UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

NOKIA SOLUTIONS AND NETWORKS US LLC and NOKIA SOLUTIONS AND NETWORKS OY,	§	
Plaintiffs,	§	
v.	§	Case No. 2:16-cv-0755-JRG-RSP
HUAWEI TECHNOLOGIES CO. LTD. and HUAWEI DEVICE USA, INC.	§	
Defendants.	§	

CLAIM CONSTRUCTION
MEMORANDUM AND ORDER

On May 3, 2017, the Court held an oral hearing to determine the proper construction of the disputed claim terms in U.S. Patent Nos. 8,249,022 (the "'022 Patent") and 8,451,787 (the "'787 Patent") (collectively the "Asserted Patents"). The Court has considered the parties' claim construction briefing (Dkt. Nos. 67, 70, and 71) and arguments. Based on the intrinsic and extrinsic evidence, the Court construes the disputed terms in this Memorandum Opinion and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015).

BACKGROUND

Plaintiffs Nokia Solutions and Networks US LLC and Nokia Solutions and Networks OY (collectively "Nokia") assert the Asserted Patents against Defendants Huawei Technologies Co. LTD. and Huawei Device USA, Inc., (collectively "Huawei").

The ’022 Patent relates to communications in a cellular network. The Abstract of the ’022 Patent recites:

> A user equipment (UE) receives a first dynamic resource allocation on a first channel (PDCCH), then sends data according to the first resource allocation. During a time at which an ACK/NACK for the sent data is scheduled to occur on a second channel (PHICH), the UE is engaging in an activity that takes priority over the ACK/NACK. The UE then receives a second dynamic resource allocation on the first channel and determines the ACK/NACK for the sent data from the second dynamic resource allocation. The determining can be direct, as in receiving a zero-valued resource allocation; or it may be indirect as in mapping the second dynamic resource allocation to the second channel and receiving the acknowledgement on the second channel after that mapping. Also detailed are similar mirror actions from the Node B's perspective, as well as apparatus, methods, and embodied computer programs.

’022 Patent Abstract. More particularly, the ’022 Patent describes the use of hybrid automatic repeat requests (H-ARQ) acknowledgements (ACK) and negative acknowledgements (NACK). *Id*. at 1:5-52. A problem with the use of H-ARQ ACK/NACK signaling is that the H-ARQ ACK/NACK signals may occur in a time period when a UE is engaged in activity that is a higher priority than the H-ARQ signals. *Id*. at 2:5-45. The ’022 Patent provides a technique in which a UE receives first dynamic resource allocation on a physical downlink control channel (PDCCH) and sends data according to the first resource allocation. *Id*. at 2:64-67, Figure 3 Blocks 302 and 304. During a time at which a H-ARQ acknowledgement or negative acknowledgement is scheduled to occur on a physical H-ARQ indicator channel (PHICH), the UE engages in a priority activity that takes priority over the H-ARQ acknowledgement or negative acknowledgement. *Id*. at 2:67-3:4, Figure 3 Block 306. The UE receives a second dynamic resource allocation on the PDCCH and determines the H-ARQ acknowledgement or negative acknowledgement for the sent data from the second dynamic resource allocation. *Id*. at 3:4-8, Figure 3 Blocks 310 and 314.

The ’787 Patent relates to communications in a cellular network. The Abstract of the ’787

Patent recites:

> A set of specific sequences including a set of root sequences and cyclic shifts thereof is searched, wherein it is started from a root sequence index indicating a root sequence of ordered root sequences, available cyclic shifts of the root sequence are included, and it is continued with a next root sequence if necessary for filling the set, interpreting the ordered root sequences in a cyclic manner.

'787 Patent Abstract. More particularly, the '787 Patent describes the allocation of preamble sequences that are used to identify a UE. The '787 Patent describes a standard in which 64 preamble sequences are utilized in each cell. The preamble sequences may be obtained by using 838 root sequences. A root sequence may be used to generate multiple preamble sequences by using cyclic shift techniques to generate multiple sequences by shifting data. *Id*. at 1:14-47. A UE generates the 64 sequences from a known sequence ordering scheme. *See id*. Root sequences are ordered, and cyclic shifts for the root sequences are provided. *Id*. "In order to minimize system information, only a root sequence index u0 and a cyclic shift increment Ncs and a mobility parameter are broadcasted for UEs of a cell." *Id*. at 1:26-29. "The UEs form a complete set of 64 sequences by determining available cyclic shifts of the sequence u0 and continuing from the consecutive root sequences until the 64 sequences are collected." *Id*. at 1:29-32.

LEGAL PRINCIPLES

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d

1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) ("There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.") (vacated on other grounds).

"The claim construction inquiry. . . begins and ends in all cases with the actual words of the claim." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). "[I]n all aspects of claim construction, 'the name of the game is the claim.'" *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)). A term's context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim's meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* (quoting *Vitronics Corp. v.*

Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). But, "'[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.'" *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. "[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).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office ("PTO") and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, "because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id.* at 1318; *see also Athletic Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be "unhelpful as an interpretive resource").

Although extrinsic evidence can also be useful, it is "'less significant than the intrinsic record in determining the legally operative meaning of claim language.'" *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad

or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.* The Supreme Court recently explained the role of extrinsic evidence in claim construction:

> In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be "so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning"). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the "evidentiary underpinnings" of claim construction that we discussed in *Markman*, and this subsidiary fact finding must be reviewed for clear error on appeal.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

A. Departing from the Ordinary Meaning of a Claim Term

There are "only two exceptions to [the] general rule" that claim terms are construed according to their plain and ordinary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution."[1] *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309

[1] Some cases have characterized other principles of claim construction as "exceptions" to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).

(Fed. Cir. 2014) ("[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal."). The standards for finding lexicography or disavowal are "exacting." *GE Lighting Solutions*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must "clearly set forth a definition of the disputed claim term," and "clearly express an intent to define the term." *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee's lexicography must appear "with reasonable clarity, deliberateness, and precision." *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee's statements in the specification or prosecution history must amount to a "clear and unmistakable" surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 ("The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope."). "Where an applicant's statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable." *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

B. Functional Claiming and 35 U.S.C. § 112, ¶ 6 (pre-AIA) / § 112(f) (AIA)[2]

A patent claim may be expressed using functional language. *See* 35 U.S.C. § 112, ¶ 6; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). Section 112, Paragraph 6, provides that a structure may be claimed as a "means . . . for performing a specified function" and that an act may be claimed as a "step for performing a specified function." *Masco Corp. v. United States*, 303 F.3d 1316, 1326 (Fed. Cir. 2002).

[2] Because the applications resulting in the Asserted Patents were filed before September 16, 2012, the effective date of the AIA, the Court refers to the pre-AIA version of § 112.

But § 112, ¶ 6 does not apply to all functional claim language. There is a rebuttable presumption that § 112, ¶ 6 applies when the claim language includes "means" or "step for" terms, and that it does not apply in the absence of those terms. *Masco Corp.*, 303 F.3d at 1326; *Williamson*, 792 F.3d at 1348. The presumption stands or falls according to whether one of ordinary skill in the art would understand the claim with the functional language, in the context of the entire specification, to denote sufficiently definite structure or acts for performing the function. *See Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (§ 112, ¶ 6 does not apply when "the claim language, read in light of the specification, recites sufficiently definite structure" (quotation marks omitted) (citing *Williamson*, 792 F.3d at 1349; Robert Bosch, LLC v. Snap-On Inc., 769 F.3d 1094, 1099 (Fed. Cir. 2014))); *Williamson*, 792 F.3d at 1349 (§ 112, ¶ 6 does not apply when "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure"); *Masco Corp.*, 303 F.3d at 1326 (§ 112, ¶ 6 does not apply when the claim includes an "act" corresponding to "how the function is performed"); *Personalized Media Communications, L.L.C. v. International Trade Commission*, 161 F.3d 696, 704 (Fed. Cir. 1998) (§ 112, ¶ 6 does not apply when the claim includes "sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term 'means.'" (quotation marks and citation omitted)).

When it applies, § 112, ¶ 6 limits the scope of the functional term "to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves multiple steps. "The first step . . . is a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). "[T]he next step is to determine the corresponding structure disclosed in the

specification and equivalents thereof." *Id*. A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id*. The focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id*. The corresponding structure "must include all structure that actually performs the recited function." *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). However, § 112 does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

For § 112, ¶ 6 limitations implemented by a programmed general purpose computer or microprocessor, the corresponding structure described in the patent specification must include an algorithm for performing the function. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). The corresponding structure is not a general purpose computer but rather the special purpose computer programmed to perform the disclosed algorithm. *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

C. Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA)[3]

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence, must "inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). If it does not, the claim

[3] Because the application resulting in the patent was filed before September 16, 2012, the effective date of the AIA, the Court refers to the pre-AIA version of § 112.

fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 2124. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application for the patent was filed. *Id.* at 2130. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *Id.* at 2130 n.10. "[I]ndefiniteness is a question of law and in effect part of claim construction." *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, "the court must determine whether the patent provides some standard for measuring that degree." *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, "the court must determine whether the patent's specification supplies some standard for measuring the scope of the [term]." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2005); *accord Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (citing *Datamize*, 417 F.3d at 1351).

In the context of a claim governed by 35 U.S.C. § 112, ¶ 6, the claim is invalid as indefinite if the claim fails to disclose adequate corresponding structure to perform the claimed functions. *Williamson*, 792 F.3d at 1351–52. The disclosure is inadequate when one of ordinary skill in the art "would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim." *Id.* at 1352.

AGREED TERMS

The parties agreed to the following terms prior to the oral hearing:

Term	Agreed Construction
"transmit means configured to send to the network node data according to the first resource allocation"	Function: sending to the network node data according to the first resource allocation

('022 Patent Claim 20)	Structure: transmitter, transceiver, or other equivalents thereof
"receiver means configured to receive a first dynamic resource allocation on a first channel from a network node" "receiver means further configured to receive a second dynamic resource allocation on the first channel" ('022 Patent Claim 20)	Function: receiving a first dynamic resource allocation on a first channel from a network node AND receiving a second dynamic resource allocation on the first channel Structure: receiver, transceiver, or other equivalents thereof
"mapping the received second dynamic resource allocation to the second channel using a received offset of the second index sequence" / "mapping the received second dynamic resource allocation to the second channel using an offset of the second index sequence" ('022 Patent Claims 6, 17)	Plain and ordinary meaning
"interpreting the ordered root sequences in a cyclic manner" ('787 Patent Claim 1)	Plain and ordinary meaning
"[search/searching] a set of specific sequences" ('787 Patent Claim 1)	Plain and ordinary meaning

(Dkt. No. 72-1 at 1-2, 12-15.)

DISPUTED TERMS

1. "computer readable memory" ('022 Patent Claims 9, 10, 11)

Nokia's Proposed Construction	Huawei's Proposed Construction
"non-transitory computer readable memory"	Plain meaning

The parties dispute whether or not inclusion of "non-transitory" is necessary. At the oral hearing, the Court proposed that the term be construed to have its plain and ordinary meaning. The Court also proposed that the Court "reject that the plain meaning could be a device other than a physical device."[4] Both parties agreed to the Court's proposal. (Dkt. No. 82 at 3-4.) Thus, the parties have agreed to an ordinary meaning in which the device is a physical device.

The Court construes "computer readable memory" to have its plain and ordinary meaning.

2. "[determining/determine] the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" ('022 Claims 1, 9, 12, 20)

Nokia's Proposed Construction	Huawei's Proposed Construction
Plain and ordinary meaning	[determining/determine] from the second dynamic resource allocation the acknowledgement or negative acknowledgement for the sent data that the network node would have sent in the absence of the prior activity **<u>Alternative Construction:</u>** [determining/determine] from the second dynamic resource allocation the acknowledgement or negative acknowledgement for the sent data that was scheduled to occur on a second channel (Dkt. No. 70 at 3-4.)

The parties dispute whether the term should be clarified to indicate that "***the***" acknowledgement and negative acknowledge are the same acknowledgement and negative acknowledgement previously recited in the claim. At the oral hearing, the Court proposed the

[4] Huawei's arguments had implied that the memory could be some form of transitory, non-physical structure. (Dkt. No. 70 at 1-2.)

construction which the Court adopts below. Both parties agreed to the Court's proposal. (Dkt. No. 82 at 4.)

The Court construes "[determining/determine] the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" to mean "[determining/determine], from the received second dynamic resource allocation, the acknowledgement or negative acknowledgement for the sent data that is scheduled to occur on a second channel."

3. "zero-valued [radio] resource" ('022 Claims 4, 15)

Nokia's Proposed Construction	Huawei's Proposed Construction
Plain and ordinary meaning	a special indication that no new [radio] resources are to be granted Huawei alternatively proposes using "are granted" in place of "are to be granted" Huawei alternatively proposes the term to be construed should be "allocation of a zero-valued [radio] resource." (Dkt. No. 70 at 7-8.)

The parties dispute whether the term requires "an indication that no new resources" are to be granted. Nokia contends that the term has a plain and ordinary meaning, but asserts in the briefing that "zero-valued" relates to the size of an allocation being zero. (Dkt. No. 71 at 4.) At the oral hearing, the Court proposed "a resource that has a size of zero." Both parties agreed to the Court's proposed construction. (Dkt. No. 82 at 4-5.)

The Court construes "zero-valued resource" to mean "a resource that has a size of zero."

4. "processing means configured to control at least the receiver means, during a time at which an acknowledgement or negative acknowledgement for the sent data is scheduled to be received on a second channel, to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement,"
and
"processing means further configured to determine the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" ('022 Claim 20)

Nokia's Proposed Construction	Huawei's Proposed Construction
Function: (Agreed) "controlling at least the receiver means, during a time at which an acknowledgement or negative acknowledgement for the sent data is scheduled to be received on a second channel, to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement" AND "determining the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" **Structure**: processor, memory, and/or associated software configured to perform the algorithm disclosed in block 306 and block 314 of Fig. 3 and corresponding text, e.g., 7:61-8:38, and equivalents thereof	**Function**: (Agreed) "controlling at least the receiver means, during a time at which an acknowledgement or negative acknowledgement for the sent data is scheduled to be received on a second channel, to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement" AND "determining the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" **Structure**: The specification fails to set forth any algorithm for the functions claimed in this software limitation. Claim is indefinite.

The parties dispute whether an algorithm for the functions is disclosed.

Positions of the Parties

Nokia notes that the specification states that in a particular embodiment the "processing means is a digital data processor." '022 Patent 3:60-61. Nokia further notes that Figure 3 of the '022 Patent is a "flowchart showing process steps according to embodiments of the invention from both the UE and the Node B perspective." *Id*. at 4:50-52. Nokia contends that the flowchart shows

the UE engaging in a priority activity at Block 306 and determining the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation at Block 314:

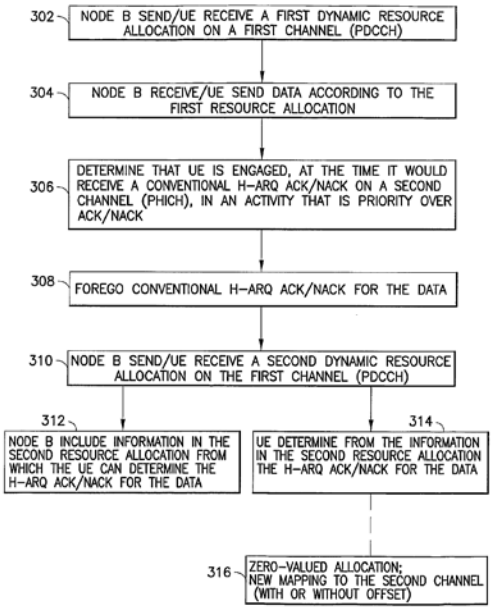

FIG.3

Id. at Figure 3.

Nokia contends that, for the first function, the specification discloses embodiments where the UE engages in "measurement gaps" to "do cell identification" and perform additional "measurements of the channel (i.e., some measure of channel quality such as signal strength) with neighboring eNBs to be prepared for handover from one eNB to another" '022 Patent 2:5-22. Nokia contends that the specification is also explicit that these measurement gaps are a higher priority activity over receiving the acknowledgement or negative acknowledgement. *Id*. at 2:23-45. Nokia contends that these examples are reiterated when describing the process flow diagram of Figure 3: "the UE is engaged in some other activity that takes priority over receiving a conventional H-ARQ ACK/NACK such as for example measuring or reporting a channel or

measuring a neighbor cell." *Id*. at 8:1-7. Nokia, thus, asserts that there is disclosure of how the processing means controls the receiver to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement – in these examples, the processing means causes the receiver to engage in measurement activities, such as measuring signal strength, which takes priority over receiving an ACK/NACK. (Dkt. No. 71 at 6 (citing Dkt. No. 71-1 (Miller Decl.) at ¶ 19).) Nokia contends that measuring signal quality, such as signal strength, was known to persons of ordinary skill in the art at time of the invention, as evidenced by the background of the invention (*Id*. (citing Dkt. No. 71-1 (Miller Decl.) at ¶ 19 and '022 Patent at 2:5-31).)

As to the second function, Nokia contends that the specification flow chart of Figure 3 also provides detail as to how a UE may determine the acknowledgement or negative acknowledgement. (Dkt. No. 67 at 18.) Nokia points to the passage:

> At block 312, it is seen that in the second dynamic resource allocation the Node B included information by which ***the UE will be able to determine the H-ARQ ACK/NACK. At block 314 the UE determines from that information the H-ARQ ACK/NACK for the data it sent at block 304.*** Block 316 lists two different types of such information.
>
> An example of the case where the ***UE determines the H-ARQ ACK/NACK directly from the second resource allocation*** is that the second resource allocation includes a zero-valued radio resource. The UE recognizes that as an ACK. . . . ***An example of the case where the UE determines the H-ARQ ACK/NACK indirectly from the second resource allocation*** is that the UE maps the index sequence of the second allocation to the allocated resources, and one of the resources allocated to the UE by that mapping is the PHICH (in the case of an ACK), in which case the UE tunes to it and receives the ACK. The UE recognizes that since it was engaged in a priority activity at block 306 when the conventional ACK should have been sent (but may not have been at block 308, the UE has no way of knowing) then this ACK must relate to the data sent at block 204. . . . These examples are summarized at block 316.

(*Id*. at 8:9-38 (emphasis added).) Nokia contends that the specification provides a clear explanation of an algorithm:

> The H-ARQ information in embodiments of this invention is to be conveyed by the dynamic allocations on the PDCCH, ***where a negative acknowledgement is indicated by a redundancy version (of the original NACK that the UE could not receive) telling the UE that a retransmission is expected***, while the positive acknowledgement is indicated by allocating/granting resources for a redundancy version indicating a new transmission (of an ACK on the PHICH mapped by the new PDCCH allocation).

'022 Patent 5:8-17 (emphasis added). Nokia contends that a person of ordinary skill would understand this to provide sufficient disclosure of how to determine a NACK. (Dkt. No. 71 at 7 (citing Dkt. No. 71-1 (Miller Decl.) at ¶ 20).)

Huawei contends that both functions lack algorithms. Huawei contends that Figure 3 does not disclose a step-by-step procedure to perform the first function ("controlling at least the receiver means . . . to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement"). Huawei contends that Block 306 (which Nokia identifies as performing the first function) does not even disclose a procedure for the UE to do anything at all: at most, it discloses another entity "determin[ing] that a UE is engaged . . . in an activity that is priority over ACK/NACK." (Dkt. No. 70 at 10 (quoting Block 306).) Huawei contends that this disclosure does not even fully restate the function. Huawei contends that even if Figure 3 indirectly discloses the partial function of a "receiver means . . . engage[ing] in a priority activity that takes priority over receiver the acknowledgement or negative acknowledgement," neither Figure 3 nor anywhere else in the patent discloses an algorithm for how the processor means controls the receiver means to accomplish that function, which is what is required. (*Id*. at 11.) Huawei contends that the knowledge of one of ordinary skill in the art cannot be used to fill the gaps where a specification fails to disclose any corresponding structure, as is the case here. (*Id*. (citing *Function Media* L.L.C., 708 F.3d 1310, 1319 (Fed. Cir. 2013)).)

Huawei also contends that the specification fails to disclose an algorithm to accomplish the second function of the processing means ("determining the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation"). Huawei contends that Figure 3 at Block 314 merely shows that the second function occurs, and does not provide a step-by-step procedure as to how that function is accomplished. (*Id*.) As to the language at 8:9-38 quoted above, Huawei contends the passage merely employs further functional language and it, at most, discloses determining the acknowledgement and does not disclose determining the negative acknowledgement. Specifically, Huawei points to the passage and notes that passage lacks a reference to negative acknowledgement (or "NACK"). (*Id*. at 12 (citing '022 Patent 8:9-38).)

Huawei did not provide argument on this term at the oral hearing. (Dkt. No. 82 at 6.)

Analysis

As to the first function, Block 306 of Figure 3 merely repeats the functional language of the claim, with the exception that H-ARQ communications are explicitly called out. Such disclosure alone may not be sufficient to satisfy the requirement of providing an algorithm. However, the specification provides more. Specifically, the specification provides that at the time a H-ARQ ACK/NACK would be provided, the UE is controlled to engage in a priority activity which is the UE measuring a channel or measuring a neighbor cell. The UE is controlled to do nothing with regard to a H-ARQ ACK/NACK. '022 Patent 7:67-8:6. This conforms to the background discussion of potential conflicts between measurements related to handover and H-ARQ communications. *Id*. at 2:5-36.

As to the second function, Block 314 of Figure 3 merely repeats the functional language of the claim, with the exception that H-ARQ communications are explicitly called out. Such

disclosure alone may not be sufficient to satisfy the requirement of providing an algorithm. However, the specification provides more. Specifically, the specification indicates that there may be multiple ways determinations are made. A first approach for making determinations involves the use of zero-valued resources for a direct determination: "[a]n example of the case where the UE determines the H-ARQ ACK/NACK directly from the second resource allocation is that the second resource allocation includes a zero-valued radio resource." '022 Patent 8:16-19. This passage explicitly indicates ACK/NACK may be determined directly in this manner. The specification then goes on to explain an example where the zero-valued resource is used to indicate an ACK. However, the passage begins with a clear reference that both ACK/NACK may be determined in this manner. A second approach for making determinations involves an indirect determination through the use of mapping: "[a]n example of the case where the UE determines the H-ARQ ACK/NACK indirectly from the second resource allocation is that the UE maps the index sequence of the second allocation to the allocated resources, …." *Id*. at 8:24-27. The specification continues with a more detailed description of the ACK determination, however, it is clear that both ACK/NACK may be determined through an indirect determination of mapping the index sequence of the second allocation to the allocated resources. Furthermore, this is reiterated elsewhere in the specification:

> The determining can be direct, as in receiving a zero-valued resource allocation; or it may be indirect as in mapping the second dynamic resource allocation to the second channel and receiving the acknowledgement on the second channel after that mapping.

'022 Patent 3:8-12.

At the oral hearing, the Court proposed citation to the passage at 8:16-27 as shown in the construction adopted by the Court. Nokia agreed to the Court's proposal below except sought the

further addition of the passage at '022 Patent 5:8-17 for the second function. Huawei maintained its indefinite position, but if construed, did not object to inclusion of the passage at 5:8-17. (Dkt. No. 82 at 5-6.) The passage at 5:8-17 describes how H-ARQ ACK/NACK information is conveyed:

> The H-ARQ information in embodiments of this invention is to be conveyed by the dynamic allocations on the PDCCH, where a negative acknowledgement is indicated by a redundancy version (of the original NACK that the UE could not receive) telling the UE that a retransmission is expected, while the positive acknowledgement is indicated by allocating/granting resources for a redundancy version indicating a new transmission (of an ACK on the PHICH mapped by the new PDCCH allocation).

'022 Patent 5:8-17. This passage provides further guidance as to how the UE may perform the claimed determining function by describing what the UE detects to indicate a negative acknowledgement or positive acknowledgement.

The Court construes "processing means configured to control at least the receiver means, during a time at which an acknowledgement or negative acknowledgement for the sent data is scheduled to be received on a second channel, to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement," and "processing means further configured to determine the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation" to mean:

<u>Function</u>:

"controlling at least the receiver means, during a time at which an acknowledgement or negative acknowledgement for the sent data is scheduled to be received on a second channel, to engage in a priority activity that takes priority over receiving the acknowledgement or negative acknowledgement"

AND

"determining the acknowledgement or negative acknowledgement for the sent data from the received second dynamic resource allocation"

Structure: processor, memory, and/or associated software configured to perform

(1) the controlling function according to an algorithm in Figure 3 Block 306 and the text at 7:67-8:6 to control user equipment, during a time an H-ARQ acknowledgement or negative acknowledgement is scheduled to be received, to measure a channel or measure a neighboring cell while the user equipment does nothing with regard to the H-ARQ acknowledgement or negative acknowledgement; and

(2) the determining function according to an algorithm (a) in Figure 3 Block 314 and the text at 8:16-27 providing for directly determining the H-ARQ acknowledgement or negative acknowledgement from the second dynamic resource allocation by determining that the second dynamic resource allocation includes a zero-valued radio resource, (b) in Figure 3 Block 314 and the text at 8:16-27 providing for indirectly determining the H-ARQ acknowledgement or negative acknowledgement from the second dynamic resource allocation by mapping an index sequence of the second dynamic resource allocation to the allocated resources, or (c) in Figure 3 Block 314 and the text at 5:8-17 where a negative acknowledgement is indicated by a redundancy version (of the original NACK that the UE could not receive) telling the UE that a retransmission is expected, while the positive acknowledgement is indicated by allocating/granting resources for a redundancy version indicating a new transmission (of an ACK on the PHICH mapped by the new PDCCH allocation); and equivalents thereof.

5. "[search/searching] a set of specific sequences . . . [continue/continuing] with a next root sequence if necessary for filling the set" ('787 Claims 1, 5)

Nokia's Proposed Construction	Huawei's Proposed Construction
Plain and ordinary meaning	Indefinite

Huawei contends that performing two operations on a set of sequences ("searching" and "filling") renders the term incomprehensible.

Positions of the Parties

Nokia points to the claim as a whole and states that the disputed language is clear:

> 1. A device comprising:
> a searching unit configured ***to search a set of specific sequences***, comprising a set of root sequences and cyclic shifts thereof, wherein the searching unit is configured to start from a root sequence index indicating a root sequence of ordered root sequences, include available cyclic shifts of the root sequence, and ***continue with a next root sequence if necessary for filling the set***, interpreting the ordered root sequences in a cyclic manner.

'787 Patent Claim 1 (emphasis added). Nokia states that the specification is also clear as to how a UE would "search a set of specific sequences:"

> In E-UTRAN FDD (Frequency Division Duplex) system, 64 preamble sequences are allocated for each cell. In order to minimize system information, only a root sequence index u0 and a cyclic shift increment Ncs and a mobility parameter are broadcasted for UEs of a cell. The UEs form a complete set of 64 sequences by determining available cyclic shifts of the sequence u0 and continuing from the consecutive root sequences until the 64 sequences are collected.

'787 Patent 1:25-32. Nokia states that the specification also describes embodiments of the "searching unit:"

> Each of the devices 10, 20, 30 comprises a searching unit 12, 22, 32 which searches specific sequences based on a root sequence index u0 indicating a root sequence of ordered sequences, a cyclic shift increment of the root sequence Ncs and a mobility parameter "Mobility" from the ordered sequences.
> . . .
> The specific sequences searched by the searching unit 12, 22, 32 may comprise a set of root sequences and cyclic shifts thereof. The searching unit 12, 22, 32 starts

> the search of suitable root sequences from a sequence indicated by the root sequence index u0, including consecutive root sequences if needed, interpreting the order of the root sequences, i.e. the root sequence order, cyclic.

Id. at 5:17-22, 5:51-57. Nokia contends that this makes it clear how a UE searches "a set of specific sequences . . . [continue/continuing] with a next root sequence if necessary for filling the set." (Dkt. No. 67 at 21.)

Huawei notes that the language at issue involves two actions performed on a set of sequences—"searching a [] set," and "filling the set." Huawei contends that the recitation of both searching a set and filling the same set renders the claim incomprehensible and its scope thus unclear. Huawei states that searching a set and filling a set both plainly mean different things, and those plain meanings are supported by the surrounding claim language (Dkt. No. 70 at 13.)

Huawei contends that the only embodiment identified in Nokia's brief would require rewriting the claims to include multiple sets, but the claim as written recites that the same set is both searched and filled, suggesting that there is some kind of ambiguous relationship between searching and filling. (*Id*.). Huawei contends that (1) the claims might require searching a set that contains some root sequences and some cyclic shifts of those root sequences, and then filling the set with further available cyclic shifts of those root sequences or (2) the claims can be interpreted differently, due to the ambiguity in searching a set and filling the same set. *Id*.

In reply, Nokia contends that Huawei reads claims in a manner divorced from the context of the invention as described in the specification. Nokia contends that Huawei focuses only on certain portions of the claims and ignores the remainder of the intrinsic record. Nokia contends that the passage at 1:25-32, quoted above, makes clear as to how a UE could search a set of specific sequences.

As to Huawei's "alternative" interpretation of the asserted claims ("One possible explanation is that the claims require searching a set of root sequences that may or may not contain all cyclic shifts for those sequences, and then filling that set with 'available' cyclic shifts the searching unit did not find already present in the set"), Nokia contends that this is not described in the specification, nor is it a viable "alternative," because it contradicts both the plain language of the asserted claims and the description of the invention. (Dkt. No. 71 at 8.) Nokia contends that the notion that a set of root sequences "may or may not contain all cyclic shifts for those sequences" makes no sense, because root sequences are simply that—root sequences from which cyclic shifts are derived. Nokia states that cyclic shifts of root sequences are the results of cyclically shifting a root sequence by some increment. (*Id*. at 8-9 (citing Dkt. No. 71-1 (Miller Decl.) at ¶¶ 22-23 and '787 Patent 1:25-57).) Nokia states that the root sequence itself does not "contain" the cyclic shifts; rather, the cyclic shifts are created from the root sequence (*Id*. at 9 (citing Dkt. No. 71-1 (Miller Decl.) at ¶¶ 22-23).) Nokia states that this is clear in the claims: "comprising a set of root sequences and cyclic shifts thereof . . . ." Nokia contends that because root sequences do not "contain" cyclic shifts, a POSITA would not find Dr. Laneman's proposed "alternative" reasonable. Nokia states that a POSITA would understand from the claims and specification, that the UE "forms a complete set of 64 sequences" by determining the available cyclic shifts of a root sequence using a cyclic shift increment and a mobility parameter (Dkt. No. 71 at 9 (citing '787 Patent 1:25-57 and Dkt. No. 71-1 (Miller Decl.) at ¶¶ 21-24).)

Analysis

The specification describes a process in which a set of preamble sequences (for example 64 sequences) are allocated for each cell. '787 Patent 1:14-24. A set of sequences is formed based on using one or more root sequences and shift increments of that root sequence. '787 Patent 1:14-

32, 5:17-22, 5:51-57. A searching unit searches for the specific sequences based on using an initial root sequence and applying shifts. If additional sequences are needed, then the next additional root sequence and shifts are utilized, and so on, until the set is completely formed. *Id*. Thus, a searching unit searches for the sequences to be used and forms the set (for example the set of 64 sequences). *See id.*

Huawei in essence argues that the use of "search a set" and "filling the set" in the claim, may create some ambiguity if read in the abstract without reference to the specification. However, claims must be read in context of the specification and the claim itself. *Phillips*, 415 F.3d at 1312–13. In context of the specification passages noted above, it is clear that the search unit searches for a set of sequences and fills the set based on the search results. The claim further provides how the searching unit does this: "start from a root sequence index indicating a root sequence of ordered root sequences, include available cyclic shifts of the root sequence, and continue with a next root sequence if necessary for filling the set, interpreting the ordered root sequences in a cyclic manner." Having the benefit of the specification, this is clear.

Huawei contends that the literal claim language requires searching an existing set and also filling that same set. Alternatively, Huawei contends that the claim requires two different sets. However, the specification should be considered in ascertaining the meaning of the claim. At the oral hearing, Huawei acknowledged that there is no description in the specification for searching an existing set. (Dkt. No. 82 at 8-9.) Huawei also acknowledged that the claim language substantially conforms to the usage in the passages of column 5 cited above. (See *id*. at 14-17.) To the extent Huawei argues there is ambiguity in the literal language of the claim, the specification removes such ambiguity. At the oral hearing, the Court proposed the construction adopted below and Nokia agreed to that construction. (*Id*. at 8.)

The Court construes "[search/searching] a set of specific sequences . . . [continue/continuing] with a next root sequence if necessary for filling the set" to mean "searching for a set of specific sequences . . . [continue/continuing] with a next root sequence if necessary for filling the set."

6. "the ordered root sequences are obtained by ordering" ('787 Claim 2)

Nokia's Proposed Construction	Huawei's Proposed Construction
Plain and ordinary meaning	Indefinite In the event not found indefinite: the device obtains the ordered root sequences by ordering

"the ordered root sequences are obtained by dividing the sequences . . . and ordering" ('787 Patent Claim 3)

Nokia's Proposed Construction	Huawei's Proposed Construction
Plain and ordinary meaning	Indefinite In the event not found indefinite: the device obtains the ordered root sequences by dividing the sequences . . . and ordering

The parties dispute whether the claims include mixed method and apparatus limitations, rendering the claims invalid under *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005).

Positions of the Parties

Nokia contends that the relevant inquiry under *IPXL* is "whether the claim leaves the reader unclear whether infringement [ ]occurs when one creates a system that allows the user to [practice the claimed method step], or whether infringement occurs when the user actually [practices the

method step]." (Dkt. No. 67 at 23-24 (quoting *CryptoPeak Sols., LLC v. Lowe's Home Ctrs. LLC*, 2016 WL 5430830, at *2 (quoting *IPXL Holdings*, 430 F.3d at 1384) (E.D. Tex. Sept. 29, 2016)).)

Nokia contends that both limitations are directed to the manner in which the "ordered root sequences" are configured in the searching unit of the device of claim 1. Specifically, Nokia states that these limitations are directed to the capability of the searching unit for ordering sequences (i.e., the configuration of the searching unit), not a method performed by the searching unit. (Dkt. No. 67 at 24.) Nokia contends that this is clear from claim 1, which requires a searching unit that is configured to search a set of specific sequences by starting "from a root sequence index indicating a root sequence of ordered root sequences" and including "available cyclic shifts of the root sequence" until the set is filled. '787 Patent 7:51-59. Nokia contends that claims 2 and 3 add an additional limitation directed to how the ordered root sequences of claim 1 are configured. Nokia contends that there is no confusion as to whether infringement occurs when one creates the device according to claims 2 or 3, or whether infringement occurs when a user actually uses the device because the additional limitations of claims 2 and 3 are directed to capabilities as to how the ordered root sequences are configured in the device.

Nokia contends that describing the "capabilities of [a] system" does not create "uncertainty about when infringement would occur—it plainly occurs when a system is created that can perform the claimed functions." (Dkt. No. 67 at 25 (quoting *SFA Sys., LLC v. 1-800-Flowers.com, Inc.*, 940 F. Supp. 2d 433, 455 (E.D. Tex. 2013)).)

Nokia contends that because these limitations define the configuration of the device, and do not require that the device perform a method or be used to perform a method, Huawei's alternative constructions improperly add a limitation not found in the claims or specification. Specifically, Nokia contends that Huawei's alternative constructions simply reword the claims and

insert a limitation requiring "the device" to perform the ordering. (*Id*.) Nokia contends that this changes the claim from covering a device that is configured in a certain manner to a device that configures itself in a certain manner. Nokia contends this is without any support in the intrinsic record. (*Id*.)

Huawei states that Nokia contests Huawei's secondary contention—that "ordering" and "dividing" are tied to the recited device. Huawei states that if Nokia is correct, then that confirms Huawei's primary contention—that the claims are mixed method and apparatus and are therefore indefinite under *IPXL*. (Dkt. No. 70 at 15.) Huawei contends that a claim covers both an apparatus and a method to use that apparatus when it recites activities that can be performed by a person. (*Id*. at 15-16 citing *IPXL* and *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1318 (Fed. Cir. 2011).) Huawei contends that the problem with claims 2 and 3 is that the functionality—dividing and obtaining ordered root sequences—is not tied to the device recited in independent claim 1. Huawei contends that this means that the claims may be read to improperly cover the dividing or obtaining of the ordered root sequences performed by a person, since nothing in the claim expressly ties either the dividing or obtaining to the device. (*Id*. at 16.) Huawei asserts that the ambiguity in who or what performs the functionality of dividing or obtaining is apparent in the context of other functionalities that are recited in the claims, which are expressly tied to the device—"the searching unit is configured to start from a root sequence index . . . include available cyclic shifts . . . continue with a next root sequence . . . interpreting the ordered root sequences. . . ." (*Id*. (citing '787 Patent Claim 1).)

Huawei contends that if the claims merely recite the capabilities of the device to divide and order the sequences, Huawei's alternative constructions are correct by definition and should be adopted. Huawei contends that its alternative positions are sensible: Either the claims cover steps

performed by some person or system other than the claimed device, in which case they are indefinite, or they do not, in which case that should be clarified for the jury's benefit. (*Id*.) Huawei states that, a lay jury, unfamiliar with the *IPXL* line of cases, may improperly understand the scope of the claims to include method steps performed by some person or other system. Huawei contends that its alternative construction provides needed clarity by expressly attributing the dividing and obtaining of ordered root sequences to the claimed device.

In reply, Nokia contends that Huawei's alternative constructions are equally unavailing because they improperly insert a limitation requiring "the device" to perform the ordering. This addition drastically changes the claim from covering a device that is configured in a certain manner to a device that configures itself in a certain manner. Nokia contends that Huawei's response fails to explain why such a narrowing and circular construction is warranted. (Dkt. No. 71 at 10.)

Analysis

The holding in *IPXL* was based on the concern that notice should be given to the public as to whether infringement occurs when one creates a system or when the user actually uses the system. *IPXL*, 430 F.3d at 1384. Claims in which mixed claiming has been found to be improper create such confusion. *IPXL*, 430 F.3d at 1379, 1384 (the claim language included "and the user uses the input means to either change…"); *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1318 (Fed. Cir. 2011) (the claim language included "said certain of said individual callers digitally enter data"); *H-W Tech., L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1336 (Fed. Cir. 2014) (the claim language included "wherein said user completes" and "where said user selects").

The claim language at issue here does not create such confusion. As drafted, the claims provide clarity as to when infringement occurs. Claim 1 requires a searching unit configured to

search a set of specific sequences, comprising a set of root sequences. Claims 2 and 3 describe what type of root sequences the searching unit is configured to search for: ordered root sequences obtained by ordering sequences in a particular manner (claim 2) or ordered root sequences obtained by dividing sequences in a particular manner (claim 3). It is clear that the claims are directed toward the device and its searching unit configured to search for specific sequences. The claims do not recite or require a particular entity to perform the ordering or dividing. Rather, the system must just be configured to search for a set of sequences that have those particularly claimed characteristics.

The Court construes the terms "the ordered root sequences are obtained by ordering" and "the ordered root sequences are obtained by dividing the sequences . . . and ordering" to have their plain and ordinary meaning.

CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit. The parties are ordered to not refer to each other's claim construction positions in the presence of the jury. Likewise, in the presence of the jury, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court. The Court's reasoning in this order binds the testimony of any witnesses, and any reference to the claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 24th day of May, 2017.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE