodulating the signals.

Claim 1 recites:

1. An apparatus for a *communication station* operable in a wireless

communication system at least to receive first and second data signals successively transmitted thereto by a first *subscriber station* and a second *subscriber station*, respectively, within a plurality of *subscriber stations*, the apparatus comprising:

a first demodulator selectably coupled to receive the first data signals transmitted to the *communication station*;

at least a second demodulator also selectably coupled to receive the second data signals transmitted to the *communication station*; and

a controller, coupled to the first demodulator and to the at least second demodulator in a feedback arrangement, the controller alternately selecting the first data signals for application to the first demodulator and the second data signals for application to the second demodulator,

wherein the at least the second *subscriber station* comprises a plurality of *subscriber stations* and wherein the controller selectively applies the first and second data signals to the first and second demodulators according to a selected pattern by alternately coupling the first demodulator and the second demodulator to receive, selectably, the first and at least second data signals communicated by alternating ones of the plurality of *subscriber stations*.

(’383 Patent at 12:46-13:3.) The parties dispute the scope of “communication station,” “subscriber,” and “subscriber station,” and whether independent Claims 1, 4, and 11 are indefinite. (See Dkt. No. 56-1 at 15-20.)

II. LEGAL STANDARDS

A. Generally

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111 (Fed. Cir. 2004)). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See*,

e.g., *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007) (Gajarsa, J., concurring in part); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff'g*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, “is not an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, “[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims” *Id.* A court need not “repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.” *Id.*

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips*, 415 F.3d at 1312-13). Courts must therefore “look to the words of the claims themselves . . . to define the scope of the patented invention.” *Id.* (cleaned up). The “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. This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

“Intrinsic evidence is the primary resource” for claim construction. *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed.

Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”) (quoting *DeMarini Sports, Inc. v. Worth*, 239 F.3d 1314, 1324 (Fed. Cir. 2001)). But for claim terms with less-apparent meanings, courts consider “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean . . . [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips*, 415 F.3d at 1314 (quoting *Innova*, 381 F.3d at 1116).

B. Indefiniteness

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). The claims “must be precise enough to afford clear notice of what is claimed” while recognizing that “some modicum of uncertainty” is inherent due to the limitations of language. *Id.* at 909. “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

III. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, “[a] person of

ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, neither party proffers a level of ordinary skill in the art for analysis. The Court therefore adopts the level of skill applied by the Patent Trial and Appeal Board (“PTAB”) in granting institution of *inter partes* review (“IPR”) for the ’477 Patent:

A [skilled artisan] at the time of the alleged invention of the ’477 Patent would have had at least a bachelor’s degree in computer science, electrical or computer engineering, or a related field, and at least two years of work or research experience in digital communications systems, such as wireless communications systems and networks, or equivalent, or a master’s degree in electrical engineering, computer engineering, computer science, or a similar field. Relevant working experience would include experience with telecommunications and networking, radio-access networking, and/or service provisioning in wireless networks. More education can supplement practical experience and vice-versa.

(Dkt. No. 60-2 at 14-15 (PTAB’s Decision Granting Institution) (citations omitted).)

IV. THE DISPUTED TERMS

A. “wireless access network” (’931 Patent, Claims 1, 19); “wireless access devices” (’931 Patent, Claims 1, 19, 28, 29)

GAS’s Construction	Defendants’ Construction
Plain and ordinary meaning	wireless access network: “fixed wireless access network” wireless access devices: “fixed wireless access devices”

Defendants argue the ’931 Patent as a whole limits the scope of these terms. Defendants seek reconsideration of the Court’s construction in *Verizon*, stressing the patent’s explanation that “[t]he *present invention* is directed [to] using selectively adaptable beam forming in a *fixed wireless access network*.” (Dkt. No. 60 at 4 (quoting ’931 Patent at 3:25-31).) Defendants also point to the ’931 Patent’s description of Figure 1 as an “exemplary *fixed* wireless access network.” (*Id.* (quoting ’931 Patent at 10:51-57).) Finally, noting the patent refers to cellular networks only in the

Background section, Defendants stress the specification clarifies “the invention is directed to solving problems specifically with *fixed* wireless access networks.” (*Id.* at 5 (emphasis added).)

Noting this Court has twice rejected Defendants’ position, GAS asserts that Defendants’ constructions are inconsistent with the ordinary meaning of the terms. (Dkt. No. 57 at 6 (citing various dictionary definitions for “wireless” and “device”).) GAS also argues claim differentiation weighs in its favor because the preamble of Claim 10 is clearly limited to “fixed” networks, but the preambles of the asserted claims are not. (*Id.* at 6-7.)

GAS stresses the ’931 Patent incorporates a reference that characterizes cellular networks as “wireless communications systems.” (Dkt. No. 57 at 7 (citing Rappaport, *Wireless Commc ’ns—Principles & Practice* (1996), at 398).) In its view, “the specification emphasizes the similarities between fixed wireless and mobile wireless networks.” (*Id.* at 8 (citing ’931 Patent at 5:23-25 (“Fixed wireless broadband systems use a group of transceiver base stations to cover a region in the same manner as the base stations of a cellular phone system.”))).) Regarding the prosecution history, GAS notes that the USPTO issued a rejection based in part on the disclosure by U.S. Patent 6,094,421 (Scott) of mobile devices as “wireless access devices.” (*Id.* at 8 (citing Dkt. No. 57-10 at 2-3, Non-Final Rejection (Jan. 10, 2006))).) This, says GAS, shows a skilled artisan would have understood the “wireless access devices” of the patent are not necessarily “fixed.”

The Court’s prior rulings on this dispute remain sound. For the Court to adopt Defendants’ construction, they must show “clear and unmistakable statements by the patentee that limit the claims, such as ‘the present invention includes . . .’ or ‘the present invention is . . .’ or ‘all embodiments of the present invention are’” *Pacing Techs., LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015).

As this Court previously reasoned:

But “[w]hile descriptions ‘of the “present invention” as a whole’ could limit the scope of the invention, . . . use of the phrase ‘present invention’ or ‘this invention’ is not always so limiting, such as where the references . . . are not uniform, or where other portions of the intrinsic evidence do not support applying the limitation to the entire patent.” *Cont’l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 798 (Fed. Cir. 2019). Here, the “present invention” language distinguishes between “wireless access systems” generally and use of the claimed system in a “fixed wireless access network” ’931 Patent at 3:28-31. That language strongly suggests “wireless access systems” are broader than “fixed wireless access networks,” which cuts against Defendants’ position. Of course, the phrases at issue are “wireless access *networks*” and “fixed wireless access networks,” but the Court sees little, if any, difference between “systems” and “networks” in this context. The differences in the claims’ preambles also support GAS’s position,

(Dkt. No. 57-1 (*Verizon* Claim Construction Order).)

Ultimately, the Court again concludes the applicants did not clearly and unmistakably limit the scope of these terms as Defendants urge. *See Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1367-68 (Fed. Cir. 2012) (noting both lexicography and disavowal “require a clear and explicit statement by the patentee”). Accordingly, the Court rejects Defendants’ “fixed” requirement and will give these terms “plain and ordinary meaning” constructions.

B. “sector[s]” (’931 Patent, Claims 1, 19, 28, 29)

GAS’s Construction	Defendants’ Construction
Plain and ordinary meaning, which is “a geographic portion of a cell site.”	“areas defined by an arc around the cell site, each covered by its own antenna”

Claim 28, through its dependence on Claim 1, requires “transmit path circuitry . . . capable of transmitting directed scanning beam signals each directed to substantially only wireless access devices within a different one of a plurality of *sectors* of a cell site.” (’931 Patent at 30:38-42 (emphasis added).) The circuitry transmits “a broadcast beam signal to wireless access devices within more than one of said *sectors*” and then transmits data “to substantially only wireless access

devices within one of said *sectors* using one of said directed scanning beam signals.” (*Id.* at 30:44-52 (emphasis added).) Claim 29 includes similar requirements because of its dependence on Claim 19. (*See id.* at 32:24-34.) As in *Verizon*, the parties dispute whether a “sector” must be tied to base-station infrastructure, like antennas or modems.

The parties generally rely on the same evidence previously considered by this Court. For example, GAS cites a definition of “sector” as “a region or district of a larger geographical area.” (Dkt. No. 57 at 9 (citing Shorter Oxford English Dict., Dkt. No. 57-12 at 2733 (5th ed. 2002)).) It contends the coverage area of the disclosed broadcast beam signal is subdivided into smaller sectors, “each covered by a separate directed scanning beam signal.” (*Id.* at 13 (citing ’931 Patent at 28:3-12).) GAS says requiring each “sector” to be covered by a different antenna would read out the embodiments of Figures 12-13. (*Id.* at 14.)

Defendants counter that a “sector” must have some tie to a specific antenna or group of antennas. (*See* Dkt. No. 60 at 8.) Defendants say only their construction makes sense, because Claims 28 and 29 require sending a second directed beam to devices within a second sector. (*Id.*) So if a “sector” is just the coverage area of a scanning beam, the existence of the second beam would establish the second sector, thus rendering the claim language superfluous. (*Id.*) Moreover, the written description explains a cell has “M sectors,” and “each sector generally covers a 360/M degree arc around the cell site.” (Dkt. No. 60 at 8 (citing ’931 Patent at 8:13-15); *id.* (citing Figure 2, which shows three base stations, each with four equally sized sectors).) “Each RF modem uses an individual antenna to transmit and to receive in its assigned sector.” (*Id.* (citing ’931 Patent at 16:4-23).)

Defendants also cite the prosecution history. In response to a rejection during prosecution, the applicants limited Claim 1 to transmitting downlink traffic “to substantially only ~~at least one~~

~~of said~~ wireless access devices within one of said sectors using ~~at least one of said~~ directed scanning beam signals.” (Dkt. No. 60 at 9 (citing Dkt. No. 60-6 at 14, Am. & Resp. to Office Action).) This, they say, shows “a ‘sector’ cannot be just ‘any portion of the geographic area around the cell site,’ and in particular cannot be the area covered by any one directed scanning beam.” (*Id.*) Notably, during an IPR proceeding, GAS agreed the broadest reasonable interpretation of “sector” is “arc of a cell site served by an individual antenna or antenna array,” and “each base station is equipped with multiple antennas, with different antennas covering different ‘sectors’ of the cell.” (Dkt. No. 60 at 10.) This shows GAS understood a “sector” is “a specific area with its own ‘different antennas.’” (*Id.* (quoting Dkt. No. 60-10 at 4, Patent Owner’s Prelim. Resp.).)

Defendants have the better position. As the Court noted in *Verizon*, the intrinsic and extrinsic evidence tie “sector” to some physical or logical aspect of the base station. The ’931 Patent explains “each sector of a cell site is served by an individual RF modem,” and “[e]ach RF modem uses an individual antenna to transmit and to receive in its assigned sector.” (’931 Patent at 16:8-13.) “The antennas *for different sectors* in the same cell site are mounted on the same tower and are located only a few feet apart.” (*Id.* at 16:13-15 (emphasis added).) The ’931 Patent thus aims “to prevent interference between antennas in different sectors of the same cell site.” (*Id.* at 16:20-21; *see also* Patent Owner’s Prelim. Resp., Dkt. No. 60-10 at 4 (“In modern cellular wireless networks, each base station is equipped with multiple antennas, with different antennas covering different ‘sectors’ of the cell. In such an arrangement, each antenna transmits to, and receives transmissions from, wireless devices in its sector of the cell.”).)

GAS’s position hinges on a general-purpose definition of “sector” as “a region or district of a larger geographical area.” (Dkt. No. 57 at 9 (citing Dkt. No. 57-12 at 5, Shorter Oxford English Dict. (5th ed. 2002)).) Because that general definition is divorced from the relevant art and not

how a skilled artisan would understand the term in light of the specification, the Court adopts Defendants’ construction as the “ordinary meaning” of “sector:” “area defined by an arc around the cell site, each covered by its own antenna.”

C. “in said downlink portion of said TDD frame” (’931 Patent, Claims 28, 29)

GAS’s Construction	Defendants’ Construction
No construction necessary	“in the same downlink portion of the same TDD frame”

Because GAS “has no substantive dispute with [Defendants’] construction,” (Dkt. No. 57 at 15), the Court adopts that construction of “in the same downlink portion of the same TDD frame.”

D. “receiving station” (’477 Patent, Claims 1, 2, 5, 6, 14, 16-18)

GAS’s Construction	Defendants’ Construction
No construction necessary	“receiving station of a fixed wireless network”

Claim 1’s preamble recites a “profile-creating apparatus for creating at least a first profile associated with transmission upon at least a first channel of at least a first burst-data signal transmitted in bursts to *a receiving station*.” (’477 Patent at 12:63-67 (emphasis added).) Defendants argue “receiving station” must be limited to a receiving station in a “fixed wireless network.”

Defendants’ arguments track those made with respect to “wireless access network” from the ’931 Patent. For example, Defendants say the specification limits the “present invention” to a “fixed” network. (Dkt. No. 60 at 15-16 (citing ’477 Patent at Abstract, 3:20-23).) Defendants also stress there are no cellular or mobile network embodiments in the specification. (*Id.* at 16.) Defendants note the ’477 Patent’s description of the underlying problem of expensive hard-wired

systems in remote areas and the explanation that fixed wireless broadband systems are a cost-effective alternative. (*Id.* at 17.)

Defendants’ arguments implicitly concede that they seek to narrow the ordinary meaning of “receiving station,” but the Court sees no clear basis for doing so. As GAS notes, the ’477 Patent describes “[t]he present invention” as “relat[ing] generally to a manner by which to operate upon burst data signals received at a receiving station, *such as* a base station of a fixed wireless access (FWA) communication system.” (’477 Patent at 3:20-22 (emphasis added); *see also id.* at 5:60-62 (same), 6:30-34 (same).) Moreover, the claims are directed to a profile-creating apparatus, the operation and structure of which are not specific to whether the recited receiving station is part of a fixed or mobile network. Together, this is sufficient to avoid any implicit lexicography or disavowal that might narrow the ordinary meaning of the term. Accordingly, the Court rejects Defendants’ construction and will give this term a “plain and ordinary meaning” construction.

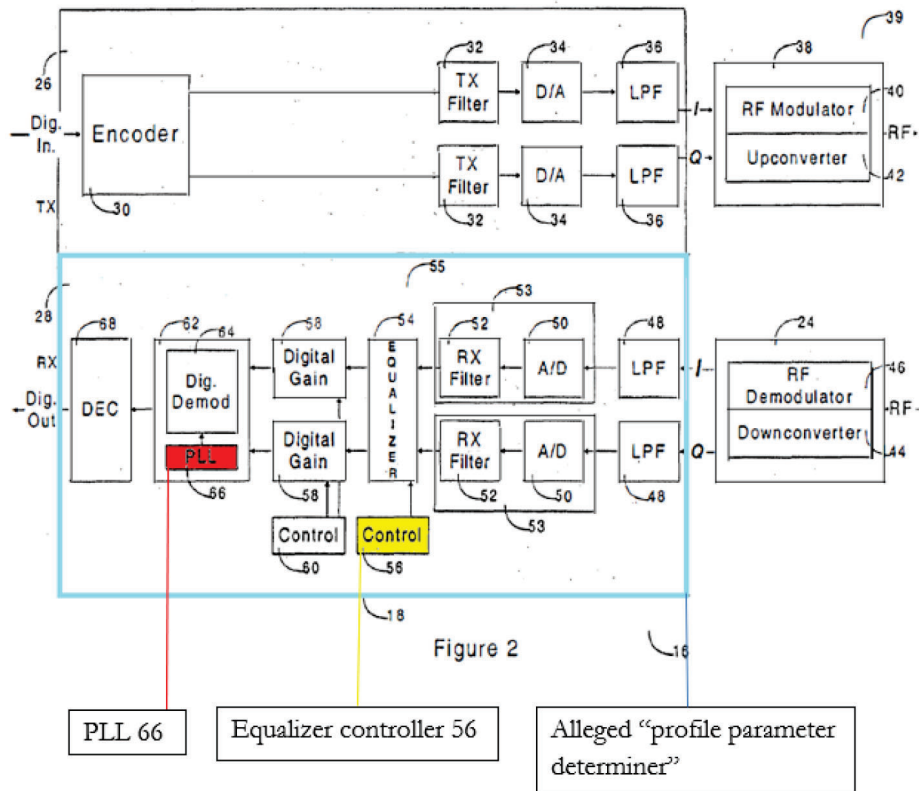
E. “coupled to” (’477 Patent, Claims 1, 13)

GAS’s Construction	Defendants’ Construction
No construction necessary	Plain and ordinary meaning, which is “joined or connected to”

Claim 1 recites “a profile parameter determiner coupled to receive an indication of an initial burst of the first burst data signal transmitted upon the first channel to the receiving station,” and “a profile parameter storage device coupled to said profile parameter determiner.” (’477 Patent at 13:1-12.) The parties agree the ordinary meaning of “coupled to” should apply, (Dkt. No. 57 at 18; Dkt. No. 60 at 18), and GAS even suggests Defendants’ construction “is not too far off” because “the term encompasses components that are joined or connected ‘in any way’” (Dkt. No. 61 at 6).

Defendants’ construction stems from their concern GAS could argue one component inside

of another might be considered “coupling.” (See Dkt. No. 60 at 18.) That concern comes from statements GAS made during an IPR proceeding that a prior-art reference did not disclose “coupling” because the “relevant storage devices were part of the ‘alleged determiner.’” (*Id.* at 18 (citing Dkt. No. 60-13 at 2, Patent Owner’s Prelim. Resp.)). More specifically, GAS reproduced Figure 2 of the cited reference (Genossar) and outlined the recited claim element in a blue box:



(Dkt. No. 60-13 at 18, Patent Owner’s Prelim. Resp.) Assuming item 56 is the claimed “profile parameter storage device,” GAS explained that, because item 56 forms part of the receive portion 28, item 56 cannot be “coupled” to the alleged determiner. (*Id.*; see also *id.* at 2 (asserting the petitioner’s position contradicts the presumption that separately listed claim elements are distinct components of the claimed invention).) This makes sense, as otherwise the “receive portion” would have been “coupled to” itself.

Defendants now argue such a position is inconsistent with GAS’s assertion that two items are in communication by any means such that data can be sent from one to the other, not just if they are directly ‘joined or connected to’ each other.” (Dkt. No. 60 at 18 (quoting Dkt. No. 57 at 19).) The Court, however, sees no inconsistency there, and the same reasoning applies. That is, two elements cannot communicate with one another if one of the elements is part of the other. Just as an invention cannot be coupled to itself, an invention does not communicate with itself. With that resolved, the Court finds no material dispute between the parties as to the scope of this term, which it construes as “joined or connected to in any way.”

F. “the at least one parameter” (’477 Patent, Claims 2, 13, 14)

GAS’s Construction	Defendants’ Construction
No construction necessary	Indefinite

Claim 1 requires a “profile parameter determiner for determining a value of *at least one signal-related parameter and at least one channel-related parameter*.” (’477 Patent at 13:4-6 (emphasis added).) Claims 2, 13, and 14, which directly or indirectly depend from Claim 1, require additional limitations regarding “the at least one parameter.” In Claim 2, for example, “determining the at least one parameter” is responsive to an initial burst of a “first burst data signal.” (*Id.* at 13:22-24; *see also id.* at 14:4-6 (Claim 13).) Defendants challenge these claims as indefinite because a skilled artisan cannot determine whether “the at least one parameter” in the dependent claims refers to the “signal-related parameter” or the “channel-related parameter” of Claim 1. (Dkt. No. 60 at 19-21.)

GAS, however, argues “the at least one parameter” could refer to either. (Dkt. No. 57 at 20.) In its reply, GAS cites the specification’s explanation that “[t]he profile parameter determiner determines a value of at least one parameter representative of communication of the burst data

signal.” (Dkt. No. 61 at 6 (citing ’477 Patent at 7:5-12).) According to GAS, Claim 1 repeats this phrasing, which confirms “both types of parameters are ‘representative of communication of the burst data signal to the receiving station.’” (*Id.*)

The Court agrees with Defendants. Claim 1 recites two different types of parameters, and the dependent claims fail to explain to which of these the disputed phrase refers. GAS’s position would be more persuasive if *something* in the dependent claims at least hinted at which of the parameters from Claim 1 are relevant, but there are no such contextual clues. Instead, GAS points to different language from the specification that is generally unhelpful, and it tries to rewrite the disputed term as “*at least one signal-related parameter and at least one channel-related parameter.*” Yet a skilled artisan is left to wonder which of the two types of parameters is “determined” *in response to* the initial burst of a “first burst signal,” or whether both are. Because each of these possibilities has different claim scope and the specification provides no insight into which meaning applies, the term is indefinite.

G. “communication station” (’383 Patent, Claims 1, 2, 4, 5, 13, 16)

GAS’s Construction	Defendants’ Construction
No construction necessary	“communication station in a fixed network”

The ’383 Patent has much of the same disclosure as the ’477 Patent. In fact, the patents have the same filing date and FIGS. 1-4 and the related text are identical, although they are not part of the same patent family.²

Defendants make many of the same arguments they make with respect to “receiving station” discussed *supra* Section IV.D. Specifically, Defendants allege the ’477 Patent limits the

² The patents’ underlying applications each claimed priority to U.S. Provisional Appl’n No. 60/262,825.

“present invention” to a fixed network, the entirety of the specification consistently describes the disclosed invention as a fixed wireless system, and there are no cellular or mobile network embodiments disclosed by the specification. (Dkt. No. 60 at 22-24.)

GAS’s arguments are also similar to those made for “receiving station.” GAS stresses certain claims are directed to a “fixed wireless access system” and others are not, thus invoking the doctrine of claim differentiation in GAS’s favor. (Dkt. No. 57 at 22 (comparing Claim 1 with Claim 2).) Moreover, GAS notes the Summary’s use of “communication station operable in a wireless communication system,” which omits any reference to a “fixed” system. (*Id.* at 24 (citing ’383 Patent at 7:43-51).)

As with the prior terms involving this issue, the Court agrees with GAS. The claims concern “[a]n apparatus for a communication station operable in a wireless communication system.” (’383 Patent at 12:46-47.) Nothing about the ordinary meaning of this language suggests a “fixed” requirement for either the station or the system. Nor does the ’383 Patent’s explanation of the technical field warrant narrowing that meaning. (*See* ’383 Patent at 3:31-34 (“The present invention is directed, in general, to communication network access systems and, more specifically, to an apparatus for processing data signals received from wireless subscriber stations.”).) In short, the specification’s references to *fixed* wireless networks do not give rise to clear lexicography or disavowal for this term. *See Thorner*, 669 F.3d at 1367-68 (noting both lexicography and disavowal “require a clear and explicit statement by the patentee”). Accordingly, the Court rejects Defendants’ position and will give this term a “plain and ordinary meaning” construction.

H. “subscriber[s],” “subscriber stations” (’383 Patent, Claims 1, 2, 4, 5, 13, 16)

GAS’s Construction	Defendants’ Construction
No construction necessary	“fixed subscriber station”

The parties generally proffer the same arguments made with respect to “communication station.” In fact, GAS briefs the two terms together. (*See* Dkt. No. 57 at 21-25; Dkt. No. 61 at 8-9.) Defendants say the ’383 Patent limits the invention to *fixed* subscribers and subscriber stations. (*See* Dkt. No. 60 at 25-26 (citing ’383 Patent at 5:26-29 (“base stations of a fixed wireless broadband system transmit . . . to fixed location antennas attached to the residences or offices of subscribers”)); *id.* at 6:46-52 (noting data are “transmitted to the base station by a subscriber station” in “a separate and distinct station channel environment”); *id.* at 7:31-33 (referring to “the base station of a fixed wireless access communication system” in which “data bursts are generated by a plurality of subscriber stations positioned within the coverage area defined by the base station”))).) Defendants also accuse GAS of equating “subscriber station” with “subscriber premises” in its brief. (Dkt. No. 60 at 26 (citing Dkt. No. 57 at 29).)

Regarding this latter argument, GAS’s brief does not suggest “subscriber stations” must be limited to “fixed subscriber stations.” Rather, GAS’s argument suggests “a subscriber *premise*” is a type of “subscriber station.” (*See* Dkt. No. 57 at 29-30.) Defendants, however, do not assert the meaning of “station” should be *limited to* something like “premise.” Rather, they only argue the ’383 Patent as a whole limits the scope of the terms to *fixed* stations. Because that argument is cumulative of those the Court has already considered and rejected for other terms at issue, the Court rejects Defendants’ construction for the same reasons and will give this term a “plain and ordinary meaning” construction.

I. “modulation orthogonalization” (’383 Patent, Claim 11)

GAS’s Construction	Defendants’ Construction
Plain and ordinary meaning, which is: “modulation parameters used to minimize interference between signals”	Indefinite

Claim 5 concerns “[a]n apparatus for a communication station operable in a wireless communication system at least to receive first and second data signals successively transmitted thereto by a first subscriber station and a second subscriber station.” (’383 Patent at 13:46-67.) Claim 11, which indirectly depends from Claim 5, then requires the first and second data signals to be “characterized by *modulation orthogonalizations* and wherein values of the *modulation orthogonalizations* form portions of the profiles maintained by the controller and stored at the memory portion of the controller.” (*Id.* at 14:25-31 (emphasis added).)

Defendants assert “modulation orthogonalization” has no ordinary meaning, and that nothing in the intrinsic record helps a skilled artisan understand its meaning. (Dkt. No. 60 at 27.) To the extent the specification mentions the term, which is only twice, the language mirrors that of the claim. (*Id.* (citing ’383 Patent at 6:61-65, 12:22-25).) Defendants acknowledge these are parameters, but say the passage fails to explain what the parameters actually are. (*Id.*)

The Court agrees. After explaining the term is a “specialized term of art” that would benefit from construction, (Dkt. No. 57 at 25), GAS fails to explain what the term means other than it is a parameter to be used for some purpose. GAS provides no way to discern, when confronted with a host of parameters, how to identify from among them the “modulation orthogonalizations,” and nothing in the specification helps. GAS correctly notes the specification need not expressly define the term, (Dkt. No. 61 at 9), but that does not obviate GAS’s obligation to show how a skilled artisan would understand the term’s meaning. GAS fails to do so, instead only offering an explanation of its purpose. Accordingly, the Court concludes the term is indefinite.

J. “wherein the at least the second subscriber station comprises a plurality of subscriber stations . . . the plurality of subscriber stations” (’383 Patent, Claims 1, 4)

GAS’s Construction	Defendants’ Construction
No construction necessary	Indefinite

Defendants suggest a skilled artisan would not understand whether “the plurality of subscriber stations”—the last 5 words of each claim—refers back to “a plurality of subscriber stations” in the preamble or the same phrase near the beginning of the last limitation. (Dkt. No. 60 at 29.) In other words, for Claim 1 (below), does the pink refer back to the yellow or the green?

1. An apparatus for a communication station operable in a wireless communication system at least to receive first and second data signals successively transmitted thereto by a first subscriber station and a second subscriber station, respectively, within a plurality of subscriber stations, the apparatus comprising:

- a first demodulator selectably coupled to receive the first data signals transmitted to the communication station;
- at least a second demodulator also selectably coupled to receive the second data signals transmitted to the communication station; and
- a controller, coupled to the first demodulator and to the at least second demodulator in a feedback arrangement, the controller alternately selecting the first data signals for application to the first demodulator and the second data signals for application to the second demodulator,

wherein the at least the second subscriber station comprises a plurality of subscriber stations and wherein the controller selectively applies the first and second data signals to the first and second demodulators according to a selected pattern by alternately coupling the first demodulator and the second demodulator to receive, selectably, the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations.

(Dkt. No. 60 at 29.) GAS replies that the phrase must refer to the preamble because the first subscriber station sends the first data signal. (Dkt. No. 61 at 10.)

The Court agrees with GAS. The entirety of the last limitation of each claim relates to communicating first and second data signals. For example, Claim 1 recites “wherein the controller

selectively applies the first and second data signals to the first and second demodulators according to a selected pattern by alternately coupling the first demodulator and the second demodulator *to receive*, selectably, the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations.” (’383 Patent at 12:63-13:3 (emphasis added); *see also id.* at 13:37-45.) The reference to “a plurality of subscriber stations” at the beginning of the “wherein” clause simply clarifies “the second subscriber station” has multiple stations. The limitation as a whole, however, refers back to the first and second demodulator of the first two limitations, which is coupled to receive the first and second data signals, respectively. Because of that, a skilled artisan would be reasonably certain “alternatively coupling the first demodulator and the second demodulator” in the last limitation includes alternately communicating with the first and second subscriber stations recited in the preamble and referred to collectively as “a plurality of subscriber stations.” Accordingly, the Court holds that, in the phrase “the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations,” “the plurality of subscriber stations” refers to “a plurality of subscriber stations” in the preamble.

V. CONCLUSION

Disputed Term	The Court’s Construction
“wireless access devices” (’931 Patent, Claims 1, 19, 28, 29)	Plain and ordinary meaning
“wireless access network” (’931 Patent, Claims 1, 19)	Plain and ordinary meaning
“sector” (’931 Patent, Claims 1, 19, 28, 29)	“area defined by an arc around the cell site, each covered by its own antenna(s)”
“in said downlink portion of said TDD frame” (’931 Patent, Claim 28, 29)	“in the same downlink portion of the same TDD frame”

“receiving station” (’477 Patent, Claims 1, 2, 5, 6, 14, 16-18)	Plain and ordinary meaning
“coupled to” (’477 Patent, Claims 1, 13)	“joined or connected to in any way”
“the at least one parameter” (’477 Patent, Claims 2, 13, 14)	Indefinite
“communication station” (’383 Patent, Claims 1, 2, 4, 5, 13, 16)	Plain and ordinary meaning
“subscriber[s],” subscriber stations” (’383 Patent, Claims 1, 2, 4, 5, 13, 16)	Plain and ordinary meaning
“modulation orthogonalization” (’383 Patent, Claim 11)	Indefinite
“wherein the at least the second subscriber station comprises a plurality of subscriber stations . . . the plurality of subscriber stations” (’383 Patent, Claims 1, 4)	In the phrase “the first and at least second data signals communicated by alternating ones of the plurality of subscriber stations,” “the plurality of subscriber stations” refers to “a plurality of subscriber stations” in the preamble.

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party’s claim construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Neither party may take a position before the jury that contradicts the Court’s reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the positions adopted by the Court.

So ORDERED and SIGNED this 8th day of November, 2024.


 RODNEY GILSTRAP
 UNITED STATES DISTRICT JUDGE