

**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.

Case No. 2:22-cv-00078-JRG

JURY TRIAL DEMANDED

**PLAINTIFF G+ COMMUNICATIONS, LLC'S
OPENING CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Pursuant to the Court’s Docket Control Order (Dkt. 34), Plaintiff G+ Communications, LLC (“G+”) submits this Opening Claim Construction Brief regarding construction of the disputed claim terms of U.S. Patent Nos. 8,761,776 (“’776 Patent”); U.S. Patent No. 10,448,430 (“’430 Patent”); U.S. Patent No. 9,184,881 (“’881 Patent”); U.S. Patent No. 10,736,130 (the “’130 Patent”); and U.S. Patent No. 10,594,443 (“’443 Patent”) (collectively, “Patents-in-Suit”).¹

II. DEFINITION OF THE “PERSON OF ORDINARY SKILL IN THE ART”

A person having ordinary skill in the art at the time the earliest applications for the Patents-in-Suit were filed (“POSITA”) would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and three to four years of experience in the design and development of wireless communications systems. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

III. DISPUTED CLAIM CONSTRUCTIONS

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

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

G+’s Proposed Construction	Defendants’ Proposed Construction
“using Qoffset as a variable for reselection”	“ $R_s = Q_{meas,s} + Q_{hysts}$, $R_n = Q_{meas,n} - Q_{offset}$, 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

¹ The parties’ agreed constructions are set forth in Appendix A to the Joint Claim Construction and Prehearing Statement. Dkt. 85.

	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.”
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The term “offset-based cell reselection principle” should be construed as “using Qoffset as a variable for reselection.” Defendants’ proposed construction unnecessarily imports limitations from the background section of the specification into the claim elements and should thus be rejected. There is simply no evidence to support a clear disavowal of claim scope that would narrow the claim as Defendants suggest. The Court should adopt G+’s proposed construction because it is consistent with the intrinsic and extrinsic evidence.

A POSITA would understand that Qoffset is a known variable used in the 3GPP standard that specifies the offset between the cells (Exhibit A - Declaration of Dr. Robert Akl (“Akl Decl.”), ¶ 39 (citing Exhibit N, at 27)), which is consistent with the disclosures in the ’776 Patent, such as: “Qoffset stands for a level offset of a neighbouring cell” (’776 Patent, 1:55-57). Indeed, the applicants explained that an offset-based cell reselection method is one in which both the radio quality of neighboring cells and the value of Qoffset are used (’776 Patent, 1:60-65) and provided one example of a technique that includes a calculation followed by a ranking of cells to determine the “best cell” for performing reselection (*id.*, 1:47-58).

Nothing in this example or in the specification as a whole indicates that the applicants intended to limit the term “offset-based cell reselection principle” to anything other than a reselection technique that uses Ooffset as a variable. Nor is the example accompanied by any clear indication that the applicants intended to disclaim all other offset-based cell reselection methods. And, immediately after that example, the applicants clarified that the offset-based reselection principle requires only that the ranking R values are calculated using Qoffset given the “difficulty

of reselection among neighbouring cells.” *Id.*, 1:60-65. This “principle,” requiring only that Qoffset is used as a variable for reselection, is what the applicants referred to in discussing an embodiment of the “present invention.” *Id.*, 4:64-67 (“the offset-based cell reselection principle has been described in detail[] in the background of the present invention”).

The mere fact of a particular embodiment being taught (or even “preferred”) is not sufficient to justify limiting otherwise broad claim scope to the particular embodiment taught. As the Federal Circuit has repeatedly held, “the fact that embodiments (or even every embodiment) in the specification depict a particular arrangement or structure does not require reading that arrangement or structure into the claims.” *Ethicon LLC v. Intuitive Surgical, Inc.*, No. 2020-1528, 2021 WL 3716397, at *4 (Fed. Cir. Aug. 23, 2021). This is especially true because the applicants never indicated or implied that the particular embodiment disclosed in the background section (1:51-58) is the only way in which to perform the offset-based cell reselection recited in the claim.

2. “same-priority cells” (claims 1-3)

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

The phrase “same-priority cells” is an easily understandable term that does not require construction. There is no ambiguity to this term requiring construction, and a POSITA would understand its plain and ordinary meaning in the context of the intrinsic and extrinsic evidence. Akl Decl., ¶ 43 n.2. Despite this, Defendants assert that “same-priority cells” should be construed as “cells assigned a same cell priority.” Defendants’ proposed construction should be rejected because it would cause jury confusion, and nothing in the claim language or specification of the ’776 Patent requires any “assignment” of cells to “a same cell priority.”

According to Defendants' expert, "[a] POSITA reading the claim language would recognize that there are two priorities here at play, one pertaining to the frequency, and another to the cell," and "[t]he priority of the frequency is a priority associated with a frequency, and not the priority of a cell." Ex. C, ¶ 52. He further opines that "[i]t is only after the cells have been selected based on the priorities of the frequencies that the cells themselves are 'same priority cells'—a narrowed field of possible candidates from which the reselected cell is selected." *Id.*, ¶ 54. In other words, Defendants appear to argue that the "same-priority cells" cannot be the "cells on multiple frequencies with the second priority"—even though the claim language specifies they are. '776 Patent, cl. 1 ("setting the cells on multiple frequencies with the second priority as same-priority cells"). Nothing in the claim language or otherwise indicates that the "same-priority cells" are a "narrowed field of possible candidates."

Construing the term "same-priority cells" to mean "cells assigned a same cell priority" as Defendants propose is especially confusing because neither the term "cell priority" nor "frequency priority" is even mentioned in the '776 Patent, and each and every embodiment disclosed in the '776 Patent specifies that the "selection" and "setting" of cells on multiple frequencies with the same priority is accomplished according to the priority-based reselection process—that is, according to the priority of the cell's frequency. *See, e.g.*, '776 Patent, 2:5-57; 3:5-55; 4:18-21; 4:43-47; 5:13-24; 5:37-55; 6:12-21. For example, step S102 of Figure 1 indicates that "same-priority cells" are "cells on multiple frequencies with the same priority." '776 Patent, Fig. 1; 4:45-47; 6:63-64. Just like the claims recite, the selection of candidate same-priority cells is done according to a priority-based reselection process. *Id.*, 4:48-51; 6:65-67; *see also id.*, 3:45-47 ("Wherein the first reselection module may be specifically used to select cells on frequencies with higher priority based on the priority of frequencies."); 4:48-51 ("[S]electing same-priority cells

according to the priority-based reselection principle refers to that: the terminal may first select the cells on the frequencies with higher priority according to the priority of frequencies.”). While the applicants could have chosen to combine in claim 1 both the “selecting” and “setting” steps as Defendants’ expert opines (Ex. C, ¶ 55), they did not; nor were they required to do so.² And even if they did, the combined steps would not render Defendants’ proposed construction correct or less confusing. This is so because whether combined into one step or not, nothing in claims 1-3 (or more broadly in the ’776 Patent) requires any “assign[ment]” of cells to “a same cell priority.” *See Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1367 (Fed.Cir.2012) (“It is the claims that define the metes and bounds of the Patentee's invention. The Patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the Patentee explicitly redefines the term or disavows its full scope.” (citation omitted)).

Nor does the prosecution history limit the scope of the claims. Defendants’ expert relies on a Response to an August 5, 2013, Final Office Action in which the applicants explained that the disclosure of “equal priority” in the prior art reference at issue (i.e., Huawei) relates to the priority of the frequency, rather than the priority of the cell. Ex. C, ¶ 55 (citing Ex. E, at 460). But in that response, the applicants distinguished the Huawei reference because, unlike claims 1-3, Huawei “does not disclose or suggest which cells are considered by the UE as cells of equal priority prior to ranking.” Ex. E at 460. In contrast, claims 1-3 select the candidate “same-priority cells” according to a priority-based reselection process and then rank those candidates according to an offset-based cell reselection principle. ’776 Patent, cls. 1-3. The Notice of Allowance confirmed that Huawei (and the other prior art of record) fails to disclose the priority-based reselection

² The steps are indeed combined in claim 2 (and thus dependent claim 3). ’776 Patent, 7:21-8:2.

limitations recited in claims 1-3. Ex. E at 486. Any comments regarding “cell priority” and “frequency priority” by the applicants during prosecution were made in the context of explaining that Huawei “does not disclose or suggest which cells are considered by the UE as cells of equal priority prior to ranking” (Ex. E, at 460), and thus do not amount to disavowal of claim scope. *See Baxalta Inc. v. Genentech, Inc.*, 972 F.3d 1341, 1348 (Fed. Cir. 2020) (“in order for prosecution disclaimer to attach, the disavowal must be both clear and unmistakable”).

For at least these reasons, and because a POSITA would understand with reasonable certainty the meaning of the term “same-priority cells,” the Court should adopt G+’s proposed construction. *See K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the Patentee.”).

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

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

There is no ambiguity in the term “wherein the priority of the same-priority cells is equal to the absolute priority of corresponding frequencies” as a POSITA would understand its plain and ordinary meaning in the context of the asserted claims and both the intrinsic and extrinsic evidence. As discussed above, nothing in the prosecution history or elsewhere supports Defendants’ position that the “same-priority cells” are anything other than the candidate cells identified on multiple frequencies with the second priority according to a priority-based reselection process. There is thus no “mix[ing] together of two distinct concepts” as Defendants’ expert opines (Ex. C, ¶ 68), because both the priority of the “same-priority cells” and the “absolute priority of corresponding frequencies” relate to the priority of frequencies among the cells. Akl Decl., ¶¶ 48 - 49 (“A

POSITA would understand with reasonable certainty that the same-priority cells on multiple frequencies have a priority of their corresponding frequencies.”); *id.*, ¶ 49 (“A POSITA would also understand that the absolute priority is the priority of the frequency among the cells available for reselection that are given a second priority.”). This is consistent with the 3GPP standard that defines “cellReselectionPriority” as follows:

cellReselectionPriority

This specifies the absolute priority for NR frequency or E-UTRAN frequency.

Ex. N at 26; *see also* Akl Decl., ¶ 50.

This evidence confirms the term “wherein the priority of the same-priority cells is equal to the absolute priority of corresponding frequencies” is not indefinite, as a POSITA would understand its plain and ordinary meaning with reasonable certainty.

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)**

G+'s Proposed Construction	Defendants' Proposed Construction
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.	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.

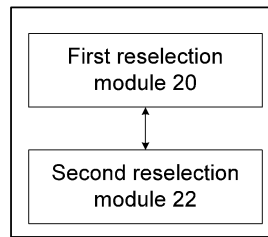
5. **“second reselection module, used to select a cell as a reselected cell from among the same-priority cells based on a best-cell reselection principle” (claims 2-3)**

G+'s Proposed Construction	Defendants' Proposed Construction
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.	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.

The parties do not dispute that the terms relating to the “first reselection module” and “second selection module” are governed by 35 U.S.C. 112, ¶ 6. Nor do they dispute the functions of those modules.³ The sole dispute concerns whether the specification discloses sufficient structure for performing the described functions. As shown below, it does. In addition to the structure provided by the modules themselves, the applicants disclosed step-by-step algorithms and well-known techniques for performing the recited functions. *See Medical Instr. & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211–12 (Fed. Cir. 2013) (indicating that when assessing a disclosed algorithm’s adequacy, the question is “whether the [] algorithm, from the viewpoint of a person of ordinary skill, is sufficient to define the structure and make the bounds of the claim understandable”). The Court should thus reject Defendants’ indefiniteness argument.

First, a POSITA would understand that “module” in the context of the ’776 Patent refers to a processor or part of an integrated processor within the terminal. Akl Decl., ¶ 52. Figure 2 of the ’776 Patent shows a block diagram of the terminal with first and second reselection modules:

³ G+ agrees with the function set forth by Defendants for the term “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.”



As shown in this Patent figure, “the terminal comprises a first reselection module 20 and a second reselection module 22. In practical application, the first reselection module 20 and the second reselection module 22 may also be integrated, but in this embodiment, they are disposed separately in order to more clearly explain the technical solution of the present invention.” *Id.*, 6:3–11. That the first and second reselection module “may also be integrated” provides the context that the module(s) are referring to a processor or processors used to perform the functions described in the ’776 Patent. Akl Decl., ¶ 54. The use of the word “module” is a known structure that is consistent with how companies that design and manufacture integrated processors describe them. Akl Decl., ¶ 56. For example, Qualcomm, one of the integrated processors that is used in the accused Samsung 5G smart phones refers to its processor as a “module”:

Qualcomm® Snapdragon™ System-in-Package is a custom-built, integrated module that supports design flexibility and robust smartphone features with low power consumption.

Ex. P at 2; Akl Decl., ¶ 57.

Second, the specification discloses well-known techniques and step-by-step algorithms for performing the claimed functions on the “first reselection module” and “second reselection module,” which are part of the terminal shown in Figure 2 above. ’776 Patent, 5:7-60. For instance, in a first example, the ’776 Patent explains that “[f]requencies F_{a1} and F_{a2} are high-priority frequencies with the same priority. C_{a1_1} and C_{a1_2} are cells on a frequency F_{a1}, and C_{a2_1}

is a cell on a frequency F_{a2} . Currently, the terminal resides on a frequency F_{b1} , and the priority of F_{b1} is lower than the priority of F_{a1} and F_{a2} . C_{b1_1} is the cell where the terminal resides.”

Id., 5:7-12. The ’776 Patent further discloses that the terminal periodically measures different frequency cells C_{a1_1} , C_{a1_2} and C_{a2_1} , and:

If within a time period $T_{reselectionE}$ — UTRAN, different-frequency cells satisfy $SC_{a1_1} - 1, F_{a1} > ThreshF_{a1,high}$, $SC_{a1_2} - 2, F_{a1} > ThreshF_{a1,high}$ and $SC_{a2_1} - 1, F_{a2} > ThreshF_{a2,high}$, in other words, three cells with higher priority simultaneously meet the reselection conditions (the reselection conditions: $S_{nonServingCell,x}$ of a cell on a measured frequency is greater than $Thresh_{x,high}$ within $T_{reselectionRAT}$), then the terminal needs to reselect and transfer to one of the three cells by the priority-based reselection method, wherein C_{a1_1} , C_{a1_2} and C_{a2_1} are same-priority cells.

Id., 5:12-24. This algorithm provides a step-by-step process for the first selection module 20 to “select cells on multiple frequencies with the same priority according to a priority-based reselection principle when a terminal performs cell reselection.” *Id.*, 6:12-16.

The second reselection module 22 is “used to select a cell as a reselected cell based on a best-cell reselection principle from among the same-priority cells selected by the first reselection module 20.” *Id.*, 6:31-34. And the best-cell reselection principle is the offset-based reselection principle (*id.*, 6:35-38), which the applicants clarified requires only that the ranking R values are calculated using Q_{offset} (’776 Patent, 1:60-65). Q_{offset} was a well-known variable used in the 3GPP standard for cell reselection at the time of the invention. *Akl Decl.*, ¶ 39. Thus, a POSITA would understand that selecting a cell as a reselected cell from among the same priority cells based on a best-cell reselection principle (i.e., an offset-based cell reselection principle) discloses sufficient structure with various implementation choices. *Ibormeith IP, LLC v. Mercedes-Benz USA, LLC*, 732 F.3d 1376, 1379 (Fed. Cir. 2013) (“For a claim to be definite, a recited algorithm, or other type of structure for a section 112(f) claim limitation, need not be so particularized as to

eliminate the need for any implementation choices by a skilled artisan; but it must be sufficiently defined to render the bounds of the claim—declared by section 112(f) to cover the particular structure and its equivalents—understandable by the implementer.”).

Moreover, the applicants also disclosed a step-by-step example of an offset-based cell reselection calculation ($R_s = Q_{meas,s} + Q_{hysts}$, $R_n = Q_{meas,n} - Q_{offset}$) and explained how R values were ranked to determine the best cell when performing reselection. ’776 Patent, 1:51-60. And the applicants provided a second step-by-step algorithm for performing the priority-based and offset-based reselection principles on the “first reselection module” and the “second reselection module” in the case of reselection to frequencies with lower priority. *Id.*, 5:37-60. The ’776 Patent further provides an additional step-by-step algorithm for performing priority-based reselection and offset-based cell reselection among cells on the same frequency. *Id.*, at 2:5-47.

The well-known structures (i.e., an integrated module and the use of Q_{offset} in the 3GPP standard), together or alone with these step-by-step algorithms, provide sufficient constraints on how the “first reselection module” and the “second reselection module” perform the recited functions. Defendants therefore cannot show, by clear and convincing evidence or otherwise, that the claim terms are indefinite. *See, e.g., Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (noting that a Patentee may “express [an] algorithm in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure” (internal citation omitted)).

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

1. “UE group” (claims 1-18)

G+’s Proposed Construction	Defendants’ Proposed Construction
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“a set of one or more UE(s)”	“a plurality of UEs configured to jointly perform a single random access”
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Claim 1 of the '430 Patent refers to “a first User Equipment (UE) in a UE group,” and specifies actions that may be taken “by at least one of the first UE or a second UE in the UE group.” To account for the foreseeable circumstance that a single UE may need to initiate a random access according to the teachings of the '430 Patent, the claims and written description plainly leave open that possibility. For example, in the beginning of the detailed description, the Patent states:

Herein, the first UE may be at least one UE in the UE group, and the first UE can be representative of the UE group. 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.

'430 Patent 9:36-40. This description is consistent with other similar descriptions in the Patent. *E.g.*, '430 Patent, 11:59-64 (“It is important to note that the first UE in S201 or S202 may be at least one UE in the UE group, and the first UE can be representative of the UE group. . . . Therefore, the second UE may include the first UE.”). Claim 1 itself also provides that “the first UE is at least one UE in the UE group, and the second UE is all or some of UEs in the UE group.” Given that the second UE may include the first UE, it is possible for a single UE to represent itself as the UE group according to the claim. Thus, “UE group” should be construed as “a set of one or more UE(s).”

Samsung’s declarant disagrees based on the recitation of a second UE, the term “group,” and certain dependent claims. *See* Ex. B, ¶¶ 57-68. Samsung also attempts to import limitations from the specification in attempting to limit the claim to the situation in which “a plurality of UEs [are] configured to jointly perform a single random access.” Dkt. 85, App’x B, ref. 6. What Samsung and its declarant miss, however, is that claim 1 encompasses the situation where there is a group of multiple UEs, while also allowing for the foreseeable circumstance in which only one

UE is part of the group. And even if some dependent claims require multiple UEs, that would not limit broader claim 1 to that circumstance. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the Patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). In addition, the Patentee is entitled to be its own lexicographer. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc). Here, in specifying that the first UE may be at least one UE in the UE group, the first UE can be representative of the UE group, the second UE may be all or some UEs in the UE group, and that the second UE may include the first UE, the Patentee has intentionally included the possibility that a UE group may be one UE. Therefore, “UE group” should be interpreted as “a set of one or more UEs.”

2. “pre-set UE number” (claims 1-18)

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

According to claim 1 of the ’430 Patent, message 3 may include “a pre-set UE number.” G+ proposes that this term be interpreted according to its plain and ordinary meaning. Samsung, on the other hand, asserts that the claim term is indefinite and refuses to propose a construction. Dkt. 89, App’x B, ref. 7. Based on the testimony of Samsung’s declarant, *see* Ex. B, ¶¶ 76-84, it appears Samsung takes the position that because a “pre-set UE number” may include a quantity of UEs (e.g., a pre-set number of UEs) or an identifier (e.g., a pre-set number associated with a UE), one of ordinary skill in the art would not understand the scope of the claims. Samsung, however, is confusing breadth with indefiniteness. “Breadth is not indefiniteness.” *In re Gardner*, 427 F.2d

786, 788 (CCPA 1970). Nothing presented by Samsung’s declarants would indicate that one of skill in the art would not be informed of the scope of the claims of the ’430 Patent with reasonable certainty. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014) (explaining the “reasonable certainty” standard).

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

G+’s Proposed Construction	Defendants’ Proposed Construction
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.	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.

As recited in claim 18, the function of the monitoring unit is to “monitor a Random Access Response (RAR) corresponding to the preamble and sent by the eNB.” In accordance with the written description in the ’430 Patent, and as recognized by Samsung’s declarant, *see* Ex. B, ¶ 120, the monitoring unit would be implemented as hardware and software using a processor. *See* ’430 Patent, 28:45-29:10. The ’430 Patent says that, in an embodiment, monitoring includes (1) descrambling a Cyclic Redundancy Check (CRC) of Downlink Control Information (DCI) for scheduling the RAR according to a pre-set Random Access Radio Network Temporary Identity (RA-RNTI) or an RA-RNTI corresponding to the preamble, and (2) receiving the RAR. *See* ’430 Patent, 2:62-3:4. The Patent similarly teaches that the monitoring operation can include:

The first UE and/or the second UE determine(s) corresponding RA-RNTIs according to respective IDs and/or preambles, descramble(s) a CRC of DCI for scheduling the RAR according to the corresponding RA-RNTIs, and receive(s)

corresponding RARs, the RAR including a TC-RNTI and/or a UL grant allocated to the first UE or second UE.

'430 Patent, 3:22-28; *see also id.* at 6:6-44, 9:33-10:11, 15:10-33, 24:15-23, 25:55-26:29. These are two examples of algorithms, or sequences of steps, taught in the '430 Patent for performing the function of monitoring an RAR as claimed in claim 18. In light of this disclosure, Samsung's position that the Patent includes no corresponding structure is inexplicable. *See* Dkt. 89, App'x B, ref. 8. The claim is limited to the algorithms taught in the Patent and their equivalents.

The Bims Declaration suggests Samsung will take the position that the functionality of the claimed monitoring unit is unconventional, such that a POSITA would not know without further guidance how to implement the function. Ex. B, ¶ 117. Dr. Bims also asserts that the specification fails to disclose any algorithm implemented by computer program instructions. *Id.* ¶ 120. But Dr. Bims' assertions attempt to impose too high a burden on the Patentee, essentially requiring that source code be disclosed.

"[T]he sufficiency of the disclosure of algorithmic structure must be judged in light of what one of ordinary skill in the art would understand the disclosure to impart." *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1337 (Fed. Cir. 2008) (citing *Intel Corp. v. VIA Techs.*, 319 F.3d 1357, 1367 (Fed. Cir. 2003) (knowledge of a person of ordinary skill in the art can be used to make clear how to implement a disclosed algorithm); *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1379 ("[T]he 'one skilled in the art' analysis should apply in determining whether sufficient structure has been disclosed to support a means-plus-function limitation.")). In this regard, Dr. Akl testifies that one of ordinary skill in the art would understand from the disclosed sequence of steps how to implement the monitoring function, particularly given the context of improvements on LTE systems. Akl Decl. ¶¶ 66-68. And, contrary to Samsung's

position, the '430 Patent describes how to monitor for a group of devices, for example by disclosing (i) that a first UE may monitor as a representative of a group, (ii) that the preamble and/or time domain resource and/or frequency domain resource may be pre-set, and (iii) that a monitoring UE can determine corresponding RA-RNTIs according to respective IDs or preambles and descramble a CRC of DCI for scheduling the RAR according to the corresponding RA-RNTIs. *See, e.g.,* '430 Patent 9:35-50, 10:1-11. One of ordinary skill in the art would understand from this disclosure how to implement the disclosed algorithms, and thus the relevant structure. Akl Decl.

¶ 68.

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 dome 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 pre-set UE number” (claim 18)

G+'s Proposed Construction	Defendants' Proposed Construction
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.	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.

The function of the claimed sending unit is to 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. Per the Patent's description, and as recognized by Samsung's declarant, *see* Ex. B, ¶ 103, the sending unit would be implemented as hardware and software using a processor. *See* '430 Patent, 28:45-29:10.

The '430 Patent describes the sending unit using terms of art that convey to a POSITA how to program the processor to perform the sending function. For example, the recitation that a UE sends a "preamble" to an "eNB" over a "time-frequency resource" and that it sends a "message 3" "according to the UL grant allocated thereto," e.g., '430 Patent 2:44-47, 3:29-33, conveys to one of ordinary skill in the art specific methods of packaging and transmitting the specified information in the context of communication networks conforming to 3GPP technical specifications. Akl Decl. ¶¶67-68. Samsung's declarant does not appear to disagree. *See* Ex. B, ¶ 103 ("The sending of the MSG1 preamble sequence and sending of message 3 are both specified by the protocol of the 3GPP technical specifications"). Samsung's declarant instead suggests that the problem with the disclosure is in not specifying where the UE obtains the information to be included in message 3. *Id.* ("In order to send a preamble sequence on behalf of the UE group, the UE needs special knowledge of which UEs are in the UE group. The UE needs to learn the group information before it sends the message 3 comprising information about the UE group."). Not only is this untrue, but the argument is also immaterial to the scope of claim 18. Claim 18 is not limited to specific methods of obtaining the information to be transmitted in message 3.

Samsung’s declarant states that “UEs are mobile and there is no description of how a UE will know it’s in the UE group in the specification.” *Id.* The ’430 Patent, however, describes that UEs in a group may communicate with one another using short-distance communication such as Wireless Fidelity (Wi-Fi) and that one UE may be the group leader. ’430 Patent 22:12-27. “The group leader may be pre-set, or may be a fixed UE with a certain ID number such as a fixed UE with an ID number 0, or may be determined as a UE in the UE group in accordance with a certain rule.” *Id.* at 22:27-31; *see also id.* at 22:32-39. Thus, contrary to the Bims Declaration, the Patent does describe how a UE knows it’s in the UE group. In addition, claim 18’s sending unit is configured to send a message 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.” The claim does not attempt to limit the manner in which the information to be transmitted is obtained. Thus, Samsung’s apparent issue with how the information is obtained is not relevant to the scope of claim 18 or its proper interpretation. The ’430 Patent therefore provides sufficient structure to perform the claimed function of the sending unit.

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

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

G+’s Proposed Construction	Defendants’ Proposed Construction
Plain and Ordinary meaning	“a number identifying how many downlink sub-frames are used to transmit data”

No construction is necessary for the term “a number value of the downlink sub-frame” because a POSITA would understand its plain and ordinary meaning. Defendants argue that the “choice of words in the claim is unclear” because “it is not clear how the word ‘value’ fits into this phrase.” But Defendants’ proposed construction is inconsistent with the evidence.

While the specification may refer in some instances to “the number of downlink sub-frames,” the claims are not so narrowly limited. Figure 3 of the ’881 Patent discloses not only the number of downlink subframes in the set, but also identifies which specific downlink sub-frames are included. Akl Decl., ¶ 76. For example, the ’881 Patent discloses, “[a]ssume that the eNodeB sends the data on downlink subframes 6, 7, 8 and 9 to the object UE, the object transmits the uplink data and the ACK/NACK information **of the corresponding downlink sub-frames** on sub-frame 13.” ’881 Patent, 9:66-10:2 (emphasis added). A POSITA would thus understand that the number value(s) may be the numbers in the set {6, 7, 8, 9} and not limited to the size of the set (i.e., 4). Akl Decl., ¶ 76. The ’881 Patent confirms in other places that the “number value of the downlink sub-frame” relates to the specific number value of the downlink sub-frames in the set. *See, e.g.*, ’881 Patent, 10:9-11. (“The object UE detects the information of DCI format 0 on downlink sub-frame 6 and **acquire[s] that there is data being sent on downlink sub-frames 6, 7, 8, and 9. . .**.”) (emphasis added).

Knowing only the number of downlink sub-frames, as Defendants’ expert suggests (Ex. D, ¶ 57), would not enable the eNodeB to inform the UE of the position of the downlink sub-frames carrying the confirmation information. Akl Decl., ¶ X. Nothing in the passage cited by Defendants’ expert changes this. Ex. D., ¶ 58 (citing ’881 Patent, 7:24-40). Immediately above that passage, the Patent specifies that “the eNodeB uses a signaling in the DCI to carry the number of the downlink sub-frames **corresponding to the confirmation information** which is fed back by the one uplink sub-frame.” ’881 Patent, 7:17-20 (emphasis added). Indeed, during prosecution, the applicants distinguished a prior art reference (Gao) because Gao disclosed neither how many downlink sub-frames are used to transmit the data nor “**the position of the downlink sub-frames which transmit data.**” Ex. D, Ex. F at 222.

This evidence confirms that a POSITA would understand the plain and ordinary meaning of “a number value of the downlink sub-frame” and would not restrict the “number value” to Defendants’ proposed “number identifying how many downlink sub-frames are used.”

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

G+’s Proposed Construction	Defendants’ Proposed Construction
Not indefinite. Plain and Ordinary meaning	Indefinite

There is nothing indefinite about the term “the downlink sub-frame” / “this downlink sub-frame” to a POSITA. Defendants’ expert attempts to create confusion where none exists. For example, Dr. Wicker suggests “it is not clear if ‘the downlink sub-frame’ and ‘this downlink sub-frame’ refer to the same ‘downlink sub-frame’ or different ones” in claims 1 and 9. Ex. D, ¶¶ 69-70. But the claim language clearly identifies which “downlink sub-frame” is being referenced. For example, claim 1 distinguishes between “the downlink sub-frame corresponding to the confirmation information,” “the downlink-subframes which transmit the data,” and “the downlink sub-frame which carries the downlink control information.” ’881 Patent, cl. 1.

The references to “this downlink sub-frame” in claims 1 and 9 are also clear and unambiguous. For example, a POSITA would understand that “this downlink sub-frame” recited in claim 1 below refers to the downlink sub-frame which carries the downlink control information:

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;

'881 Patent, 11:22-29; A POSITA would also understand that “an amount of the confirmation information fed back in each group” provides antecedent basis for “this downlink sub-frame” in the claim limitation below:

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;

'881 Patent, 11:30-37; *id.*, 13:2-9 (same); *see also id.*, 9:18-19 (“each group corresponds to one downlink sub-frame”).

The references to “this downlink sub-frame” in claim 9 are also clear and unambiguous. For example, a POSITA would understand that “this downlink sub-frame” referenced below refers to the “sub-frame transmitting data”:

[I]n 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

'881 Patent, 12:55-63; *id.*, 13:18-24 (same).

Because a POSITA would be able to reasonably ascertain the meaning of the term “the downlink sub-frame” / “this downlink sub-frame” when read in the context of the claims and specification, the Court should thus adopt G+'s proposed construction. *See Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001) (explaining a claim is not indefinite if the scope would be “reasonably ascertainable” by a POSITA); *see also Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (“When the meaning of the claim would reasonably

be understood by persons of ordinary skill when read in light of the specification, the claim is not subject to invalidity upon departure from the protocol of ‘antecedent basis.’”).

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

G+’s Proposed Construction	Defendants’ Proposed Construction
Not indefinite. Plain and Ordinary meaning	Indefinite

A POSITA would likewise understand “an amount of the confirmation information” with reasonable certainty. The claims expressly state that “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.” ’881 Patent, 11:31-34; 13:2-6. This is consistent with the specification which states that the “amount of the confirmation information fed back in each group is equal to a maximum number of codeword streams in this downlink sub-frame. *Id.*, 4:52-54; 5:46-49; and 8:63-65; Akl Decl., ¶¶ 80-81. Nevertheless, relying largely on an excerpt from the Background section of the ’881 Patent describing shortcomings in the prior art, Defendants’ expert argues the word “amount” is “vague and ambiguous, and open to multiple interpretations, and thus would not be able to ascertain the scope of the term in question.” Ex. D, ¶¶ 75-79.

But the ’881 Patent explains in the disclosures relating to the invention (and not the prior art) that “the number of codeword streams of the downlink sub-frame is *m*,” “each group corresponds to one downlink sub-frame and includes *m* pieces of the ACK/NA[]CK information,” and that “each piece of the ACK/NACK information in the group corresponds to the ACK/NACK information of one codeword stream in the downlink sub-frame corresponding to the group.” ’881 Patent, 9:14-23. From these disclosures, a POSITA would understand that, if there are two downlink sub-frames, and each of the downlink sub-frames uses two codeword streams, then the

amount of the confirmation information (i.e., the number of pieces of ACK/NACK information) fed back in each group would be equal to two, and the total amount of confirmation information fed back across the plurality of groups would be equal to four. Akl Decl., ¶¶ 81-82.

The excerpt from the prosecution history upon which Defendants' expert relies is consistent with this understanding. Indeed, the excerpt confirms that the amount of the confirmation information refers to the number of pieces of ACK/NACK information fed back in each group. For example, the applicants explained that "Claim 1 clearly limits the relationship between the amount of the confirmation information fed back in each group and the maximum number of codeword streams in this downlink sub-frame is that the amount of the confirmation information fed back in each group is equal to the maximum number of codeword streams in this downlink sub-frame, which is different from the disclosure of Gao." Ex. D at ¶¶81, Ex. F at 351.

Because a POSITA would be able to reasonably ascertain the meaning of the term "the downlink sub-frame" / "this downlink sub-frame" when read in the context of the claims and specification, the Court should adopt G+'s proposed construction.

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

1. **"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" (claim 20)**

G+'s Proposed Construction	Defendants' Proposed Construction
Not Indefinite Not governed by 112(f)	Indefinite § 112(6) governs this claim element.

Plain and Ordinary meaning Plaintiff objects to this as Defendants identified nearly an entire claim and not a claim term for construction.	Function: “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, $1 \leq K \leq 2B$, 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
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The term “processor arranged to ...” is not governed by § 112(f) because it connotes sufficiently definite structure to a person of ordinary skill in the art. Defendants’ argument that “processor arranged to ...” invokes § 112(f) should be rejected for at least three reasons.

First, the term “processor” is not a nonce word and connotes structures. *VDPP LLC v. Vizio, Inc.*, No. 2021-2040, 2022 WL 885771, at *3 (Fed. Cir. Mar. 25, 2022). This Court has also noted that “processor,” like “detector” and “circuit,” describes a class of structures even though it may not define a specific structure. *Smartflash LLC v. Apple Inc.*, 77 F. Supp. 3d 535 (E.D. Tex. Dec 4, 2014) (citing *Personalized Media Commc'ns, L.L.C. v. International Trade Comm'n*, 161 F.3d 696, 705 (Fed. Cir. 1998) (“detector”)); *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004) (“circuit”). The Court reaffirmed its holding in a subsequent ruling after *Williamson*. *Smartflash LLC v. Apple Inc.*, No. 6:13-cv-447-JRG-JNM, 2015 WL 4208754 (E.D. Tex. July 7, 2015) (finding processor not a nonce word after *Williamson*).

Second, a POSITA would understand that the term “processor” connotes structure. A POSITA would understand a “processor” to be more than a mere black box for performing a function when the specification specifies a processor and that it would be well-known to a POSITA. See *VDPP LLC v. Vizio, Inc.*, 2022 WL 885771, at *3. The ’130 Patent specification confirms that a user terminal with different units that can implement uplink control signal transmission would be well understood by a POSITA. See ’130 Patent, 22:44-48. The ’130 Patent further explains “that an implementation function of each unit in a device for uplink control signal transmission ... may be implemented by operating a program on a processor, and may also be implemented via a specific logic circuit.” ’130 Patent, 22:44-52. Dr. Akl has also explained that the structure of a mobile processor of the type commonly utilized in the user terminal of the ’130 Patent is well understood by a POSITA. Akl Decl. at ¶ 86-88. Such mobile processors typically contain a Central Processing Unit (CPU), a Graphics Processing Unit (GPU), an Image Signal Processor, Audio and Video Processing Unit, a radio frequency (RF) transceiver and 3G/4G/5G Modem. Ex. P at 4. Within the Central Processing Unit, there is at least also an instruction control unit, an arithmetic and logic unit (ALU), registers, a cache, buses, and a clock. *Id.* at 6-9.

Third, a person of ordinary skill in the art would understand the structural arrangement of the processor from the objectives and operations of the “processor arranged for ...” recited by the claim. See *Syncpoint Imaging, LLC v. Nintendo of Am. Inc.*, No. 2:15-CV-00247-JRG-RSP, 2016 WL 55118, at *20 (E.D. Tex. Jan. 5, 2016). The claim recites “sending K predefined sequences on M transmission symbols in a Transmission Time Interval (TTI) to send B-bit uplink control information.” A POSITA would understand that this means that control information is sent using a Transmission Time Interval with K number of predefined sequences on M number of transmission symbols that depend on the number of bits that are sent. Akl Decl. at ¶ 83.

A POSITA would know to create a transmission coding algorithm running on the mobile processor to transmit the control information. It is well understood that, for computer logic, a general algorithm would instruct the CPU in the processor to read the control information and its arithmetic and logic unit would determine the number of bits required to carry the control information. The algorithm instructs the ALU of the CPU to specify the appropriate radio frequencies suitable for carrying the bits of the predefined sequences on the specified symbols of those frequencies. The CPU then passes the radio frequencies to the Radio & 3G/4G/5G Modem, which initiates the transmission. A POSITA thus understands from the objectives and operations recited in the claim the structural arrangement of components within the processor required to perform the claimed control signal transmission. Akl Decl. at ¶ 83.

Thus, the term “processor arranged to ...” connotes sufficient structure to a POSITA and does not invoke § 112(f).

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

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

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

Blind detection, or blind decoding, is an operation used in 5G standards that allows User Equipment to gather control information related to a downlink shared channel. Akl Decl., ¶ 98. It is neither a “general term” nor ambiguous as Defendants’ expert contends (Ex. D, ¶¶ 85-86), but rather a well-known process that has been used in telecommunications standards dating back to 3GPP LTE/LTE-Advanced standards. Akl Decl., ¶ 98. Many communications systems utilize blind detection to reduce overhead and to eliminate the need for additional signaling. *Id.*, ¶ 99. A

POSITA thus would understand the plain and ordinary meaning of the term “blind detection” in the context of the intrinsic and extrinsic evidence. *Id.*, ¶¶ 96-100.

Defendants’ proposed construction should be rejected because it unnecessarily imports limitations from the specification into the claim elements and could render the claims indefinite. Defendants’ expert erroneously contends that “the inventors of the ’443 Patent provided their own definition for ‘blind detection’ and provided a detailed algorithm in the Patent” based on the disclosures in the specification concerning two (of six) embodiments (namely, “The First Embodiment” and “The Fourth Embodiment”). Ex. D, ¶ 86 (citing ’443 Patent, 11:10-21; 13:7-18). In both embodiments, blind decoding is **first** done “on the premise of assuming *k* as a specific value and correspondingly assuming *M* as a specific value.” ’443 Patent, 11:11-14; 13:8-13. Both embodiments then determine whether the “assumption concerning *k* and *M* is feasible” either “by checking through CRC after decoding” (first embodiment) or “through the *M*1 bits” (fourth embodiment). *Id.*, 11:14-18; 13:13-15.

But if either assumption is not feasible, blind detection is performed again “**by assuming *k* again as other values** until achieving correctly decoding” (first and fourth embodiments). *Id.*, 11:18-21; 13:15-18. Thus, even in these two embodiments, applying Defendants’ proposed construction would not work because the same infeasible result would repeatedly occur if the “specific value[s]” of *k* and *M* were assumed again. And nothing in these embodiments supports Defendants’ apparent contention that the “other values” are a “sequential assumption of values.” Ex. D, ¶ 87. Moreover, nothing in the claim language (or the other four disclosed embodiments) requires or even addresses performing blind detection again if the assumption is not feasible, and nothing in Defendants’ proposal instructs assuming *k* or *M* “again as other values” as set forth in the passages upon which Defendants’ expert relies. *See Geneva Pharms., Inc. v. GlaxoSmithKline*

PLC, 349 F.3d 1373, 1384 (Fed. Cir. 2003) (rejecting proposed construction that would render the claim indefinite).

The First Embodiment and The Fourth Embodiment disclose a particular way to perform blind detection, but these examples are not accompanied by any indication that the applicants intended to limit their claims in the manner Defendants propose. And as the Federal Circuit has repeatedly held, “the fact that embodiments (or even every embodiment) in the specification depict a particular arrangement or structure does not require reading that arrangement or structure into the claims.” *Ethicon*, 2021 WL 3716397, at *4.

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)**

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

A POSITA would understand the plain and ordinary meaning of this term in context. According to Defendants' expert, Stephen B. Wicker, “it is not clear whether the term in question requires presence of both length types, or in the alternative, just one length type.” Ex. D, ¶ 92. The assertion that the '443 Patent's claim does not inform a POSITA whether the term requires both length types or one length type is contrary to the intrinsic evidence and the understanding of a POSITA. The '443 Patent teaches that the length type of M2 may be “configured by a radio resource control (RRC) signaling transmitted by the second node; configured by a downlink control information (DCI) signaling transmitted by the second node; determined by the first node; predefined; and determined by the first node based on k.” '443 Patent, 6:45-50. For example, when the number of erroneous transmission blocks in the N transmission blocks (k) is $\geq$ a first threshold

($kT1$) and $\leq$ a second threshold ($kT2$), the length type of $M2$ is the second length type (i.e., the value of $M2$ is determined based on k); otherwise, the length type of $M2$ is the first length type (i.e., the value of $M2$ is predefined). *Id.*, 6:51-55. Indeed, 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. *See, e.g., id.*, cls. 1-20; Figs. 1, 2; 10:35-15:8.

Nothing in the specification supports Defendants' apparent position that it is somehow unclear whether both length types are required or just one. Rather, the '443 Patent explains that “[w]hen it's detected that the number k of the erroneous transmission blocks is equal to or greater than a first threshold value $kT1$ and is equal to or smaller than a second threshold value $kT2$ (assuming that $kT1=1$ and $kT2=6$), the length type of $M2$ is the second length type, the value of $M2$ is determined based on k , and $M2=\text{ceil}(\log_2(C_N^k))$.” *Id.*, 12:28-32. But if $k > kT2$ ($kT2=6$) and it is assumed that $M1=3$ and $M=N=16$ as in The Fourth Embodiment, for example, then $M2$ is predefined to be 13.⁴ *Id.*, 12:55-60. In other words, the length of $M2$ bits is predefined unless k is $\geq$ a first threshold ($kT1$) and $\leq$ a second threshold ($kT2$). Akl Decl., ¶ 95. A POSITA would understand that k could never meet both conditions simultaneously and that the length of $M2$ bits is always either the first length type or the second length type. *Id.* Nothing in either Patent Owner's Preliminary Response in IPR2022-01598 or in G+'s Preliminary Infringement Contentions contradicts this.⁵

⁴ In other embodiments in which k is either less than $kT1$ or greater than $kT2$, $M2$ is predefined to be 16. *See, e.g.*, 10:58-63 (First Embodiment); 11:38-41 (Second Embodiment); 12:1-2 (Third Embodiment); 14:1-6 (Fifth Embodiment). In The Sixth Embodiment, $M2$ is predefined as 12. *Id.*, 14:53-57.

⁵ To the extent the Court's claim construction order were to change G+'s good-faith understanding of this claim term, Local P-R 3-6 would permit G+ to amend its contentions.

Indeed, if the first threshold value $kT1$ is always 0 and the second threshold value $kT1$ is always 16 (assuming $N=16$) as Defendants' expert appears to suggest (Ex. D, ¶ 94), the claim language "the first length type indicating a value of $M2$ being predefined" would be improperly rendered superfluous. *See, e.g., Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1399 (Fed. Cir. 2014) (declining to adopt construction that would render claim language superfluous). Moreover, the threshold values are variable (i.e., either by being notified by RRC or DCI signaling transmitted by the second node or determined by the first node based on a present rule). '443 Patent 3:23-33. When $k > kT2$ (assuming $N=16$, $kT2=6$), feedback overhead would also be reduced because using a "predefined" value of $M2$ ensures the length of the $M2$ bits does not exceed a certain threshold, as it would if $M2 = \text{ceil}(\log_2(C_N^k))$. *see* '443 Patent, 12:55-60 (in one embodiment, the predefined value of $M2$ is 13 when $k > kT2$).

The Court should adopt G+'s proposed construction of plain meaning.

IV. CONCLUSION

For the foregoing reasons, G+ respectfully requests that the Court adopt G+'s proposed constructions.

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Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that on April 12, 2023, a true and correct copy of the foregoing instrument was electronically filed with the Clerk of the Court by using the CM/ECF system, which shall send notification of such filing to all counsel of record at their email addresses on file with the Court.

/s/ Bradley D. Liddle

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