

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

PANTECH CORPORATION and PANTECH §
WIRELESS, LLC, §
§
Plaintiffs, §
§
v. §
§
ONEPLUS TECHNOLOGY (SHENZHEN) §
CO., LTD., §
§
Defendant. §

NO. 5:24-CV-00038-RWS-JBB

CLAIM CONSTRUCTION OPINION AND ORDER

In this patent case, Pantech Corporation and Pantech Wireless (together, “Pantech”) allege infringement by OnePlus Technology of claims from seven patents relating to wireless communication systems. The parties present 14 disputed terms or phrases for construction. Having considered the parties’ briefing, along with arguments of counsel at a July 9, 2025 hearing, the Court resolves those disputes as follows.

I. 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). 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.* (citations omitted). 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. *See 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.”).

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.

B. Means-Plus-Function Claiming

A patent claim may be expressed using functional language. *See* 35 U.S.C. § 112 ¶ 6 (pre-AIA)¹; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Under 35 U.S.C. § 112 ¶ 6, a structure may be claimed as a “means . . . for performing a specified function,” and an act may be claimed as a “step for performing a specified function.” *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002). When it applies, § 112 ¶ 6 limits the scope of the functional term “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.

But § 112 ¶ 6 does not apply to all functional claim language. There is a rebuttable presumption that § 112 ¶ 6 applies when the claim language includes “means” or “step for” terms, and a rebuttable presumption it does *not* apply in the absence of those terms. *Masco Corp.*, 303 F.3d at 1326; *Williamson*, 792 F.3d at 1348. These presumptions stand or fall according to whether one of ordinary skill in the art would understand the claim with the functional language to denote

¹ The one patent that potentially implicates means-plus-function claiming has an effective filing date before the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3, 125 Stat. 284, 285-93 (2011). *See* U.S. Patent 8,995,372 at [30] (noting the underlying application claims priority to a 2010 Korean application). The Court therefore refers to the pre-AIA version of the statute.

sufficiently definite structure or acts for performing the function in the context of the entire specification. *See Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (noting § 112 ¶ 6 does not apply when “the claim language, read in light of the specification, recites sufficiently definite structure” (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014))); *Masco Corp.*, 303 F.3d at 1326 (noting § 112 ¶ 6 does not apply when the claim includes an “act” corresponding to “how the function is performed”); *Personalized Media Commc’ns, LLC v. I.T.C.*, 161 F.3d 696, 704 (Fed. Cir. 1998) (noting § 112 ¶ 6 does not apply when the claim includes “sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term ‘means.’” (quotation marks and citation omitted)).

Construing a means-plus-function limitation involves multiple steps. “The first step . . . is a determination of the function of the means-plus-function limitation.” *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). “The next step is to determine the corresponding structure described in the specification and equivalents thereof. 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.” *Id.* (citations and quotations omitted). The corresponding structure “must include all structure that actually performs the recited function.” *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). But § 112 does not permit “incorporation of structure from the written description beyond that necessary to perform the claimed function.” *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

“[S]tructure can be recited in various ways, including [by using] ‘a claim term with a structural definition that is either provided in the specification or generally known in the art,’ or a

description of the claim limitation's operation and 'how the function is achieved in the context of the invention.'" *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1366 (Fed. Cir. 2022) (quoting *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2005)). For § 112 ¶ 6 limitations implemented by a programmed general-purpose computer or microprocessor, the corresponding structure described in the patent specification must usually include an algorithm for performing the function. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). In that case, the corresponding structure is not a general-purpose computer but rather the special-purpose computer programmed to perform the disclosed algorithm. *Aristocrat Techs. Austral. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

C. 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). And in the context of § 112 ¶ 6, "[t]he party alleging that the specification fails to disclose sufficient corresponding structure must make that showing by clear and convincing evidence." *TecSec, Inc. v. IBM*, 731 F.3d 1336, 1349 (Fed. Cir. 2013) (quoting *Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1380–81 (Fed. Cir. 2001)).

II. 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).

For each patent, Pantech characterizes a skilled artisan as one who, on the effective filing date, would have had “at least a Bachelor’s degree in electrical engineering, telecommunications engineering, or a related field, with at least two years of experience in the field of networking and wireless devices.” *See* Dkt. No. 50 at 1, 4, 6, 9, 11, 13, 17. OnePlus does not challenge this level of skill, which the Court generally adopts. The Court, however, modifies for clarity the level of education to a Bachelor’s degree and the amount of experience to two years.

III. THE DISPUTED TERMS FROM U.S. PATENT 9,288,824

A. The ’824 Patent

The ’824 Patent relates to “transmitting and receiving a random access request (random access preamble) and transmitting and receiving a random access response in a wideband radio access system.” ’824 Patent at 1:22–25. In a typical system, user equipment (UEs) attempts to access the system by transmitting a randomly selected sequence to a base station. *Id.* at 1:27–30. When detected, the base station transmits a random access response to the UE, which, based on that response, performs a timing advance (TA) operation to compensate for propagation delay. *Id.* at 1:30–35. Sometimes, however, two UEs might randomly choose the same sequence number, which could lead to one UE interpreting a response for another UE as its own. *See id.* at 2:7–11.

Figure 1A (below) shows the problem. In Step 110, a first UE attempts to access a network

with a randomly selected sequence “1” in an uplink (UL) subframe “0.” In Step 120, a second UE attempts access in subframe “1,” also with a randomly selected sequence “1.” If the base station detects the sequences of the two UEs, it transmits responses of the detected sequences in Step 130. Those responses include the sequence number. When a response with sequence “1” is later received in UL subframe “7,” both UEs might determine the response is for its sequence. In other words, one of the UEs erroneously determines the response relates to its earlier request. Because the two UEs perform time synchronization based on the same response, one UE performs erroneous time synchronization, which may cause the two UE’s to later use the same resource. *See generally* ’824 Patent at 2:12–29.

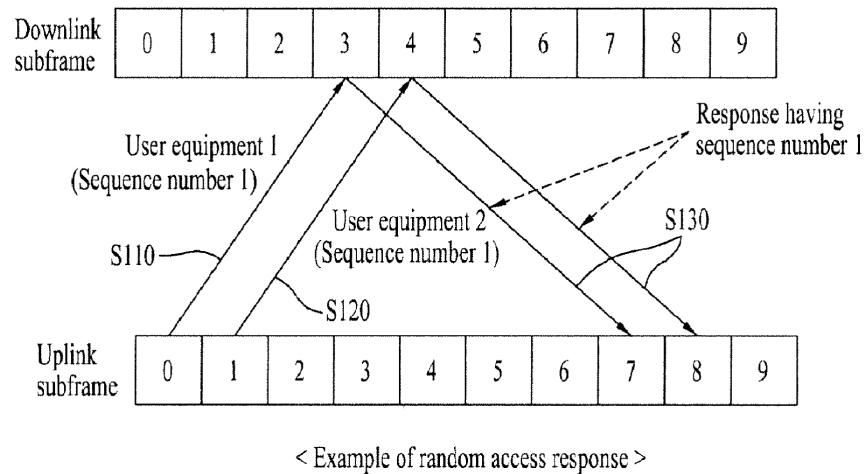
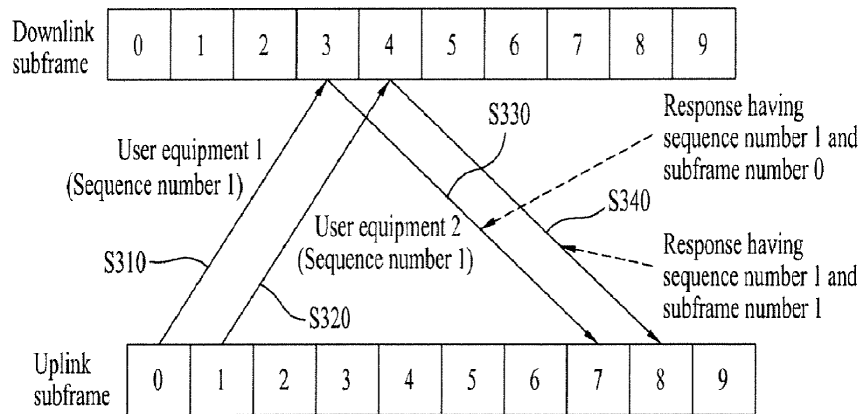


FIG. 1A of the ’824 Patent, which shows random access preambles transmitted from two UE’s (S110, S120), each with sequence number “1,” and responses to those UEs (S130) having the same sequence number “1”

The patent teaches solving this problem by including in the response time-related information about when the UE transmitted the preamble. For example, the time-related information may include the subframe number corresponding to the time when the UE transmitted the

preamble. When the UE detects a response, it checks whether the response is to the random access request transmitted by that UE using the sequence number *and* the information about when the UE transmitted its request.

For example, in Figure 3A (below), when the base station transmits the random access response, it includes the uplink subframe number in which the UE transmitted its request—subframe “0” for Step 330 and subframe “1” for Step 340. When one of the UEs receives a response with the sequence “1,” it also checks whether the uplink subframe number in the response matches the uplink subframe number in which it transmitted the request. If there is a match, the UE knows it is the intended recipient. *See generally* ’824 Patent at 8:37–54.



< Example of response including time information >

FIG. 3A of the ’824 Patent, which shows random access preambles transmitted from two UEs (S310, S320) and responses to those UEs (S330, 340) having the same sequence number, but also including the subframe number in which the UEs transmitted the preambles

The parties have two disputes about this patent, both of which relate to Claim 7. The claim recites:

- 7. A user equipment (UE) to perform a random access procedure, the UE comprising:

a transmitter to transmit a random access preamble to a base station;

a processor configured to determine a **time period** for receiving a random access response responsive to the random access preamble; and

a receiver to receive the random access response from the base station within the **time period**,

wherein the **time period** starts at a time point after an end time of transmitting the random access preamble, and a subframe number corresponding to the time point is obtained by adding an offset to a subframe number corresponding to the end time of transmitting the random access preamble, and the offset equals three.

'824 Patent at 19:29–43 (emphasis added). First, the parties dispute the meaning of “time period,” with Pantech suggesting a “time period” could be a frame or subframe. Second, OnePlus challenges the claim’s “wherein” clause as indefinite.

B. “time period” ('824 Patent, Claim 7)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	“an amount of time”

The parties dispute the ordinary meaning of this term. OnePlus accuses Pantech of advancing a position “that allows a time period to refer to something other than time.” Dkt. No. 55 at 2. Pantech asserts OnePlus advances a “seemingly innocuous” construction that excludes “an understanding of ‘time period’ that would correspond to frames, subframes, slots, or other parameters, rather than, say, seconds or milliseconds.” Dkt. No. 50 at 2. Pantech says, for example, one radio frame lasts 10 ms and one slot equals one-half of a millisecond. Dkt. No. 62 at 1.

The Court agrees with OnePlus’s construction. To start, Pantech does not establish the ordinary meaning of “time period,” in its words, “corresponds to frames, subframes, slots or other

[non-temporal] parameters.” Although Pantech says “time periods may be defined by frames” and the like, in fact the reverse is true. That is, frames and subframes may be defined, or at least characterized, by time periods. *See* ’824 Patent at 6:31–38 (describing a specific frame structure with frame lengths of 10 ms and slots of one-half millisecond).

The rest of the claim language supports this conclusion. The “wherein” clause, for example, requires “the time period [to start] at a *time point*” rather than a frame or subframe. ’824 Patent at 18:38. Also, the “wherein” clause refers to a subframe *number* corresponding to the *end time* of transmitting the random access preamble. *Id.* at 18:41. Thus, to a certain extent, the claim language already contemplates the “correspondence” between subframe number and time that Pantech fears would be eliminated by adopting OnePlus’s construction.

Finally, the specification also supports treating time period as an amount of time. Most of the detailed description discusses “time information” rather than “time periods.” For example, the patent describes Figure 3A as “showing a random access response including *time information* according to an embodiment of the present invention.” ’824 Patent at 3:61–63 (emphasis added); *see also id.* at 11:25–29 (explaining, with respect to Figure 6A, “*time information* (that is, delay offset information) related to the delayed time is preferably included in the random access response. As the *time information* (or the time related information), other information related to the time and/or the subframe number may be used.” (emphasis added)).

The only mentions of “time periods” in the Detailed Description relate to “other embodiments” that don’t concern “time information.” Specifically, the patent explains that,

[i]n the other embodiments of the present invention, a user equipment waits for a response at a predetermined time period. The user equipment which transmits a random access preamble can previously know a time point when a response of the random access preamble transmitted by the user equipment is transmitted, on the basis of the predetermined time period.

'824 Patent at 13:52–58. *See also id.* at 14:48–54 (“The user equipment which attempts random access may wait for a half of the HARQ round trip time or a half of the total number of HARQ processes from a time point when a random access preamble is transmitted, and wait for a response within a predetermined time period from a time point when a half of the HARQ round trip time or a half of the total number of HARQ processes elapses.”). Nothing about these uses of “time period” in the specification suggests a meaning different from an “amount of time.”

Pantech suggests Figure 2 supports its position, Dkt. No. 50 at 2, but it actually detracts from it. To “use” a frame as a measure of time, as Pantech admits, one must first know the length of each frame. While a skilled artisan would understand frames are 10 ms in length for most real-world implementations, nothing in the claims prevents frames from having other lengths. And regardless of the frame length (in time), some conversion must be done to derive a time, such as multiplying the length of each frame by the number of frames. That alone shows a “time period” is not coextensive with a number of frames. Otherwise, there would be no need for a conversion from subframes to units of time.

In the end, Pantech has not shown the ordinary meaning of “time period” to a skilled artisan is different than its lay meaning.² Nor has Pantech shown any lexicography or disclaimer that alters that lay meaning. Accordingly, the Court adopts OnePlus’s construction of “amount of time.”

² Although Dr. Cooklev opines that “‘time period’ is not difficult to understand even for a layperson,” Dkt. No. 50 at 3 (citing Cooklev Rep., Dkt. No. 50-2 ¶ 67), a layperson is not going to understand “time period” as anything other than an “amount of time.” And no one has argued that a layperson would understand what a frame or subframe is.

- C. “wherein the time period starts at a time point after an end time of transmitting the random access preamble, and a subframe number corresponding to the time point is obtained by adding an offset to a subframe number corresponding to the end time of transmitting the random access preamble, and the offset equals three” (’824 Patent, Claim 7)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	Indefinite

This dispute concerns the last limitation of the claim. OnePlus says the limitation is indefinite because it doesn’t specify which component performs the recited function. Dkt. No. 55 at 3. In particular, says OnePlus, there is no recited structure to perform the “adding an offset” function recited at the end of the limitation. *Id.* at 5. According to Pantech, however, the “obtaining” and “adding” is done by the “processor” recited earlier in the claim. Dkt. No. 50 at 3 (asserting “the processor determines the time period”); *see also* Hr’g Tr., Dkt. No. 81 at 15:12–19 (agreeing the processor obtains the time point).

The question is whether a skilled artisan would be reasonably certain what structure performs the recited function. *See Nautilus*, 572 U.S. at 901 (“[A] patent is invalid for indefiniteness [if it] fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.”). Here, a skilled artisan would recognize the recited “processor” as performing the function. The “processor” limitation recites “determining a time period,” and the “wherein” clause then limits the nature of that time period. Despite the “transmitter” limitation between them, a skilled artisan would understand those two limitations as being related, and would be reasonably certain the recited “transmitter” and “receiver” don’t implement that processing requirement.

OnePlus cites three cases in opposition to this conclusion, but each is distinguishable. First, OnePlus points to *Rembrandt Data Techs. v. AOL*, 641 F.3d 1331 (Fed. Cir. 2011), in which the

first four of five claim limitations were structural: “first buffer means for partitioning,” “fractional encoding means for receiving,” “second buffer means for combining,” and “trellis encoding means for trellis encoding.” *Rembrandt*, 641 F.3d at 1339. The fifth limitation was “transmitting the trellis encoded frames,”³ yet none of the other limitations suggested any structure or function related to a transmitter. *Rembrandt* asked the court to insert “transmitter section for” at the beginning of the last limitation, which it declined to do because *Rembrandt* had “not demonstrated that a skilled artisan would have read its proposed language into the claim.” *Id.* at 1339–40.

Rembrandt is distinguishable. For one, the challenge in *Rembrandt* was that the claim at issue was of a mixed statutory class, and therefore indefinite because a skilled artisan wouldn’t know whether the claim covered the device or use of the device. *Id.* at 1338–39. Here, however, OnePlus asserts the claim is indefinite because it’s not clear which structure is performing the function. Moreover, unlike *Rembrandt*, the claim recites structure that a skilled artisan would understand can perform the function.

Second, OnePlus cites *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002), which is also distinguishable. In *Allen Eng’g*, the claims at issue concerned “riding trowels, which are machines used to smooth the surface of freshly poured concrete. Such trowels are powered by an internal combustion engine and are steered by the manipulation of a control stick or sticks.” *Id.* at 1342. The claims at issue “limit[ed] one of the two pivot steering boxes to pivoting ‘its gear box *only* in a plane *perpendicular* to said biaxial plane,” but the specification taught something contrary—that “rotation about the axis established by bolt 272 is not permitted; gearbox 85A *cannot* pivot in a plane *perpendicular* to the biaxial plane.” *Id.* at 1349 (emphasis by

³ The patent at issue concerned a modem using “trellis encoding,” which is a technique for reducing errors in data transmission. *Rembrandt*, 641 F.3d at 1333.

the appellate court). Holding the claim indefinite, the appellate court concluded “a simple comparison of the claims with the specification [shows] that the inventor did not regard a trowel in which the second gear box pivoted only in a plane perpendicular to the biaxial plane to be his invention.” *Id.*

Here, however, it is not apparent that the inventor did not regard an offset that equals three as part of his invention. While a specific offset amount might not be disclosed, the notion of *some* offset is. *See* ’824 Patent at 11:27–29 (“time information (that is, delay offset information) related to the delayed time is preferably included in the random access response”). Unlike the facts of *Allen Eng’g*, OnePlus fails to point to anything in the specification that shows an offset of “three” contradicts what the inventor regarded as his invention.

Finally, OnePlus cites *In re Shafovaloff*, No. 2024-1035, 2025 WL 1779173 (Fed. Cir. 2025), but that case concerns inconsistency within a claim. The claims at issue recited “a bent tab incorporated within the one piece planar mirror surface.” *Id.* at *1. The PTAB agreed with the examiner “that the bent tab inherently creates a bent portion that is not on the same plane as the rest of the planar mirror surface (i.e., a non-planar surface) and thus cannot be ‘within’ the planar mirror surface, as claimed.” *Id.* (emphasis removed). The appellate court agreed, concluding the claims “are contradictory because they simultaneously require a (1) ‘one piece planar mirror surface’ that further includes (2) ‘a bent tab incorporated within the . . . planar mirror surface.’” *Id.* (ellipses in original). On appeal, the inventor argued “the specification clarifies that the tab is ‘bendable so it can be bent and not fracture,’” which is true. *Id.* at *2. But that, said the court, is not what the claim requires. *Id.*

Despite OnePlus’s assertion to the contrary, the Court is not rewriting the claims. Rather, the Court is determining how a skilled artisan would understand them. For the reasons articulated

supra, a skilled artisan would understand the recited processor performs the “obtaining” step. Accordingly, the Court construes “a subframe number corresponding to the time point is obtained” as “the processor obtains a subframe corresponding to the time point.”

IV. THE DISPUTED TERMS FROM U.S. PATENT 11,212,838

A. The '838 Patent

The 3G network access procedure at the time of the invention included a preamble phase “followed by channel acquisition information and message transmission for random access.” ’838 Patent at 1:47–50. Because the channel used for random access is shared, only short control messages are transmitted to avoid tying up the channel. *Id.* at 1:50–54. The patent suggests this channel could also be used for intermittent data transactions with long wait times between them, like “applications requiring frequent transmission of keep-alive messages.” *Id.* at 1:65–67; *see also id.* at 1:55–57 (noting “WTRUs demanding larger data rates may be configured by the network to use dedicated [rather than shared] resources”).

The patent teaches using the enhanced dedicated channel (E-DCH) when the wireless transmit/receive unit (WTRU) is in the cell forward access channel (CELL_FACH) state to increase the data rate of a shared channel. In the CELL-FACH state, the WTRU “does not use dedicated channels and thus allows better power consumption, at the expense of a lower uplink and downlink throughput.” WIPO Patent Application 2008137421A2 at [0005].⁴ In contrast, in the CELL_DCH state, the WTRU has dedicated channels in both the uplink and downlink directions. *Id.* The problem at the time, however, was that there was no way of terminating the E-RACH message phase,

⁴ This application is a foreign patent document cited by the ’838 Patent, and thus part of the intrinsic record.

so there would be nothing informing the network to release the E-DCH for other use. *See* U.S. Patent 8,774,104 at [57] (“The actions upon termination of the E-RACH messages are provided to release enhanced dedicated channel (E-DCH) resources while in cell forward access channel (CELL_FACH) state or transition to cell dedicated channel (CELL_DCH) state.”).⁵

Figures 4–5 and the related text provide a solution. After the network allocates E-DCH resources, those resources may be used for enhanced uplink transmission until it receives a trigger, after which it releases the resources. *See* ’838 Patent at 4:5–28. The trigger comes from a timer module running multiple timers that start on any of the conditions (501–505) shown in Figure 5. *See id.* at 4:29–47 (describing the use of a timer module with multiple timers). For example, “the timer may start as soon as the radio resource control (RRC) provides the [medium access control] MAC with the timer values, and after receiving the E-DCH resource index,” which indicates the allocated resource. *Id.* at 5:9–11. The WTRU will release the assigned resource when the timer expires. *Id.* at 4:40–41.

B. “uplink resources” (’838 Patent, Claims 1–4)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	“resources that include at least an indication of a spreading code”

Claim 1 recites:

1. A wireless transmit/receive unit (WTRU) comprising:
 - a receiver;
 - a transmitter; and
 - a processor;

⁵ The ’838 Patent is a continuation of, claims priority to, and incorporates the ’104 Patent by reference. ’838 Patent at 1:8–28.

wherein

the receiver and the processor are configured to receive at least one radio resource control (RRC) message indicating **uplink resources** for WTRU and medium access control (MAC) timer information,

the transmitter and the processor are configured to transmit uplink data based on the indicated **uplink resources**,

the processor is configured to deactivate the indicated **uplink resources** in response to a MAC timer expiring, and

the MAC timer is configured based on the MAC timer information indicated by the received RRC message.

'838 Patent at 11:5–20 (emphasis added).

Stressing the patent does not use the term “uplink resources,” OnePlus says its construction is correct because of the disclosure’s description “of a spreading code consistent with the use of the invention” in 3G applications. Dkt. No. 55 at 6. The specification, notes OnePlus, only describes the E-DCH to be used with random access procedures in 3G networks. *Id.* Pantech replies that the patent does not even mention a spreading code. Dkt. No. 62 at 3. And Pantech’s expert opines that a “resource” was understood to encompass more than just a spreading code on the effective filing date. Cooklev Rep., Dkt. No. 50-2 ¶¶ 76–77 (“a resource [] is made up of one subcarrier in frequency domain and one OFDM symbol in time domain”).

The Court agrees with Pantech. First, OnePlus does not dispute that, at the time of invention, an “uplink resource” was not limited to spreading codes. Extrinsic evidence supports that. *See* Cooklev Rep., Dkt. No. 50-2 ¶¶ 76–77 (citing a 2007 source that describes subcarriers spaced 15 kHz apart and grouped into sets of consecutive sub-carriers “corresponding to the uplink resource blocks”). Thus, the ordinary meaning of the term is not limited as OnePlus suggests, so OnePlus must show lexicography or disclaimer to support its position. *See Luminara Worldwide,*

LLC v. Liown Elecs. Co., 814 F.3d 1343, 1353 (Fed. Cir. 2016) (“Absent lexicography or disavowal, we do not depart from the plain meaning of the claims” (citing *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012))).

OnePlus, however, makes no such showing. Rather than relying on lexicography or disavowal, OnePlus instead bases its construction on the notion that a skilled artisan “would have understood from these teachings that the invention relates to signals providing a particular improvement of the 3G standard, not any subsequent standard.” Dkt. No. 55 at 8. Typically, however, such an implicit disclaimer would be supported by statements about the scope of the “present invention” or some prosecution history. *See Luminara*, 814 F.3d at 1353 (citing cases where the court “found disavowal or disclaimer based on 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’”). OnePlus, however, points to no such statements.

OnePlus’s arguments seem more appropriate as a written-description challenge, which requires the specification to show “that the inventors possessed the full scope of the claimed invention.” *Juno Therapeutics, Inc. v. Kite Pharma, Inc.*, 10 F.4th 1330, 1336 (Fed. Cir. 2021). “The [written description] requirement operates as a timing mechanism to ensure fair play in the presentation of claims after the original filing date and to guard against manipulation of that process by the patent applicant.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (quoting Janice M. Mueller, *Patent Misuse Through the Capture of Industry Standards*, 17 Berkeley Tech. L.J. 623, 638 (2002)).

In *PowerOasis*, for example, the appellate court rejected the patentee’s argument that the written-description requirement was satisfied if an earlier related application supported the term “customer interface.” *Id.* at 1311 (“That the Original Application may support a narrower

construction of ‘customer interface’ as a display on the vending machine does not mean that the Original Application supports the broader construction of a ‘customer interface’ as an interface located on the customer’s laptop (remote from the vending machine.”). This is analogous to the present situation, where Pantech filed the underlying application a decade after the earliest effective filing date. *See* ’838 Patent at [60], [63]. Indeed, the crux of OnePlus’s argument is that Pantech is extending the disclosure, which teaches a very specific 3G warm-up procedure, to 4G. *See* Hr’g Tr., Dkt. No. at 23:1–6; *see also id.* at 19:3–7 (“[W]hat happened is [Pantech] wrote a claim using uplink resources long after 4G came out and 3G was no longer used, and now they’re trying to say that this claim [that uses] this generic term, covers a 4G network. That’s . . . the dispute here.”). But now is not the time to resolve written-description disputes.

Finally, OnePlus relies on two cases from this Court about standards, but neither are inconsistent with the Court’s conclusion on this term. In *Chrimar Sys., Inc. v. Alcatel-Lucent USA, Inc.*, No. 6:15-cv-163-JDL, 2016 WL 1228767, at *8–9 (E.D. Tex. Mar. 28, 2016), the Court construed “BaseT” to mean only those BASE-T standards “established” before the priority date of the asserted patents. In *Fundamental Innovation Sys. Int’l LLC v. Samsung Elec. Co.*, No. 2:17-cv-145-JRG-RSP, 2018 WL 647734 (E.D. Tex. Jan. 31, 2018), the claims concerned a USB adaptor that included a “primary USB connector.” *Id.* at *7. The parties agreed that “USB” referred to industry standards, and the Court held the term “USB” in the asserted patents should be limited to the USB standards at the time of the claimed invention. *Id.* at *11. Here, there is no assertion, much less agreement, that the term “uplink resources” implicates an industry standard, so both cases are inapplicable.

The other cases to which OnePlus points stand for the unremarkable proposition that “a term’s meaning ‘must be interpreted as of the effective filing date.’” *See* Dkt. No. 55 at 6 (quoting

PC Connector Sols. LLC v. SmartDisk Corp., 406 F.3d 1359, 1363 (Fed. Cir. 2005), and *Kopykake Enters., Inc. v. Lucks Co.*, 264 F.3d 1377 (Fed. Cir. 2001) (“when a claim term understood to have a narrow meaning when the application is filed later acquires a broader definition, the literal scope of the term is limited to what it was understood to mean at the time of filing”). The Court provides such an interpretation here, as OnePlus has not shown the ordinary meaning of the term was limited to only spreading codes or any later lexicography or disclaimer at the time of the claimed invention. Because that is sufficient to resolve the dispute, the Court will give this term a “plain and ordinary meaning” construction.

V. THE DISPUTED TERMS FROM U.S. PATENT 9,763,283

A. The '283 Patent

The '283 Patent relates to “controlling a radio link in a wireless communication system supporting dual connectivity.” '283 Patent at 1:21–22. “Dual connectivity” refers to a UE simultaneously using both a macro cell and a small cell, such as where the coverage of those overlap. *Id.* at 2:9–10. Small cells may be positioned either inside or outside a macro cell, and are often used to enable communication at the macro cell edge or in coverage holes. *Id.* at 1:38–47.

The patent more specifically concerns how to handle a radio link failure in one of the two radio links. Rather than perform a reestablishment procedure for the failed link, which would be typical, the patent teaches shifting the failed link’s data transmission and reception to the other link. *See* '283 Patent at 2:21–35. To that end, Claim 1 recites:

1. A user equipment for performing radio link control in a wireless communication system supporting dual connectivity, the user equipment comprising:
 - a processor configured to detect a radio link failure (RLF) for a secondary serving cell provided by a secondary base station (secondary eNB, SeNB) and to generate an RLF indicator indicating

occurrence of the RLF for the secondary serving cell; and
 a transmitting unit configured to transmit the RLF indicator to a master base station (master eNB, MeNB) connected through radio resource control (RRC),
 wherein the RLF indicator comprises a cell identifier (cell ID), and the user equipment stops uplink transmission of physical uplink shared channel (PUSCH), physical uplink control channel (PUCCH), and sounding reference signal (SRS) to the secondary serving cell, based on the RLF for the secondary serving cell.

Id. at 17:1–23.

B. “master base station (master eNB, MeNB)” (’283 Patent, Claims 1–3); “secondary base station (secondary eNB, SeNB)” (’283 Patent, Claim 1)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meanings	“Master eNB” and “Secondary eNB”

The parties dispute whether the parentheticals in the disputed terms are *examples* of master and secondary base stations, or whether the terms are definitional of or interchangeable with them. Pantech asserts the former, and that the claim language is simply claiming the broader concept of a ‘base station’ before providing “eNB” as an example. Dkt. No. 50 at 7. OnePlus responds that, had the patent not intended the content of the parentheticals to be limiting, it would not have included them. Dkt. No. 55 at 11. The parties agree that OnePlus’s position would limit the master and secondary base stations to base stations in LTE networks. *See* Dkt. No. 50 at 7 (“OnePlus seeks to anchor these claim terms to the LTE standard”); Dkt. No. 55 at 10 (“A ‘master eNB, MeNB’ is a master base station in a 4G network.”).

The Court agrees with OnePlus. First, in each parenthetical, the alleged “examples” refer to the same thing, which suggests they are not examples but rather different ways of referring to the same element. Second, considering the parentheticals as examples violates the cannon of

construction against superfluous claim language. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1257 (Fed. Cir. 2010) (“Claims must be interpreted with an eye toward giving effect to all terms in the claim.”). This understanding is consistent with how the remaining language in the claim uses parentheticals to refer to specific phrases (that is, “radio resource control (RRC),” “cell identifier (cell ID),” “physical uplink shared channel (PUSCH),” etc.).

Because the function of the claims is to “define and circumscribe,” absent clear indication that the claim language is only exemplary (e.g., “e.g.”), the Court holds these parentheticals are definitional. *See Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1347 (Fed. Cir. 2010) (“Claims define and circumscribe, the written description discloses and teaches.”). Accordingly, the Court construes these terms as “Master eNB” and “Secondary eNB,” respectively.

VI. THE DISPUTED TERMS FROM U.S. PATENT 8,863,573

A. The '573 Patent

Like the '283 Patent, the '573 Patent relates to dual connectivity. '573 Patent at 1:22–25. Because a UE connected to both a macro and small base station has two paths for data flow, data might be received out of order through both channels. For example, Figure 12 (below) shows odd-numbered packet data units (PDUs) received from a macro base station and even-numbered PDUs received from a small base station. The UE receives the PDUs non-sequentially due to the use of the different paths and the delays between them. *See generally* '573 Patent at 12:30–14:2.

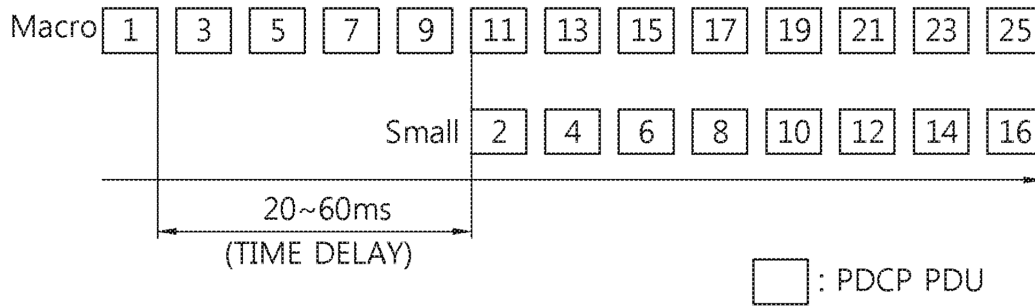


FIG. 12 of the '573 Patent

To address this problem, the patent teaches waiting to transmit service data units (SDUs)⁶ to the upper layer of the EU until enough SDUs have been received over the network for them to be transmitted sequentially. If a sequence number (SN) of a received service data unit (SDU) corresponding to a received PDU is not sequential with other already received SDUs, the UE starts a timer for that SDU. When the timer expires, the SDU is transmitted to the upper layer with the assumption the missing PDU has been lost and won't be received. But while the timer is running, when the PDU corresponding to the missing SDU is received, the two SDUs are sequentially transmitted to the upper layer.

⁶ Very generally, an SDU is the data of interest. A PDU is a larger packet that includes one or more SDUs plus addition network headers for routing and transmission information.

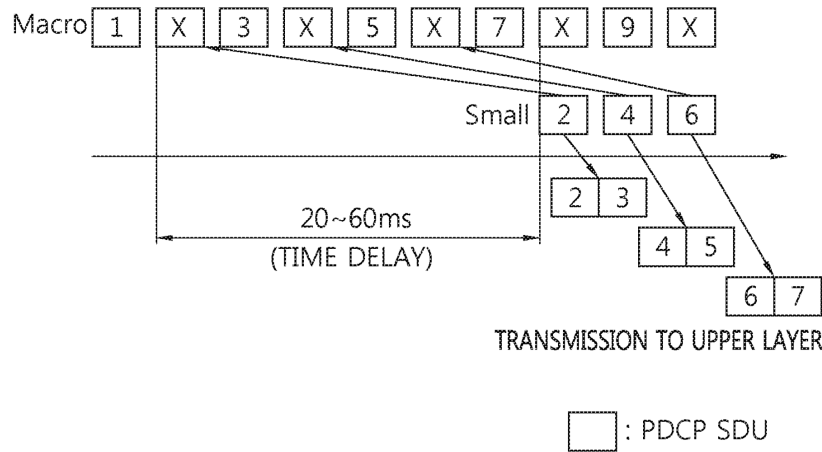


FIG. 13 of the '573 Patent

For example, as shown in Figure 13 (above), because the UE receives SDU #3 before PDU #2, the UE starts a timer for PDU #3. If SDU #2 is present in the UE (that is, SDU #2 has been extracted from its corresponding PDU) before the associated timer's expiration, the UE confirms SDU #2 and SDU #3 are sequentially present after SDU #1 and sequentially delivers them to the upper layer.

The disputes from this patent relate to Claim 8, which recites:

8. A user equipment (UE) for receiving multi-flow data with respect to one evolved packet system (EPS) bearer through a macro base station (macro eNB) and a small base station (small eNB) serving a single cell in a wireless communication system supporting dual connectivity, the UE comprising:
 - a receiving unit receiving packet data convergence protocol (PDCP) packet data units (PDUs) through the macro base station and the small base station and receiving from the macro base station information related to in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message; and
 - a processor obtaining PDCP service data units (SDUs) corresponding to the PDCP PDUs,
 wherein the PDCP SDUs are indicated by a predefined PDCP sequence number (SN),

wherein the RRC message includes a PDCP-configuration information element (IE), and
the processor determines the value of in-sequence timer based on the PDCP-configuration IE.

'573 Patent at 19:1–20.

B. “macro base station” ('573 Patent, Claim 8); “small base station” ('573 Patent, Claim 8)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	“Macro eNB” and “Small eNB”

Despite the somewhat complicated technical subject matter, these are straightforward disputes similar to the disputes from the '283 Patent. Claim 8’s preamble recites “a user equipment (UE) for receiving multi-flow data with respect to one evolved packet system (EPS) bearer through a macro base station (macro eNB) and a small base station (small eNB) serving a single cell in a wireless communication system supporting dual connectivity.” '573 Patent at 19:1–5. The parties dispute whether the parentheticals “macro eNB” and “small eNB” are exemplary or limiting.

For the same reasons set forth *supra*, the Court concludes they are limiting. In addition, the most general description of the invention supports the notion these terms are being used interchangeably with “macro base station” and “small base station.” *See* '573 Patent at [57] (“The present invention provides a method for user equipment receiving multi-flow data through a macro base station (macro eNB) and a small base station (small eNB) . . .”). Finally, the claim’s reference to an evolved packet system (EPS) would signal to a skilled artisan this concerns a 4G network. *See* Kakaes Decl., Dkt. No. 55-1 ¶ 79 (associating the word “evolved” with 4G networks). Accordingly, the Court construes these terms as “Macro eNB” and “Small eNB,” respectively.

VII. THE DISPUTED TERM FROM U.S. PATENT 9,369,251

A. The '251 Patent

This patent relates “to a method and an apparatus for performing muting for all or a partial resource region in a resource space (PDSCH, Physical Downlink Shared Channel) . . . so as to avoid interference from a neighboring cell at the time of allocating a resource of a channel state information reference signal (hereinafter referred to as “CSI-RS”).” ’251 Patent at 1:27–33. For example, in Figure 14 (below), Cell A might mute its signals in a resource region that Cell B also uses so that a UE in the overlap area between Cell A and Cell B can receive information from Cell B without interference. To be clear, however, “resource region” does not refer to a geographic area, but a certain bandwidth at a certain time.

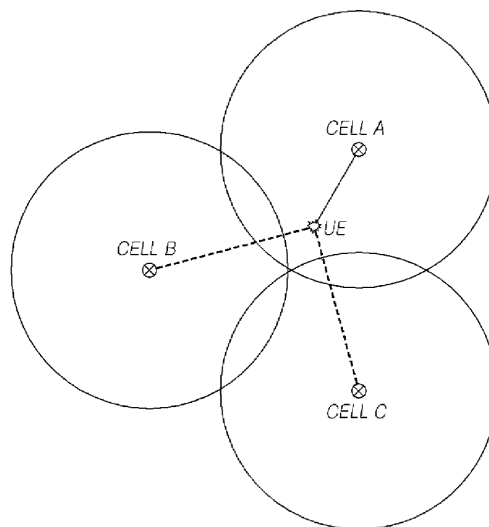


FIG. 14 of the '251 Patent

To do this, the patent teaches (1) receiving channel state information of the neighboring cell, (2) determining a muting region, which is a time/frequency resource region that overlaps with resource regions of the neighboring cell, (3) generating the muting information that indicates a where muting is to be performed in the muting subframes, and (4) transmitting the generated

muting information to the UE. '251 Patent at 2:58–2:3:10. Figure 20 (below) shows a graphical representation of the data sent from the base station indicating which resources to mute, with the vertical axis representing frequency (subcarrier) and the horizontal axis representing time, increasing from left to right. *Id.* at 4:43–45.

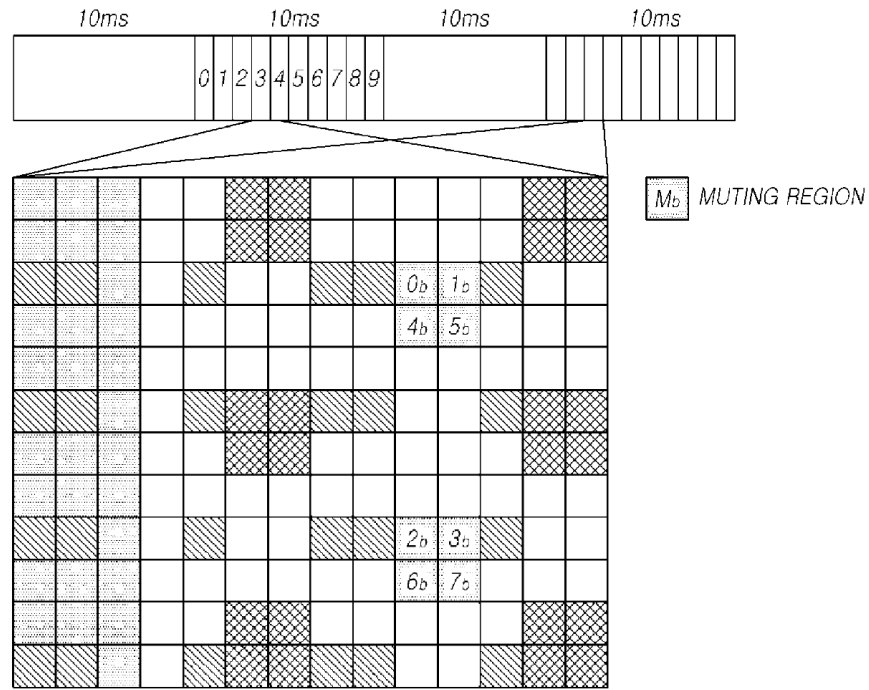


FIG. 20 of the '251 Patent

B. “the mapping process including a muting for zero power transmission” ('251 Patent, Claim 12)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	Indefinite

Claim 12 recites a UE implementing this process as:

- 12. A user equipment to receive Channel State Information-Reference Signal (CSI-RS) muting information from a serving cell, the user equipment comprising:
 - a processor configured to receive and determine CSI-RS muting

information including a first data field that indicates a cycle and an offset of muting subframes and a second data field having n-bit bitmap . . . , each bit of the n-bit bitmap indicating whether to apply muting in the muting sub- frames; and a receiver to receive a signal including data, mapped to resource elements using the CSI-RS muting information, **the mapping process including a muting for zero power transmission.**

'251 Patent at 38:43–56 (emphasis added). OnePlus says this claim is indefinite because the disputed phrase “lacks antecedent, is untethered to any other structure or element in the claim, and is a method step residing in a device claim.” Dkt. No. 55 at 15. According to Pantech, however, this “limitation modifies the nature of the claimed data” to require muting. Dkt. No. 62 at 4.

The Court agrees with Pantech. The structure of the claim ties “the mapping process” to the received data, which would lead a skilled artisan to conclude they are related. The specification confirms that relationship by providing examples in which the data corresponds to resource regions and includes indications for muting. *See, e.g.*, '251 Patent at 28:41–53 (describing FIGS. 19–20). Thus, a skilled artisan would understand this limitation simply requires that the received data include information about actual muting and be logically associated with a specific resource region. The claim is not indefinite, and the Court construes this term as “the data including a muting for zero power transmission.”

VIII. THE DISPUTED TERMS FROM U.S. PATENT 8,995,372

A. The '372 Patent

The '372 Patent relates to “performing random access in a communication system that supports a plurality of component carriers (CCs).” '372 Patent at 1:17–19. A CC is a frequency block (e.g., 20 MHz), and communication systems may define carrier aggregation (CA) that uses multiple CCs as a single system band. “For example, when five CCs having a maximum bandwidth

of 20 MHz are used, the wireless communication system may support a quality of service with a bandwidth expanded up to 100 MHz.” *Id.* at 4:20–23.

The patent more specifically relates to performing random access with a group of CCs. When multiple CCs are aggregated, one of those CCs is set as a delegate CC for purposes of determining the “timing advance” (TA) value.

The parties have two disputes from this patent, both of which relate to Claim 8. That claim recites:

8. An apparatus for performing random access in a wireless communication system, the apparatus comprising:
 - a **uplink timing group configuring unit** to configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs;
 - a **delegate CC setting unit** to set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC;
 - a TA value obtaining unit to obtain a TA value to be used for obtaining a UL timing through the delegate CC; and
 - a TA value updating unit to update a TA value of the corresponding UL timing group based on the obtained TA value.

’372 Patent at 35:14–35 (emphasis added). The parties dispute whether the “uplink timing group configuring unit” and “delegate CC setting unit” are means-plus function terms. If they are, the

parties dispute whether the specification provides sufficient corresponding structure to avoid holding the limitations indefinite.

- B. “a uplink timing group configuring unit to configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs” (’372 Patent, Claim 8)**

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning (not governed by 35 U.S.C. § 112 ¶ 6)	Means-plus-function claim limitation under 35 U.S.C. § 112 ¶ 6 Function: configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs Structure: None (Indefinite)

OnePlus says this is a means-plus-function term and the term has no definite meaning for the name of a structure. Dkt. No. 55 at 18. Moreover, says OnePlus, the surrounding language is purely functional. OnePlus presumes the functions are “carried out by software that is programmed in the ‘unit’ in a specific way to accomplish the functions.” *Id.* at 19. “But ‘unit’ in this context is nothing more than a nonce term for software/hardware that performs a specified function.” *Id.* (citing *Fintiv, Inc. v. PayPal Holdings, Inc.*, 134 F.4th 1377 (Fed. Cir. 2025)); *see also* OnePlus’s Notice of Supplemental Authority, Dkt. No. 67 (citing *Optis Cellular Tech., LLC v. Apple Inc.*, No. 2022-1904, 2022-1925, 139 F.4th 1363 (Fed. Cir. 2025)).

Asserting this is not a means-plus-function term, Pantech asserts a skilled artisan would

understand from the “configuration” language that the specification shows the unit is a processor. Dkt. No. 50 at 14. And even if this is a means-plus-function term, the specification informs a POSITA that the unit is a processor. Dkt. No. 62 at 8.

Resolving the dispute requires deciding whether the term recites “sufficiently definite structure or else recites function without reciting structure for performing that function.” *Williamson*, 792 at F.3d at 1349; *see also Personalized Media Commc’ns, LLC*, 161 F.3d at 704 (noting § 112 ¶ 6 does not apply when the claim includes “sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term ‘means.’” (quotation marks and citation omitted)). “[S]tructure can be recited in various ways, including [by using] ‘a claim term with a structural definition that is either provided in the specification or generally known in the art,’ or a description of the claim limitation’s operation and ‘how the function is achieved in the context of the invention.’” *Dyfan*, 28 F.4th at 1366 (quoting *Apple Inc.*, 757 F.3d at 1299).

Here, the claim recites structure in the form of the algorithm. The point of the “uplink timing group configured unit” is, unsurprisingly, “to configure a uplink (UL) timing group.” The claim then recites *how* to perform that configuration—by grouping together CCs that meet any one of several conditions. Thus, the claim itself explains how to perform the “configuring.”

After completion of the briefing, OnePlus cited *Optis Cellular Tech., LLC v. Apple Inc.*, 139 F.4th 1363 (Fed. Cir. 2025), a recent Federal Circuit decision reversing this Court’s construction of “selecting unit” as not governed by § 112 ¶ 6. The claim at issue recited “a selecting unit configured to randomly select a sequence from a plurality of sequences contained in one group of a plurality of groups.” *Optis Cellular Tech., LLC v. Apple Inc.*, Dkt. No. 67-1 at 29. At the hearing, OnePlus focused on the appellate court’s statement that “the word ‘unit’ does not sufficiently

connote structure and is similar to other terms that we have held to be nonce terms similar to ‘means’ and invoke § 112 ¶ 6.” *Id.* at 31. But OnePlus ignored the court’s recognition that “claim language that further defines a generic term may add structure sufficient to avoid invoking § 112 ¶ 6.” *Id.* That kind of language is present here in the form of the conditions for when CCs can be configured into a group. Thus, *Optis* is distinguishable.

In the end, the Court agrees with Pantech that this is not a means-plus-function term and construes this phrase as “a processor programmed to configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs.”⁷

⁷ Even if the Court were to conclude this is a means-plus-function term, it would not hold the term indefinite. The recited function is “configur[ing] a[n] uplink (UL) timing group.” The rest of the claim language just sets forth the conditions for that configuration. Although OnePlus suggests that the specification doesn’t clearly link the function to either the UE or the base station, Hr’g Tr., Dkt. No. 81 at 43:13–23, that’s not the right question. Instead, the question is whether that function is clearly linked to some structure *within* the UE or the base station that performs the recited function. Here, a skilled artisan reading the specification would understand the structure to be the algorithm set forth in the claims as well as in the specification, which must be implemented on a processor of some sort. *See* ’372 Patent at 9:12–62.

- C. “a delegate CC setting unit to set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC” (’372 Patent, Claim 8)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning (not governed by 35 U.S.C. § 112(6)/(f))	Means-plus-function claim limitation under 35 U.S.C. § 112 ¶6/(f) Function: set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC Structure: None (Indefinite)

This is a similar dispute based on the same reasoning. In essence, the “unit” sets one of the CCs in the group as the delegate for timing purposes. The rest of the claim language sets forth the algorithm for doing so. The Court holds this is not a means-plus-function term and construes the phrase as “a processor programmed to set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC.”⁸

⁸ Here, too, even if the Court were to conclude this is a means-plus-function term, it would not hold the term indefinite. The recited function is “set[ting] a CC.” Not only does the claim recite how to make the decision about which CC will be the delegate, so does the specification. *See* ’372 Patent at 10:8–18.

IX. THE DISPUTED TERMS FROM U.S. PATENT 10,764,803

A. The '803 Patent

The '803 Patent “relate[s] to an enhanced uplink (EU) operation during a soft handover,” '803 Patent at 1:24–25, which is when a wireless transmit/receive unit (WTRU) is connected to two or more Node-Bs at the same time and on the same frequency, *id.* at 1:34–39. This might happen at or near the boundary of two nodes. In soft handover, all Node-Bs serving the WTRU process the received data, which the system then routes to a radio network controller (RNC). *Id.* at 1:42–49. Systems use soft handover to ensure communication without interruption while the WTRU is roving around a plurality of cells. *Id.* at 1:40–41.

The parties' disputes relate to Claim 1, which recites:

1. A wireless transmit/receive unit (WTRU) comprising:
 - a transceiver; and
 - a processor; and
 - wherein the transceiver and the processor are configured to cause the WTRU to, while a **primary cell** is associated with a **wireless network node** and **one or more non-primary cells** are associated with the **wireless network node**:
 - receive configuration information for the primary cell and the one or more non-primary cells;
 - receive a message on the primary cell, the received message including an indication of at least one of the **one or more non-primary cells** from which the WTRU is to receive a **downlink shared channel transmission**; and
 - in response to the received message, receive and process the **downlink shared channel transmission** from the indicated at least one of the **one or more non-primary cells**.

'803 Patent at 10:38–56 (emphasis added). Generally, the parties dispute whether this claim should be limited to networks with Node-Bs, which provide the connection between UEs under the 3G

standard. The parties also dispute whether “downlink shared channel transmission” is limited to a transmission made during handover.

B. “wireless network node” (’803 Patent, Claim 1)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	“NodeB”

This dispute is like the dispute about “uplink resources.” OnePlus argues this term should not be construed to “refer to later-arising versions of 3GPP.” Dkt. No. 55 at 28. For support, OnePlus cites the patent’s reference to a Node-B in Figure 9. *Id.* (citing ’803 Patent at 9:27–28). OnePlus accuses Pantech of “ignore[ing] the fundamental tenet of claim construction that the meaning of the term must be interpreted as of the effective filing date.” *Id.*

Pantech’s position is more persuasive. The question is not whether 4G existed at the time, but whether the scope of “wireless network node” has the same meaning now as it did when the application was filed. Here, OnePlus does not show the term “wireless network node” is limited to a Node-B. At most, OnePlus shows a Node-B was the only type of “wireless network node” at the time of invention. That, however, is not enough to say other types of “wireless network nodes” might not later be developed. Accordingly, the Court rejects OnePlus’s construction and will give this term a “plain and ordinary meaning” construction.

C. “primary cell” (’803 Patent, Claims 1, 5, 6); “one or more non-primary cells” (’803 Patent, Claim 1)

Term	Pantech’s Construction	OnePlus’s Construction
“primary cell”	Plain and ordinary meaning	“a cell from a group of cells associated with the NodeB designated as a primary cell”

“one or more non-primary cells”	Plain and ordinary meaning	“one or more cells from the group of cells associated with the NodeB designated as one or more nonprimary cells”
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For the same reasons discussed *supra* with respect to “wireless network node,” the Court rejects OnePlus’s constructions for these terms and will give them “plain and ordinary meaning” constructions.

D. “downlink shared channel transmission” (’803 Patent, Claim 1)

Pantech’s Construction	OnePlus’s Construction
Plain and ordinary meaning	“downlink shared channel transmission during a hand over

The sole dispute is whether this term should be limited to a hand-over situation. OnePlus points to the patent’s statement that “the present invention is related to an enhanced uplink (EU) operation during a soft handover.” Dkt. No. 55 at 29 (quoting ’803 Patent at 1:24–25). It also says the only disclosure relating to a “message” on any one of the downlink shared channels occurs during a handover. Even the title states “Enhanced Uplink Operation in Soft Handover.” (emphasis added). Citing *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295 (Fed. Cir. 1999), OnePlus argues that, because the specification relates to handover, the claims must be construed in that context. Dkt. No. 55 at 30.

The Court disagrees. The term has an ordinary meaning in the art, which is “a transmission in a downlink shared channel.” *Toro* is distinguishable in that the court was addressing a close question in a particular context. *See Toro Co. v. White Consol. Indus.*, 199 F.3d 1295, 1300 (Fed. Cir. 1999) (“[D]ictionaries provide general definitions, rarely in sufficient detail to resolve close questions in particular contexts.”). Indeed, the court recognized “[i]t is axiomatic that terms in a claim must be given their ordinary meaning unless it is apparent that the inventor used them

differently in the patent.” *Id.* (citing *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387 (Fed. Cir. 1992)). Accordingly, the Court construes this term as “a transmission in a downlink shared channel.”

X. CONCLUSION

Disputed Term	The Court’s Construction
“time period” (’824 Patent, Claims 1)	“an amount of time”
“a subframe number corresponding to the time point is obtained” (’824 Patent, Claim 7)	“the processor obtains a subframe corresponding to the time point”
“uplink resources” (’838 Patent, Claims 1–4)	Plain and ordinary meaning
“master base station (master eNB, MeNB)” (’283 Patent, Claims 1–3)	“master eNB”
“secondary base station” (secondary eNB, SeNB)” (’283 Patent, Claim 1)	“secondary eNB”
“macro base station” (’573 Patent, Claim 8)	“macro eNB”
“small base station” (’573 Patent, Claim 8)	“small eNB”
“the mapping process including a muting for zero power transmission” (’251 Patent, Claim 12)	“the data including a muting for zero power transmission”

<p>“a uplink timing group configuring unit to configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs” (’372 Patent, Claim 8)</p>	<p>“a processor programmed to configure a uplink (UL) timing group including at least one of component carriers (CCs) having a difference in center frequencies within a threshold range, CCs having the same beamforming scheme, CCs having the same timing advance (TA) value, and CCs having the same reference downlink (DL) CC to be used for obtaining a TA value, from among a plurality of CCs”</p>
<p>“a delegate CC setting unit to set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC” (’372 Patent, Claim 8)</p>	<p>“a processor programmed to set a CC satisfying at least one of a CC having a lowest center frequency value, a CC having a center frequency value that is closest to a mean value, a CC having a highest center frequency, a CC having a broadest frequency band, a CC in which a radio link monitoring (RLM) is defined, in the configured UL timing group as a delegate CC”</p>
<p>“wireless network node” (’803 Patent, Claim 1)</p>	<p>Plain and ordinary meaning</p>
<p>“primary cell” (’803 Patent, Claims 1, 5, 6)</p>	<p>Plain and ordinary meaning</p>
<p>“one or more non-primary cells” (’803 Patent, Claim 1)</p>	<p>Plain and ordinary meaning</p>
<p>“downlink shared channel transmission” (’803 Patent, Claim 1)</p>	<p>“a transmission in a downlink shared channel”</p>

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.

SIGNED this the 30th day of July, 2025.



J. Boone Baxter
UNITED STATES MAGISTRATE JUDGE