

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

G+ COMMUNICATIONS, LLC,

Plaintiff,

v.

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

Defendants.

Civil Action No. 2:22-CV-78

JURY TRIAL DEMANDED

THE SAMSUNG DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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1.	Group, MERRIAM-WEBSTER.COM, https://www.merriamwebster.com/dictionary/group (last visited Feb. 3, 2023)
2.	Certified Translation of PCTCN2016-082087
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4.	Excerpt from U.S. Patent No. 10,448,430 File History
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I. INTRODUCTION

Defendants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung”), respectfully submits this Opening Claim Construction and ask the Court to adopt its constructions for the reasons set forth below.

II. DISPUTED CLAIM TERMS

A. U.S. Patent No. 8,761,776

1. “offset-based reselection principle” (claims 1-3)

Samsung’s Proposed Construction	G+’s Proposed Construction
“ $R_s = Q_{meas,s} + Q_{hysts}$, $R_n = Q_{meas,n} - Q_{offset}$, wherein s stands for a serving cell, n stands for a neighbouring cell, $Q_{meas,s}$ stands for a measured level of a serving cell, $Q_{meas,n}$ stands for a measured level of a neighbouring cell, Q_{hysts} stands for the hysteresis of a serving cell, and Q_{offset} stands for a level offset of a neighbouring cell. After the calculation is completed, the terminal will rank all R values. The one ranked first is the best cell, the terminal will select the best cell when performing reselection.”	“using Q_{offset} as a variable for reselection”

The claims of the ’776 patent require, among other limitations, the use of an “offset-based cell reselection principle.” ’776 patent at 7:15-16. This phrase is not a term of art that a person of ordinary skill in the art (“POSITA”)¹ would readily recognize, and the claims themselves provide no additional context that would help a POSITA understand the term’s meaning. Min Decl., ¶¶59-60. The specification does, however, provide **an express definition** in the background of the invention for a known “method to perform intra-frequency cell reselection”—namely Samsung’s proffered construction—and makes clear that this reselection method is “called an offset-based cell reselection method.” ’776 patent at 1:47-64; *see also Vitronics Corp. v. Conceptronic, Inc.*,

¹ POSITA definitions for all patents-in-suit are provided in declarations supporting Samsung’s claim construction proposals. *See* Min Decl. (Dkt. 98-3), ¶20 (’776 patent), ¶21 (’130 patent); Bims Decl. (Dkt. 98-2), ¶22 (’430 patent); Wicker Decl. (Dkt. 98-4), ¶34 (’881 and ’443 patent).

90 F.3d 1576, 1582 (Fed.Cir.1996) (“The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.”). The patent goes on to refer to this same definition in describing the purported invention, noting that the “the offset-based cell reselection principle **has been described in details in the background**² of the present invention, so it will not be described here again.” See ’776 patent at 4:64-67, 6:35-38. Thus, a POSITA would understand that the recited “offset-based cell reselection method” refers to the definition provided in the specification as stated in Samsung’s construction. Min Decl., ¶64.

G+ argues that there is no “clear indication that the applicants intended to disclaim all other offset-based cell reselection methods.” Dkt. 98 at 2. But G+ and its expert provide no examples of alternative methodologies for performing “offset-based cell reselection,” supporting the conclusion that a POSITA would not understand the meaning of this term and would have to rely on disclosures in the specification. See generally *id.* at 2-3; Akl Decl. (Dkt. 98-1), ¶¶38-42.

2. “same-priority cells” (claims 1-3)

Samsung’s Proposed Construction	G+’s Proposed Construction
“cells assigned a same cell priority”	Plain and Ordinary meaning

The ’776 patent teaches the consideration of two different types of priority in cell reselection: 1) the priority of the frequencies the cells operate on; and 2) the priority of the cells themselves. See ’776 patent at 3:5-12; Min Decl., ¶¶51-52. The intrinsic record casts the latter as a central consideration to the purported invention, and focuses on setting certain cells to a “same priority” even if the group of cells operate across multiple frequencies. Min Decl., ¶53. Claim 1, for example, recites “**setting the cells** on multiple frequencies with the second priority as **same-priority cells**” and subsequently “selecting a cell as a reselected cell by the terminal from among

² Unless otherwise noted, emphasis added to original.

the same-priority cells.” ’776 patent at 6:65-7:3. *See also id.* at 4:18-26; Fig. 1. In fact, during prosecution, applicants specifically distinguished the purported invention from prior art reselection techniques that relied solely on frequency priority without consideration of cell priority. *See* Dkt. 98-5 at GCOM000891 (distinguishing a prior art Huawei reference that performed reselection based on “the frequency of the cell, rather than the priority of the cell.”). Samsung’s proposal simply clarifies what the intrinsic record requires; namely that to practice the reselection technique of the claimed invention, cells themselves must be assigned a priority in addition to established priorities associated with the frequencies on which the cells operate. Min Decl., ¶¶54-56.

G+ objects to Samsung’s proposal on the basis that it “could cause jury confusion” and that “nothing in the claim language or specification ... requires any ‘assignment’ of cells to ‘a same cell priority.’” Dkt. 98 at 3. To the contrary, as noted above, the patent repeatedly teaches “setting” cells to a same priority. As the term “assigning” is synonymous with “setting,” Samsung’s construction is fully consistent with the intrinsic record, and thus can cause no more confusion to a jury than the language used by applicants in describing their purported invention.

G+ further questions whether there is any distinction between “cell priority” and “frequency priority” and attempts to conflate the two concepts. Dkt. 98 at 4. The file history dispels any question in this regard, however, given that the applicant clarified that “the priority of the frequency of the cell and the priority of the cell are distinct concepts” when attempting to distinguish the aforementioned Huawei reference. Dkt. 98-5 at GCOM000891.

Lastly, G+ asserts that the applicants’ arguments made during prosecution do not disavow the claim scope. Dkt. 98 at 5-6. However, the applicants’ statements reflect a clear and unmistakable disavowal in their attempt to distinguish prior art, where cell reselection was done on the basis of frequency priority alone, and without using the cell priority.

Further, as discussed above, *Huawei's disclosure of "equal priority" relates to the priority of the frequency of the cell, rather than the priority of the cell.* Huawei discloses that "the UE may search and rank all cells of equal or lower priority layer. *Huawei*, page 9/12. **However, the priority of the frequency of the cell and the priority of cell are distinct concepts.** Huawei does not disclose or suggest searching and ranking based on the priority of the cell. In other words, Huawei does not disclose or suggest which cells are considered by the UE as cells of equal priority prior to ranking.

Dkt. 98-5 at GCOM000891.³ See *Speedtrack, Inc. v. Amazon*, 998 F.3d 1373, 1377-81 (Fed. Cir. 2021) (holding that applicant's arguments in the prosecution history distinguishing prior art amounted to "a clear and unmistakable disavowal" that surrendered claim scope).

3. **"wherein the priority of the same-priority cells is equal to the absolute priority of corresponding frequencies" (claims 1-3)**

Samsung's Proposed Construction	G+'s Proposed Construction
Indefinite.	Not Indefinite. Plain and Ordinary meaning

This term is indefinite because a POSITA would not be able to ascertain the scope of this term with reasonable certainty. See, e.g., *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). A POSITA reading the claims and specification would not understand how the priority of a cell relates to priority of the frequency, which are two distinct concepts. Min Decl., ¶68. The claims refer to two distinct concepts: (1) cell priority and (2) frequency priority. As noted above, during prosecution the applicants made clear that "the priority of the frequency of the cell and the priority of the cell are **distinct** concepts." Dkt. 98-5 at GCOM000891. The term at issue, however,

³ G+ attempts to obfuscate this express record by stating that the disavowal was made in the context of explaining that the prior art failed to disclose "which cells are considered by the UE as cells of equal priority," and as such it does not somehow qualify as a disavowal. Dkt. 98 at 5-6. This argument is nonsensical, as the very reason the prior art did not read on the claims according to the applicants was because it disclosed the priority of the frequency (*i.e.*, "equal priority"), and not priority of the cell, which are "distinct concepts."

mixes these two distinct concepts by requiring a comparison of the priority of the cells (*i.e.*, cell priority) with the absolute priority of the frequencies (*i.e.*, frequency priority). The specification simply mirrors the claims and does not explain how those concepts could work together. *See, e.g.* '776 patent at 3:20-21, 3:43-44; 4:59-60, 6:29-30.

G+ argues that the concept of distinct cell priority that is separate from the frequency priority does not exist, and that “both the priority of the “same-priority cells” and the “absolute priority of corresponding frequencies” relate to the priority of frequencies among the cells,” completely ignoring applicant’s statements during prosecution. Dkt. 98 at 6-7. Further, G+ points to the 3GPP standard 38.304, referring to the “cellReselectionPriority” definition. This citation does not, however, resolve the ambiguity in the claim, because this definition does not explain how the absolute priority of a frequency relates to the concept of cell priority. Min Decl., ¶70.

Lastly, because the patent describes a “priority-based reselection method” in the background as a prior art reselection process that the present invention purports to be an improvement over, a POSITA would not understand that the “priority of the same-priority cells” is the absolute priority of the corresponding frequency. Min Decl., ¶71. Thus, a POSITA would understand that a cell priority could not be set to a frequency priority.

4. “first reselection module, used to select cells on multiple frequencies, other than the serving frequency, with a second priority according to a priority-based reselection principle when a terminal performs cell reselection” (claims 2-3)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite. §112(6) governs this claim element. Function: “selecting cells on multiple frequencies, other than the serving frequency, with a second priority according to a priority-based reselection principle when a terminal performs cell reselection” Corresponding structure: none.	Not Indefinite. Governed by 35 U.S.C. §112(6). Function: selects cells on frequencies with higher priority based on the priority of frequencies. Structure: a processor or part of an integrated processor within the terminal operating executable code and comprises a combination of hardware and / or software, and equivalents thereof.

Claims 2 and 3 recite a “first reselection module.” The parties agree that this term is governed by 35 U.S.C. § 112, ¶ 6 and agree on the claimed function.⁴ The parties, however, disagree that the specification discloses sufficient structure for performing the claimed function.

In a means-plus-function claim in which the disclosed structure is a general purpose computer or processor, “if a recited function requires special programming, then the specification must disclose the algorithm that the computer performs to accomplish that function.” *Qualcomm Inc. v. Intel Corp.*, 6 F.4th 1256, 1266 (Fed. Cir. 2021). Here, other than broadly describing that a terminal performs the cell reselection method, ’776 patent at 3:1-4, the specification does not mention any structure that performs the recited function, including any specific circuitry, processor or otherwise. Thus, a POSITA would have found that the specification does not describe or even suggest any piece of hardware or software that selects cells on multiple frequencies according to a priority-based reselection principle. Min Decl., ¶79. As such, G+ cannot and does not contend that the specification discloses any special purpose structure for performing the recited function.

Further, the specification’s disclosure of the first and second reselection modules as possibly “integrated” does not connote structure for the “reselection module.” Min Decl., ¶79. Simply using the term “integrated” does not automatically connote a processor, much less special purpose hardware or software that excuses the specification from having to disclose special programming. The mere presence of “modifiers” and “prefixes” by itself does not connote definiteness for a “first reselection module.” See, e.g., *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015) (“While [it] is correct that the presence of modifiers can change the

⁴ Although G+ previously contested the claimed function, it now conceded to and agreed with Samsung’s proposal. Dkt. 98 at 8 n.3.

meaning of ‘module,’ the presence of these particular terms does not provide any structural significance to the term ‘module’ in this case.”); *Intell. Ventures II LLC v. BITCO Gen. Ins. Corp.*, No. 6:15-cv-59, 2016 WL 125594, at *26-24 (E.D. Tex. Jan. 11, 2016) (“In context of the specification, the ‘encryption/decryption module’ is merely a black box that could be anything” as is thus subject to § 112, ¶ 6, and “indefinite for failure to disclosure structure corresponding to the function ‘to randomly generate a device key seed Sd according to a time interval between two specific operations on the storage device.’”).

The ’776 specification fails to provide an algorithm for performing the recited function. G+ cites to the examples in the ’776 patent at 5:7-60 as algorithms provided by the ’776 patent. But as discussed above, a POSITA would not understand these disclosures to be algorithms because they do not describe how priority-based reselection actually occurs. Min Decl., ¶80. At best these disclosures correspond with two of the three possible situations for the recited function. For instance, the cited portion explains how the first reselection module selects cells when either “cells on multiple frequencies with the second priority that is higher than the first priority” (Example 1), ’776 patent at 5:7-31, or when “cells on multiple frequencies with the second priority that is lower than the first priority” (Example 2). ’776 patent at 5:34-60. The specification does not address the situation in which “a serving cell, and cells on the serving frequency and on one or more frequencies having the same priority with the serving frequency.” The only discussion of this situation merely parrots the claim language. ’776 patent at 3:17-18, 4:40-42. G+ makes no attempt to provide any citation to the specification for this last situation, and neither does Dr. Akl. *See e.g.*, Akl Decl., ¶¶52-58.

5. “second reselection module, used to select a cell as a reselected cell from among the same-priority cells based on a best-cell reselection principle” (claims 2-3)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite. §112(6) governs this claim element. Function: “selecting a cell as a reselected cell from among the same priority cells based on a best-cell reselection principle” Corresponding structure: none.	Not Indefinite. Governed by 35 U.S.C. §112(6). Function: selects a cell as a reselected cell from among the same-priority cells based on a best-cell reselection principle. Structure: a processor or part of an integrated processor within the terminal operating executable code and comprises a combination of hardware and / or software, and equivalents thereof.

Claims 2 and 3 recite a “second reselection module.” The parties agree that this term is governed by 35 U.S.C. § 112, ¶ 6 and agree on the claimed function. However, the parties disagree on whether the specification discloses sufficient structure for performing the claimed function.

G+ argues that the best-cell reselection principle “requires only that the ranking R values are calculated using Qoffset.” Dkt. 98 at 10. However, the best-cell reselection method disclosed in the ’776 patent also requires measuring the radio quality to the candidate cells. ’776 patent at 1:60-65 (“reselection among neighbouring cells lies on not only the radio quality of these cells but also on the value of Qoffset”). A POSITA would look to the specification for guidance of that specialized hardware or software, but would find no description of any such hardware or software. Min Decl., ¶88. The specification does not describe a processor, memory, or the like. Nor does it describe any software, much less an algorithm for performing the function. The closest structural description is that of the first and second reselection modules can “also be integrated.” ’776 patent at 6:7-8. But this description fails to specify what the modules are integrated into, such as hardware or software or a combination thereof. Min Decl., ¶8.

A POSITA would understand that the function of “selecting a cell as a reselected cell from among the same-priority cells based on a best-cell reselection principle” is a specific function and

would require specialized hardware or software. For example, a POSITA would recognize that a best-cell reselection principle requires special programming to measure the signal strength of various cells and compare the measured signal strength based on certain calculations. Furthermore, because best-cell reselection is performed on same-priority cells, a POSITA would recognize that specialized hardware and/or software is needed to identify a single cell from among the same-priority cells for which the best-cell reselection principle is satisfied. Min Decl., ¶189.

G+ argues that by merely stating that a module “may also be integrated” with another undefined module and uses a variable such as Qoffset, that sufficient structure is implied. But this recitation does not convey adequate description for a POSITA to associate the claim with a structure. *See, e.g., Synchronoss, Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358 (Fed. Cir. 2021) (“It is not enough that a [MPF] claim term correspond to a very known way of achieving the claimed function; instead the terms must correspond to ‘adequate’ structure in the specification” to allow a POSITA to associate it as corresponding structure.”).

B. U.S. Patent No. 10,448,430

1. “UE group” (claims 1-18)

Samsung’s Proposed Construction	G+’s Proposed Construction
“a plurality of UEs configured to jointly perform a single random access”	“a set of one or more UE(s)”

Plain reading of the claims supports Samsung’s proposal. Claim 1 recites a UE group containing more than one UEs configured to jointly perform a single random access procedure. ’430 patent at cl. 1 (“sending, by a first User Equipment (UE) in *a UE group*, a preamble ... monitoring, by at least **one of the first UE or a second UE in the UE group**, a Random Access Response”). While it is possible that the second UE may contain the first UE, as “the second UE is all or some UEs in the UE group,” the claim language reflects that the second UE, and thus

the group it is part of, contains a plurality of UEs (“all or some *UEs*”).⁵ *Id.*

The specification likewise supports Samsung’s proposal and tracks with the claim language. “[M]ultiple (**two or more**) UEs form a UE group.” *Id.* at 13:20-21. The ’430 patent seeks to “greatly save[]” resources by engaging in group-based random access where “**a group of UEs** only needs to occupy a PRACH resource . . . in a random access.” *Id.* at 8:52-60; *see also id.* at 11:33-38 (similar), 13:3-8 (similar), 15:34-39 (similar), 29:66-30:8 (similar). Otherwise, the specification mentions the same possibility suggested by the claims – that the second UE in a group may include the first UE, among the plurality of other UEs. *See id.* at 9:36-41 (“The second UE **may be all or some UEs** in the **UE group, i.e., UEs having random access requests**. Therefore, **the second UE may include the first UE.**”); *see also* Bims Decl., ¶¶63-68.

G+’s proposal that a UE group could contain just one UE is inconsistent with the stated purpose of the patent, which involves a group of UEs using a single PRACH resource to perform random access. *See* ’430 patent at 15:34-39 (“**A random access in the related art is independently completed by each UE. However, in the present example, a group of UEs only occupies a PRACH resource . . . in a random access, so that PRACH resources can be greatly saved.**”); *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1323-24 (Fed. Cir. 2008) (“The claims of the patent must be read in light of the specification’s consistent emphasis on [a] fundamental feature of the invention.”); *see also* Bims Decl., ¶¶70-73. Indeed, G+’s *Markman* tutorial explains that the ’430 patent addresses problems “when the bandwidth is strained when multiple devices are overloading the network” and in LTE, “a large number of resources are needed as UE’s are not uniformly

⁵ Extrinsic evidence is also unequivocal that a group requires a plurality of members. Ex. 1 (*Group*, MERRIAM-WEBSTER.COM, <https://www.merriamwebster.com/dictionary/group> (last visited Feb. 3, 2023)); Bims Decl., ¶69.

accessed in large systems.” Dkt. No. 96 (G+ Markman Tutorial) at 19, 21; ’430 patent at 30:3-8; *see also* Dkt. No. 96 (G+ Markman Tutorial) at 22-23 (relying on an embodiment with multiple UEs in FIG. 1 that teaches a “first UE in a group of **UEs**” where the “first UE **and/or a second UE in the group of UEs** then monitors a Random Access Response”).

G+’s only argument referencing the patent specification focuses on the embodiment where “the second UE may include the first UE” and asserts that a UE group may contain just one UE. Dkt. 98 at 12. As explained above, this embodiment only suggests that the second UE may contain, among other UEs, the first UE, and otherwise does not indicate that there could be just one UE in a group. G+ also extends the same argument to the language of claim 1, which is unavailing for the same reason. The specification explains that the first UE is the group leader because “group members report [] to a **first UE (hereinafter referred to as a group leader)** . . . [which] may be **representative of the whole group of UEs to initiate a random access.**” ’430 patent at 22:19-35.

2. “pre-set UE number” (claims 1-18)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite	Not Indefinite Plain and Ordinary meaning

A POSITA would not understand the scope of this term with reasonable certainty. Claim 1 refers to three possible contents of message 3—“[1] a number of UEs having random access requests in the UE group or [2] a number of UEs contained in the UE group or [3] a pre-set UE number.” The first two options expressly refer to a quantity (“a number of UEs . . .”) but the language is unclear whether “pre-set UE number” pertains to a quantity (*e.g.*, a pre-set number of UEs in the UE group), an identifier (*e.g.*, a pre-set number specific to a certain UE or the UE group), or something else (*e.g.*, priority, order). *Id.*; *see also* Bims Decl., ¶¶74-76. Other claim terms referring to identifiers expressly state so, unlike here. ’430 patent at cl. 3 (reciting “group

Identifier (ID))), cl. 13 (reciting “a group ID”), cl. 5 (reciting “Random Access Radio Network Temporary Identity (RA-RNTI)” and “Temporary Cell Radio Network Temporary Identity (TC-RNTI))). The claims fail to clarify the scope of the term aside from implying “pre-set UE number” is not an identifier. *See* Bims Decl., ¶¶74-80.

The specification provides no clarification about the scope of the term at issue, simply reciting it in the same manner as the claims. ’430 patent at 4:41-49, 7:24-27, 7:29-32, 11:20-22, 11:23-27, 27:17-21. While the specification mentions a “UE Identifier” and a “group ID” in various embodiments of group-based random access, it does not tie any of those embodiments to the claimed “pre-set UE number.” *Id.* at 2:2-7, 13:20-23, 13:49-50. If anything, the patent suggests that the “pre-set UE number” is not an identifier, as it refers to any identifiers expressly, *see, e.g., id.* at 4:16-23 (“group ID of the UE group,” “ID of the first UE,” “ID of a preamble”), but is otherwise devoid of any guidance about how to interpret this term. *See* Bims Decl., ¶¶81-84.

Extrinsic evidence suggests that the uncertainty about the meaning of “pre-set UE number” is the result of translation error. Certified translations of the foreign applications underlying the ’430 patent reflect that the original language of the term at issue referred to a quantity of UEs, namely “a preset number of UEs.” Ex. 2 at cl. 21 (SAM-GC00073496) (“wherein the message 3 includes the number of UEs with random access requests in the UE group or the number of UEs included in the UE group or **a preset number of UEs**”), Ex. 3 at cl. 21 (SAM-GC00073817) (“wherein the message 3 includes the number of UEs with random access requests in the UE group or the number of UEs included in the UE group or **a preset number of UEs**”).⁶ Contradicting the intrinsic and extrinsic record, G+ interprets “pre-set UE number” in the infringement contentions

⁶ During prosecution, claim 1 was amended to include the “wherein the message 3 ...” clause of claim 21 of the foreign priority application. *See* Ex. 4 at GCOM000978-82.

as an identifier.⁷ See Ex. 5 at 29 (“Upon information and belief, the C-RNTI MAC CE field [that signifies an identifier] comprises a pre-set UE number.”); see also Bims Decl., ¶¶85-86.

G+ argues that Samsung’s is “confusing breadth [of the term] with indefiniteness.” Dkt. 98 at 12. To the contrary, G+ confuses the nature of the dispute. Here, breadth is not at issue; rather it is that the language at issue can be read to mean different things—quantity, identifier, or something else (*e.g.*, priority, order). *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1371 (Fed. Cir. 2015) (holding that “a claim is indefinite if its language might mean several different things and no informed and confident choice is available among the contending definitions” (internal quotations marks omitted)).

3. “monitoring unit configured to: monitor a Random Access Response (RAR) corresponding to the preamble and sent by eNB” (claim 18)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite. §112(f) governs this claim element. Function: “monitor a Random Access Response (RAR) corresponding to the preamble and sent by the eNB” Corresponding structure: none.	Not Indefinite. Governed by 35 U.S.C. §112(6). Function: monitor an RAR corresponding to the preamble and sent by the eNB. Structure: a processor or part of an integrated processor within the terminal operating executable code and comprises a combination of hardware and / or software, and equivalents thereof.

The parties agree means-plus-function applies and do not materially contest the claimed function but dispute whether the specification discloses sufficient corresponding structure.

The claimed function is unconventional and a POSITA would not know how to implement it without additional guidance. See Bims Decl., ¶¶114-117. Group-based monitoring of the RAR (whether performed by one UE on behalf of the entire group, distributed across a plurality of UEs, or even all UEs, in the group) as part of group-based random access is unique to the ’430 patent

⁷ As discussed above, intrinsic record suggests that the term at issue *is not* an identifier.

such that it requires a specific explanation about how to accomplish it. *Id.*, ¶117. The specification merely repeats the function without providing a series of steps for a POSITA to understand how to accomplish it with reasonable certainty. *See* '430 patent at 15:9 (“all UEs monitor an RAR”), 17:36-38 (“all or some intra-group UEs ... monitor the RAR”), 22:43-47 (“an eNB learns of that the UE is the group leader, and sends an RAR”), 28:36-40 (“the first UE and/or a second UE in the UE group are/is configured to: monitor an RAR”).

The specification fails to provide sufficient corresponding structure for the claimed function. *See* Bims Decl., ¶¶118-121. It lacks structural discussion of the “monitor[ing]” function beyond referencing other “units” within the “monitoring unit,” which is insufficient. *See* '430 patent at 6:14-16 (“first descrambling subunit, a first receiving subunit and an allocation subunit”), 6:32-34 (“a determination subunit, a second descrambling subunit and a second receiving subunit”). Though suggesting embodiments may be implemented via computer program in a processor or an integrated circuit, *see id.* at 28:46-29:62, the specification fails to disclose any computer algorithm or an integrated circuit design that could perform the claimed function, and group-based monitoring by one or more UEs. *See* Bims Decl., ¶¶118-121.

G+ cites disclosure that doesn't explain how (or provide an algorithm for how) UEs in the group determine or know to determine whether the monitoring is performed by a UE on behalf of other UEs in the UE group, by a plurality of UEs in the UE group, or by all UEs in the group.⁸ The background explains “the UE is unable to know whether other UEs make a random access by using the same resource” and the specification never provides a sufficient algorithm for a POSITA to know with reasonable certainty how to implement the claimed function in group-based random

⁸ Dkt. No. 98 at 14-15. The disclosure in the specification G+ argues is an algorithm does not comport with their proposed construction, which is generic and not specific to a certain algorithm.

access. '430 patent at 1:64-65. Thus, this term is indefinite.

4. “sending unit ... configured to: send a preamble to an evolved Node B (eNB) over a time-frequency resource comprising a time domain resource and a frequency domain resource; ... and ... further configured to: send a message 3 according to a Uplink (UL) grant allocated to the UE, wherein the message 3 comprises a number of UEs having a random access requests in a UE group or a number of UEs contained in the UE group or a preset UE number” (claim 18)

Samsung's Proposed Construction	G+'s Proposed Construction
Indefinite. §112(f) governs this claim element. Function: “send a preamble to an evolved Node B (eNB) over a time frequency resource, comprising a time domain resource and a frequency domain resource; and further send a message 3, comprising a number of UEs having random access requests in a UE group or a number of UEs contained in the UE group or a pre-set UE number, according to a Uplink (UL) grant allocated to the UE” Corresponding structure: none.	Not Indefinite. Governed by 35 U.S.C. §112(6). Function: send a preamble to an eNB over a time-frequency resource, the time-frequency resource including a time domain resource and a frequency domain resource, and send a message 3 according to a Uplink (UL) grant allocated to the UE, the message 3 comprising a number of UEs having random access requests in a UE group or a number of UEs contained in the UE group or a pre-set UE number. Structure: a processor or part of an integrated processor within the terminal operating executable code and comprises a combination of hardware and / or software, and equivalents thereof.

The parties agree means-plus-function applies and do not materially contest the claimed function but dispute whether the specification discloses sufficient corresponding structure.

The claimed function is unconventional and a POSITA would not know how to implement it without additional guidance or instructions. *See* Bims Decl., ¶¶94-100. The claimed function requires the UE to send UE group information to the eNB, which means that before sending a preamble and message 3, a UE performing random access on behalf of the UE group needs to know UE group information. *See* '430 patent at 22:34-35 (“a group leader may be representative of the whole group of UEs to initiate a random access”), 22:41-52 (discussing sending a preamble by a group leader), 22:48-50 (same for message 3). A POSITA would not understand how this could be accomplished without specific guidance, as group-based random access was not defined

in cellular standard specifications. *Id.* at 1:64-65 (“the UE is unable to know whether other UEs make a random access by using the same resource”); *see* Bims Decl., ¶¶94-100.

The specification fails to provide sufficient corresponding structure for the claimed function. *See* Bims Decl., ¶¶101-106. The specification does not provide any structural discussion pertaining to the “sending[ing]” function, and instead resorts to reciting functional descriptions that track with the express language of the claimed function. *See, e.g.*, ’430 patent at 6:8 (“send a preamble ...”), 6:45 (“send a message 3 ...”), 7:20-21, 4:41-44. Further, while the specification suggests that the embodiments may be implemented via computer program in a processor or an integrated circuit, *see id.* at 28:46-29:62, it fails to disclose any computer program algorithm or an integrated circuit design capable of performing the claimed function, much less provide specifics on how such function may be implemented for sending a preamble and message 3 on behalf of a UE group. *See* Bims ¶¶101-106. A POSITA would recognize that sending of a preamble and message 3 at least requires specialized software, which rules out any discussions of a general processor as sufficient, and that the protocol or algorithm should incorporate handling of information about the UE group, which is not provided in the specification. Bims Decl., ¶¶101-106. In some embodiments, the ’430 patent vaguely refers to communication via “physical signal signaling or high-layer signaling,” but provides no algorithm to guide a POSITA with reasonable certainty. ’430 patent at 16:13-22.

G+ cites no algorithm for the unconventional sending in group-based random access because the specification does not provide one. G+ argues the communicating group leader may be pre-set, fixed, or “determined as a UE in the UE group in accordance with a certain rule” and “intra-group UEs may interact mutually by using a short-distance communication manner such as Wireless Fidelity (WIFI) and D2D.” *Id.* at 22:12-31. This does not provide any steps as to how

the UEs, moving in and out of cells, would know to form a group and communicate or would know how to form a group and communicate. The background of the specification teaches “the UE is unable to know whether other UEs make a random access by using the same resource.” *Id.* at 1:64-65. Those disclosures mean that UEs are “unable to know” random access communication in relation to one another. *Id.* There are no series of steps for a POSITA to follow and understand with reasonable certainty because there are no steps for how specialized UE groups are formed and communicate. Thus, this term is indefinite.

C. U.S. Patent No. 9,184,881

1. “a number value of the downlink sub-frame” (claims 1-8, 11-14)

Samsung’s Proposed Construction	G+’s Proposed Construction
A number identifying how many downlink sub-frames are used to transmit the data	Plain and ordinary meaning

The term at issue warrants a clarification, specifically in so far as the usage of the word “value.” See Wicker Decl., ¶55. Samsung’s proposal comports with the language of claim 1 where the term appears, and other intrinsic evidence. The relevant portion of claim 1 recites:

1. ... the eNodeB carries, in downlink control information, **a number value of the downlink sub-frame** corresponding to the confirmation information which is fed back by one uplink sub-frame, and transmits data on a plurality of continuous downlink sub-frames after the sub-frame carrying the downlink control information, wherein the number of the downlink sub-frames which transmit the data is equal to a number of the downlink sub-frames corresponding to the confirmation information fed back by the one uplink sub-frame

’881 patent at cl. 1. Here, the eNodeB sends downlink control information containing a number identifying how many downlink sub-frames are used to transmit the data (*i.e.*, a number value of the downlink sub-frame), followed by transmitting data on continuous downlink sub-frames. Wicker Decl., ¶57. As such, the user equipment would know how many downlink sub-frames it is supposed to receive and feeds back confirmation information in response to those downlink sub-

frames on one uplink sub-frame. *Id.*

The intrinsic evidence supports this understanding. A preferred embodiment discusses sending “a signaling of the number of the downlink sub-frames” representing “k continuous downlink sub-frames . . . [that] are sent with the data” and which need to be confirmed via an uplink transmission. ’881 patent at 7:24-40. The same concept is illustrated in Fig. 3, where the eNodeB sends control information (“the signaling information of DCI format 0”) on downlink sub-frame 6, that represents “the number of downlink subframes carrying data” sent to the user equipment, which is 4 downlink sub-frames, followed by data transmissions in the continuous downlink sub-frames 6, 7, 8, and 9, to be confirmed via uplink sub-frame 13. *Id.* at Fig. 3, 9:58-10:19. The prosecution history supports Samsung’s proposal as well. *See* Dkt. 98-6 at GCOM000222 (“[T]he eNodeB can inform the user equipment how many downlink sub-frames are used to transmit the data (i.e., a number value of the downlink sub-frame)”).

G+ labels Samsung’s proposal as “too narrow” because, according to G+, the term at issue means not only “the number of downlink subframes in the set, but also [the] identi[ty] [of] specific downlink sub-frames” that carry data. Dkt. 98 at 19. But claim 1 does not assign the identity of data sub-frames to “a number value” and instead requires “transmitting data on a plurality of continuous downlink sub-frames after the sub-frame carrying the downlink control information.” Thus, to confirm the receipt, the user equipment should only know how many data sub-frames it is supposed to get—which is conveyed by “a number value of the downlink sub-frame.” G+’s reference to the description in the specification corresponding to Fig. 3, *see* Dkt. 98 at 19 (citing ’881 patent at 9:66-10:11) is of no avail. This embodiment comports with claim 1 by illustrating a situation where the control information carries “the number of downlink sub-frames carrying data,” and there is no suggestion whatsoever that it also carries the identity of data sub-frames.

Lastly, G+ relies on the applicant's argument in the prosecution history noted above, which defines the term at issue consistent with Samsung's proposal, and notes that "the eNodeB can inform the user equipment . . . the position of the downlink sub-frames which transmit data (i.e. continuous downlink sub-frames after the sub-frame carrying the downlink control information)." Contrary to G+'s contention, this language does not mean that the identity of downlink data sub-frames are conveyed expressly as part of "the number of downlink sub-frames carrying data."

2. "the downlink sub-frame" / "this downlink sub-frame" (claims 1-14)

Samsung's Proposed Construction	G+'s Proposed Construction
Indefinite	Not indefinite; plain and ordinary meaning

A POSITA would not be able to ascertain the scope of the "downlink sub-frame" terms with reasonable certainty, for it is unclear if they refer to the same or different "downlink sub-frames." Wicker Decl., ¶69. Claims 1 and 9 that recite the terms at issue are reproduced below.

1. A method for feeding back confirmation information on a physical uplink shared channel, which is used for enabling a user equipment to feed back to an eNodeB whether data of a downlink sub-frame is correctly received in a situation that a number of the downlink sub-frames is greater than a number of uplink sub-frames in a time division duplex system, wherein the method comprises:

the eNodeB carries, in downlink control information, a number value of the downlink sub-frame corresponding to the confirmation information which is fed back by one uplink sub-frame, and transmits data on a plurality of continuous downlink sub-frames after the sub-frame carrying the downlink control information, wherein the number of the downlink sub-frames which transmit the data is equal to a number of the downlink sub-frames corresponding to the confirmation information fed back by the one uplink sub-frame;

after the user equipment receives the downlink sub-frame which carries the downlink control information, the data is received from the downlink sub-frame which transmits the data after this downlink sub-frame, and the confirmation information of receiving the data is fed back together with uplink data to the eNodeB through a physical uplink shared channel through an uplink sub-frame;

wherein, in a situation that the user equipment feeds back a plurality of groups of the confirmation information, an amount of the confirmation information fed back in each group is equal to a maximum number of codeword streams in this downlink sub-frame, and respective confirmation information in each group corresponds to the confirmation information of the codeword stream of a corresponding downlink sub-frame; in the situation that the number of codeword streams of the downlink sub-frames is smaller than the maximum number of the codeword streams of the downlink sub-frame, the user equipment feeds back the confirmation information of the number of the maximum codeword streams, wherein confirmation information without a corresponding codeword stream is set as a predefined fixed value; when the user equipment fails to detect the physical downlink control channel corresponding to the transmitted data in the sub-frame which transmits the data, the user equipment feeds back the negative acknowledgement message as the confirmation information of each codeword stream in a group corresponding to this downlink sub-frame.

9. A method for feeding back confirmation information on a physical uplink shared channel, wherein, when the confirmation information is fed back together with uplink data on the physical uplink shared channel, in a situation that a user equipment fails to detect a physical downlink control channel corresponding to transmitted data in a sub-frame transmitting data, the user equipment feeds back a negative acknowledgement message as confirmation information of this downlink sub-frame; in a situation that the user equipment detects the physical downlink control channel corresponding to the transmitted data in the sub-frame transmitting the data, the user equipment analyzes data in this downlink sub-frame, and feeds back an acknowledgement message as the confirmation information in a situation that the analysis is successful, otherwise, the negative acknowledgement message is fed back as the confirmation information;

wherein

in a situation that the user equipment feeds back a plurality of groups of the confirmation information, an amount of the confirmation information fed back in each group is equal to a maximum number of codeword streams in this downlink sub-frame, and respective confirmation information in each group corresponds to the confirmation information of the codeword stream of a corresponding downlink sub-frame;

in a situation that the number of the codeword streams of the downlink sub-frame is smaller than the maximum number of the codeword streams of the downlink sub-frame, the user equipment feeds back the confirmation information of the maximum number of the codeword streams, wherein confirmation information without a corresponding codeword stream is set as a predefined fixed value;

when the user equipment fails to detect the physical downlink control channel corresponding to the transmitted data in the sub-frame which transmits the data, the user equipment feeds back the negative acknowledgement message as the confirmation information of each codeword stream in a group corresponding to this downlink sub-frame.

'881 patent at cls. 1, 9 (highlights added).

The claims contain multiple recitations of “the downlink sub-frame”/“the downlink sub-frames” (yellow) and “this downlink sub-frame” (blue), and it is unclear if they refer to the same or different “downlink sub-frame[s].” Wicker Decl., ¶70. Claims 1 and 9 recite multiple possible antecedent bases for the terms at issue: “a downlink sub-frame” (green) and “a corresponding downlink sub-frame” (gray) in claim 1; “a sub-frame transmitting data” (green) and “a corresponding downlink sub-frame” (gray) in claim 9. Other potentially related limitations add to

the confusion about the claim scope: claim 1 includes “a plurality of continuous downlink sub-frames” (orange), “the sub-frame carrying the downlink control information” (purple), “the downlink sub-frames which transmit the data” (pink), and “the sub-frame which transmits the data” (red); and claim 9 recites “the sub-frame transmitting the data” (pink) and “the sub-frame which transmits the data” (red). *Id.* at ¶¶71-72. The patent specification simply recites the terms at issue and does not provide any clarity. *Id.* at ¶73.

G+’s attempts to explain the meaning of the terms at issue further illustrate the ambiguity in the claim language. G+ alleges that there are three different types of “the downlink sub-frame[s]” in claim 1, *see* Dkt. 98 at 20, but fails to explain how any of them relate to the one and only recitation of “a downlink sub-frame” that appears in the claim 1 preamble. G+ then argues that “[a] POSITA would [] understand that ‘an amount of the confirmation information fed back in each group’ provides antecedent basis for [a particular recitation of] ‘this downlink sub-frame’” in claims 1 and 9. Dkt. 98 at 21. This is nonsensical, and G+ provides no legal authority to support the notion that one claim term can be the antecedent basis for another completely different claim term. Lastly, G+ fails to account for and explain all instances of the “downlink sub-frame” terms in the claims, which further underscores the incomprehensibility of the claim language.⁹

3. “an amount of the confirmation information” (claims 1-14)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite	Not indefinite; plain and ordinary meaning

⁹ G+ fails to account for and classify the following instances of the terms at issue: “in a situation that a number of ***the downlink sub-frames*** is greater than a number of uplink sub-frames” (cl. 1); “in the situation that the number of codeword streams of ***the downlink sub-frames*** is smaller than the maximum number of the codeword streams of ***the downlink sub-frame***” (cl. 1); and “in a situation that the number of the codeword streams of ***the downlink sub-frame*** is smaller than the maximum number of the codeword streams of ***the downlink sub-frame***” (cl. 9).

The term “an amount of the confirmation information” in independent claims 1 and 9 creates confusion as to the scope of these claims, which a POSITA would not be able to ascertain with reasonable certainty. Wicker Decl., ¶75. The relevant portions of claims 1 and 9 recite:

... in a situation that the user equipment feeds back a plurality of groups of the confirmation information, ***an amount of the confirmation information*** fed back in each group is equal to a maximum number of codeword streams in this downlink sub-frame, and respective confirmation information in each group corresponds to the confirmation information of the codeword stream of a corresponding downlink sub-frame....

’881 patent, cls. 1, 9. A POSITA would not understand if the recited “amount” refers to volume and/or size of confirmation information (*e.g.*, number of bits or bytes), or the number of distinct confirmation information (or pieces of confirmation information). Wicker Decl., ¶77.¹⁰ The specification recites the term at issue verbatim or otherwise parrots the claim language, without clarifying the meaning. *See* ’881 patent at 3:1-24, 4:50-57, 5:45-51, 8:61-9:1. *See also* Wicker Decl., ¶79. The prosecution history is likewise unhelpful, as it tracks the claim language without further explanation. *See* Dkt. 98-6 at GCOM000349-352; Wicker Decl., ¶81-82.

G+, despite having claimed that this term needs no construction, now asserts that it means “the number of pieces of ACK/NACK information.” Dkt. 98 at 22-23. G+ points to an embodiment which discusses a situation that ACK/NACK of *k* downlink sub-frames is fed back by one uplink subframe and “the number of codeword streams of the downlink sub-frame is *m*,’ ‘each group [of ACK/NACK information] corresponds to one downlink sub-frame and includes *m* pieces of the ACK/NACK information,’ and that ‘each piece of the ACK/NACK information in

¹⁰ As Dr. Wicker explained, “the claim language in question is analogous to a sign offering ‘amounts of ice cream’ without specifying exactly what is meant by an ‘amount.’ It could for example, refer to a measurement of the quantity of ice cream, such as ounces or scoops. It could, alternatively, refer to a number of distinct menu items featuring ice cream, such as a number of ice cream cones.” Wicker Decl., ¶78.

the group corresponds to the ACK/NACK information of one codeword stream in the downlink sub-frame corresponding to the group.” (Dkt. 98 at 22 (citing ’881 patent at 9:14-23.) But these disclosures are directed to a certain embodiment—*i.e.*, “a situation that ACK/NACK of *k* downlink sub-frames is fed back by one uplink subframe and the number of codeword streams of the downlink sub-frame is *m*” (’881 patent at 9:14-17)—and cannot be used to save the claims from indefiniteness. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1373-1374 (Fed. Cir. 2014) (“Had the phrase been cast as a definition instead of as an example . . . then it would help provide the clarity that the specification lacks. But as the specification is written, . . . a [POSITA] would not understand the ‘e.g.’ phrase to constitute an exclusive definition of [the term at issue].”).

G+ ignores other references to the specification cited by Dr. Wicker as relating to prior art and not relating to the invention. Dkt. 98 at 22. G+ provides no legal authority as to why the background of the invention section of a patent should be given less weight than the rest of the specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (“Importantly, the person of ordinary skill in the art is deemed to read the claim term . . . in the context of the entire patent, including the specification.”). If anything, the background section is the most important as it reflects what a POSITA would have known about the state of the prior art. *See V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (intrinsic record “usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of the invention”).

D. U.S. Patent No. 10,736,130

1. “a processor arranged to . . .” (claim 20)

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite	Not Indefinite
§ 112(6) governs this claim element	Not governed by 112(f)
Function: to execute the stored processor-executable instructions to perform steps of: sending K predefined sequences	Plain and Ordinary meaning Plaintiff objects to this as

on M transmission symbols in a Transmission Time Interval (TTI) to send B bit uplink control information, wherein M is a positive integer, K is an integer, $1 \leq K \leq 2^B$, B is an integer greater than or equal to 1, on each of the M transmission symbols, one of the K predefined sequences is sent, and each of the K predefined sequences has a length of N and is mapped to N subcarriers of the corresponding transmission symbols corresponding to the each of the K predefined sequences, wherein $N=2n$ with n being a positive integer Corresponding structure: none	Defendants identified nearly an entire claim and not a claim term for construction
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The parties dispute whether this term should be subject to means-plus-function treatment. Claim 20 is drafted in a format consistent with traditional means-plus-function claim limitations, by reciting high-level functions without corresponding structure. The inquiry is not whether the word “processor” has an understood definition, but rather whether the claims and specification “detail the objectives and operations of the ‘processor configured to . . .’ term[] in a way that connotes structure sufficient to avoid the application of § 112, ¶ 6.” *St. Isidore Research, LLC v. Comerica Inc.*, No. 2:15-cv-1390-JRG-RSP, 2016 WL 4988246, at *14 (E.D. Tex. Sept. 19, 2016).

Claim 20 recites function without definite structure. The mere disclosure of a general-purpose processor is not sufficient structure. *See In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1315-16 (Fed. Cir. 2011) (finding general-purpose computer insufficient structure for claims “involv[ing] specific functions that would need to be implemented by programming a general purpose computer to convert it into a special purpose computer capable of performing those specified functions”). To hold otherwise would be contrary to Federal Circuit precedent because it would permit functional claiming of software by reciting that a “processor” is “configured” or “operable” to perform those functions. *See Williamson*, 792 F.3d at 1349 (warning against “proliferation of functional claiming untethered to § 112, para. 6.”).

SyncPoint, on which G+ relies, is distinguishable. Whereas the Court found that the claims in *SyncPoint* describe a processor’s interaction with structural elements, claim 20 here does not

recite such interactions. *SyncPoint Imaging, LLC v. Nintendo of Am. Inc.*, 2016 U.S. Dist. LEXIS 677 (E.D. Tex. Jan. 5, 2016). Claim 24 of U.S. Patent No. 6,275,214 in *SyncPoint*, recites:

[A] processor ***in communication with the camera*** for processing the image to ***detect position of the optical cursor*** and at least one property of the optical cursor and for converting the position and at least one property to corresponding commands ***to control the computer and move an internal cursor to a position*** corresponding to the optical cursor while the optical cursor remains within the output ***displayed on the screen***.

As shown, claim 24 in *SyncPoint* includes recitation of structure and the processors interaction with this structural elements, such as the processor being in communication with the camera.

In contrast, claim 20 of the '130 patent recites high-level functions that the “processor” is “arranged to” perform. Claim 20 itself recites nothing more about the “processor” itself, and the remainder focuses on the functional aspects of the instructions executed by the processor:

“a processor arranged to ***execute the stored processor-executable instructions to perform steps*** of: sending K predefined sequences on M transmission symbols in a Transmission Time Interval (TTI) to send B-bit uplink control information, wherein M is a positive integer, K is an integer, $1 < K < 2^B$, B is an integer greater than or equal to 1, on each of the M transmission symbols, one of the K predefined sequences is sent, and each of the K predefined sequences has a length of N and is mapped to N subcarriers of the corresponding transmission symbols corresponding to the each of the K predefined sequences, wherein $N = 2n$ with n being a positive integer”

'130 patent at cl. 20. This is confirmed by the limited disclosures of “processor” in the specification, which repeatedly makes clear that the processor executes the program instructions. *Id.* at 2:25-27 (“[T]he processor executes the following processing by invoking the program or the instruction”); 2:39-41 (“[T]he computer program executes the above method for uplink control signal transmission when being invoked by a processor”); 26:15-17 (same).

Further, claim 20 includes functions that would not and cannot be performed by a general purpose processor. For example, claim 20 recites the “***sending*** of K predefined sequences on M

transmission symbols.” As Figure 13 indicates, the embodiments include a transmission unit, which is “arranged to send the K predefined sequences.” ’130 patent at 2:13-14. Critically, claim 20 does not recite a “transmission unit,” much less describes the interaction between a processor and any such “transmission unit.” Indeed, the specification references a “processor” as a generic component with a memory. ’130 patent at Fig. 14, 22:53-23:4. The patentee, however, is obligated to delineate the structure with which to configure the processor because sufficiently definite structure is required to avoid application of § 112, ¶ 6.

Once the claim is construed under § 112(6), a two-step process takes over. First, the court identifies the claimed function. *Williamson*, 792 F.3d at 1351. Second, the court determines, “what structure, if any, disclosed in the specification corresponds to the claimed function.” *Id.* As to step one, because the disputed “processor” term invokes § 112(6), construing the term first requires identifying the claimed function(s). Samsung has identified the function that are subject to 112(6), each of which are enumerated in the parties’ Joint Claim Construction Statement. Dkt. 85 at 14-15. G+, in contrast, chose not to identify any claimed functions.

Step two requires identifying corresponding structure to perform the function. For “processor,” the specification does not disclose adequate structure, let alone clearly link it to the claimed functions. Claims 20 recites a “processor arranged to” execute instructions to “sending K predefined sequences on M transmission symbols” But the specification does not disclose or link any corresponding structure to one of the claimed functions. As discussed, the specification discloses that the processor executes program instructions. ’130 patent at 2:25-27; 2:39-41; 26:15-17. Figure 14 further shows the processor as being connected to memory. None of these disclosures without an algorithm for performing the claimed functions represents structure clearly linked to the functions. *Augme Techs., Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1338 (Fed. Cir. 2014)

(“[D]isclosing a black box that performs the recited function is not a sufficient explanation of the algorithm required to render the means-plus-function term definite.”).

Critically, G+ omits proposed structure from its claim construction disclosures and in its expert’s declarations. Thus, should the Court agree that § 112(6) applies, G+ has conceded that claim 20 is indefinite.

E. U.S. Patent No. 10,595,443

1. “blind detection” (claims 8-9, 17-18)

Samsung’s Proposed Construction	G+’s Proposed Construction
“decoding on the premise of assuming k as a specific value and correspondingly assuming M as a specific value”	Plain and ordinary meaning

The inventors acted as their own lexicographer for the term “blind detection” and provided a specific definition for this term, one that was not understood in the art. While there is no dispute that “blind detection” techniques were known in telecommunication industry prior to the ’443 patent, such techniques would not work with the specific purported invention of the ’443 patent, and specifically the limitations “M bits of HARQ information” and “k erroneous transmission blocks” recited in the claims. *See* Wicker Decl., ¶¶85, 88-89; Dkt. 98 at 26; *see also* ’443 patent, cl. 8. As such, and to make “blind detection” work for their patent, the inventors coined their own definition for “blind detection” along with a detailed algorithm. Wicker Decl., ¶86.

After receiving the HARQ information from the node 1, the node 2 performs decoding through a blind detection. The blind detection refers to that the node 2 performs decoding on the premise of assuming k as a specific value and correspondingly assuming M as a specific value. If the node 1 adds a cyclic redundancy check (CRC) code to the HARQ information, then the node 2 may judge whether the assumption concerning k and M is feasible by checking through CRC after decoding. If feasible, then the HARQ information as obtained after decoding is just the one as expected; otherwise, repeating the above steps by assuming k as other values until the node 2 is correctly decoded.

’443 patent at 11:10-21; *see also* 13:7-18. The specification describes “blind detection” as the

sequential assumption of values of k and M followed by attempts at computing the CRC, and when the CRC is found to be a match with what was received, it is assumed that the corresponding values of k and M are correct. See Wicker Decl., ¶89. Thus, this specification clearly sets forth the definition of “blind detection” and reflects the inventors’ intent to redefine this term. See *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

G+ does not explain how the concept of “blind detection” as understood in the art could possibly work with the specific claim limitations. Instead, G+ asserts that Samsung’s proposal “could render the claims indefinite,” as it is not detailed enough to capture the algorithm provided in the specification. Dkt. 98 at 27. Thus, G+ appears not only to depart from its original proposal that this term needs no construction, but also to espouse Samsung’s argument that the patentees acted as their own lexicographer, albeit in a more detailed fashion than proposed by Samsung.¹¹

2. **“a length type of M2 including a first length type or a second length type; the first length type indicating a value of M2 being predefined, and the second length type indicating a value of M2 being determined based on k” (claims 1-20)**

Samsung’s Proposed Construction	G+’s Proposed Construction
Indefinite	Not indefinite; plain and ordinary meaning

A POSITA would not be able to ascertain, with reasonable certainty, if the term at issue requires presence of both length types, or in the alternative, just one length type. See Wicker Decl., ¶92. The independent claims, where this term appears, use the conjunction “or” between the first and second length types: “a length type of M2 including **a first length type or a second length type**; the first length type indicating a value of M2 being predefined, and the second length type

¹¹ G+’s argument that “blind detection” should incorporate portions of the specification that cover repeating the detection process “by assuming k again as other values until achieving correctly decoding,” Dkt. 98 at 27, further supports that the patentees acted as their own lexicographer.

indicating a value of M2 being determined based on k.” ’443 patent, cls. 1, 8, 10, and 17. This language suggests that claims require the presence of *either* a first length type *or* a second length type, but not both. *See, e.g., Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1331 (Fed. Cir. 2001) (“[T]here is no basis whatsoever for believing that [the patent owner] intended its usage of ‘or’ somehow to embrace ‘and.’”); *Schumer v. Lab. Computer Sys.*, 308 F.3d 1304, 1311 (Fed. Cir. 2002) (“We have consistently interpreted the word ‘or’ to mean that the items in the sequence are alternatives to each other.”). The specification, however, provides disclosures suggesting that the claimed “**or**” between the first and second length types could actually be an “**or**” or an “**and**,” depending on different scenarios. *See* ’443 patent at 3:14-18; Wicker Decl., ¶94. Thus, it is unclear if the claims require the use the first length type or the second length type, but not both, or alternatively the use of both length types. *Id.* at ¶95.

G+ arguments are self-contradictory. G+ contends that “every single embodiment and figure disclosed in the ’443 Patent contemplates the ability to either generate or interpret ‘M bits of HARQ’ with either a first length type or a second length type.” Dkt. 98 at 29 (emphasis in the original). This suggests that the *claims do not require the ability to generate or interpret both length types*. G+ then contends the opposite by pointing to an embodiment in the specification in which, when applied to claims, *requires an ability to generate or interpret both length types*.¹²

¹² G+’s self-contradiction is unsurprising. G+’s infringement contentions only identify evidence that would allegedly be “the first length type indicating a value of M2 being predefined,” suggesting that the second length type is not required. *See, e.g.,* Ex. 6 at 23 (“Upon information and belief, the CRC attachment to the HARQ-ACK bits is performed by setting the length of CRC bits L to predefined 8 bits.”). In contrast, in IPR2022-01598, G+ took an opposite position and attempted to distinguish prior art by asserting that “[t]he ’443 Patent’s specification makes clear that *both formats are required*.” Ex. 7 at 27. While this inconsistency was identified in Dr. Wicker’s declaration, G+ did not attempt to address this issue and instead simply contended that “[n]othing in either Patent Owner’s Preliminary Response in IPR2022-01598 or in G+’s Preliminary Infringement Contentions contradicts” G+’s brief. Dkt. 98 at 29.

G+'s remaining points further obfuscate the issue. G+ asserts that "the length type" may be configured by "radio resource control (RRC) signaling," "a downlink control information (DCI)," or otherwise "determined by the first node; predefined; and determined by the first node based on k." Dkt. 98 at 28 (citing '443 patent at 6:45-50). But the configuration or determination of the length type are not relevant to the main issue here, namely if the claims require both length types or just one. G+'s arguments about threshold values fail for the same reason.

III. CONCLUSION

For the reasons recited above, Samsung requests that the Court adopt Samsung's proposed claim constructions.

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Respectfully submitted,

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***SAMSUNG ELECTRONICS CO., LTD. AND
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CERTIFICATE OF SERVICE

This is to certify that on April 26, 2023, a true and correct copy of the foregoing instrument was delivered to all counsel of record through the court electronic system.

/s/ Melissa R. Smith

Melissa R. Smith