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

OPTIS WIRELESS TECHNOLOGY LLC & PANOPTIS PATENT MANAGEMENT, LLC, Plaintiffs, v. ZTE CORPORATION & ZTE (USA) INC., Defendants.	Case No. 2:15-cv-300-JRG-RSP

MEMORANDUM OPINION AND ORDER

Before the Court is the opening claim construction brief of Plaintiffs Optis Wireless Technology, LLC and PanOptis Patent Management, LLC ("Plaintiffs") (Dkt. No. 66, filed on December 22, 2015),[1] the response of ZTE Corporation and ZTE (USA) Inc. ("Defendants") (Dkt. No. 78, filed on January 19, 2016), the reply of Plaintiffs (Dkt. No. 83, filed on January 27, 2016), and the sur-reply of Defendants (Dkt. No. 92, filed on February 9, 2016). The Court held a hearing on claim construction and definiteness on February 17, 2016. Having considered the arguments and evidence presented by the parties at the hearing and in their briefing, the Court issues this Order.

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[1] Citations to the parties' filings are to the filing's number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF.

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I.   BACKGROUND

Plaintiffs allege infringement of U.S. Patents No. 6,356,631 (the "'631 Patent"), No. 6,865,191 (the "'191 Patent"), No. 8,064,919 (the "'919 Patent"), No. 8,199,792 (the "'792 Patent"), and No. 8,411,557 (the "'557 Patent") (collectively, the "Asserted Patents"). Generally, the Asserted Patents are directed to computer- and radio-implemented telecommunications.

The '631 Patent is entitled "Multi-Client Object-Oriented Interface Layer." The application leading to the '631 Patent was filed on September 24, 1998 and the patent issued on March 12, 2002.

The '191 Patent is entitled "System and Method for Sending Multimedia Attachments to Text Messages in Radiocommunication Systems." The application leading to the '191 Patent claims priority to a provisional application filed on August 12, 1999 and the patent issued on March 8, 2005.

The '919 Patent is entitled "Radio Communication Base Station Device and Control Channel Arrangement Method." The application leading to the '919 Patent claims priority to a number of Japanese patent applications through a series of continuation applications. The earliest Japanese application was filed on March 23, 2007 and the '919 Patent issued on November 22, 2011.

The '792 Patent is entitled "Radio Communication Apparatus and Response Signal Spreading Method." The application leading to the '792 Patent claims priority to a number of Japanese patent applications through a series of continuation applications. The earliest Japanese application was filed on June 15, 2007 and the '792 Patent issued on June 12, 2012.

The '557 Patent is entitled "Mobile Station Apparatus and Random Access Method." The application leading to the '557 Patent claims priority to a Japanese patent application through a

series of continuation applications. The Japanese application was filed on March 20, 2006 and the '557 Patent issued on April 2, 2013.

II.   LEGAL PRINCIPLES

A.   Claim Construction

"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)). First, 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 factfinding must be reviewed for clear error on appeal.

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

B.   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."[2] *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 (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."

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[2] 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).

3M Innovative Props. Co. v. Tredegar Corp., 725 F.3d 1315, 1326 (Fed. Cir. 2013); *see also*

Avid Tech., Inc. v. Harmonic, Inc., 812 F.3d 1040, 1045 (Fed. Cir. 2016) ("When the prosecution

history is used solely to support a conclusion of patentee disclaimer, the standard for justifying

the conclusion is a high one.").

C. Functional Claiming and 35 U.S.C. § 112, ¶ 6 (pre-AIA) / § 112(f) (AIA) [3]

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).

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

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[3] Because the applications resulting in the Asserted Patents were filed before September 16, 2012, the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

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 Commc'ns, L.L.C. v. Int'l Trade Comm'n*, 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).

D.   Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA) [4]

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 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.*,

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[4] Because the applications resulting in the Asserted Patents were filed before September 16, 2012, the effective date of the America Invents Act ("AIA"), the Court refers to the pre-AIA version of § 112.

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.

III. CONSTRUCTION OF AGREED TERMS

The parties have agreed to the following constructions set forth in their Amended Joint Claim Construction Chart Pursuant to P.R. 4-5(d) (Dkt. No. 104):

Term[5]	Agreed Construction
"line device" • '631 Patent Claim 10	"a hardware device that provides access to a communications service"
"allocation information indicating one or a plurality of allocated resource block(s) of uplink" • '919 Patent Claims 1, 10	"allocation information indicating one or a plurality of resource block(s) of uplink allocated to a mobile station"
"resource of downlink" • '919 Patent Claims 1, 10	downlink channel
"resources" • '919 Patent Claims 1, 10	downlink channels

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[5] For all term charts in this order, the claims in which the term is found are listed with the term but: (1) only the highest level claim in each dependency chain is listed, and (2) only asserted claims identified in the parties' Amended Joint Claim Construction Chart Pursuant to P.R. 4-5(d) (Dkt. No. 104) are listed.

Term[5]	Agreed Construction
"wherein: the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain" • '919 Patent Claims 1, 10	wherein: the indices of a plurality of the consecutive resource blocks are associated one-to-one with a plurality of the resources which are different in a frequency domain

The Court adopts the parties' agreed constructions.

IV.   CONSTRUCTION OF DISPUTED TERMS

The parties' positions and the Court's analysis as to the disputed terms are presented below.

A.   The '631 Patent

In general, the '631 Patent is directed to technology for facilitating software applications' communications over telephonic systems by improving the telephony software interface through object-oriented programming. '631 Patent col.1 ll.5–10, col.2 ll.46–59. The telephony software interface is the interface between the applications and a telephony system's line devices. *Id*. at col.1 ll.41–54, col.1 l.65–col.2 l.11. Line devices are used to access the telephony system's communication channels and it includes things such as a public switched telephone network (PSTN), integrated services digital network (ISDN), and T1/E1 lines. *Id*. at col.1 ll.41–54. Object-oriented programming utilizes software "objects" that include data as well as instructions for manipulating the data. Objects include the program components' attributes, relationships, and methods. *Id*. at col.2 ll.28–34.

With reference to Figure 3, reproduced and annotated by the Court, the patent describes an exemplary object-oriented interface layer (310, in blue) that acts an intermediary between

'631 Patent, Figure 3

FIG. 3

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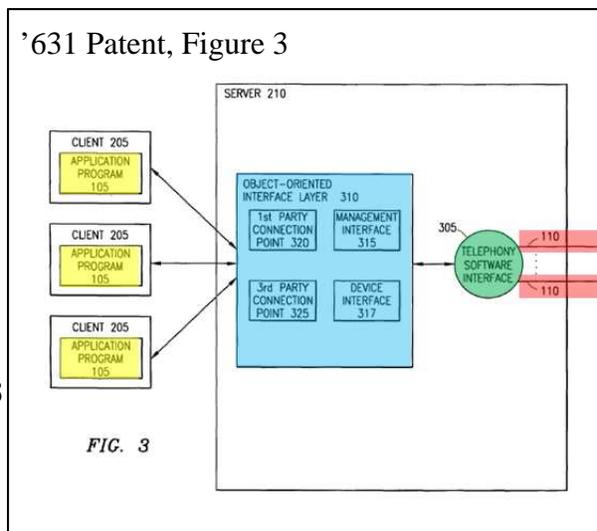
application programs (105, in yellow) and the telephony software interface (305, in green) to the line devices (110, in red). *Id*. at col.4 ll.42–65. This interface layer performs a number of functions meant to improve the system by removing the need to conform applications to the specification of the telephony software interface and by creating a single point of contact for the telephony software interface so as to reduce the message traffic between the interface and the applications. *Id*. at col.2 ll.25–28, col.2 ll.43–49, col.4 ll.31–41, col.4 l.56 – col.5 l.35.

The abstract of the '631 Patent provides:

The present invention is directed to a system, method, and apparatus for adding the benefit of object-oriented programming to conforming application programs to the specifications of telephony software interfaces and reducing the traffic load from messages generated and sent by line devices to application programs. An object-oriented interface layer is inserted between the application program which accepts objects from the application programs and causes the telephony software interface to perform a standard set of operations. From the standpoint of the telephony software interface, the object-oriented interface layer is the application program utilizing the line devices, thus causing the line devices to generate a single message to the object-oriented interface layer which distributes the message to the appropriate application programs. Accordingly, the traffic load caused by the generation of messages is reduced.

1. A method comprising the steps of:

abstracting model specific details of at least one line device from at least one application program at a dynamic link library included within an object-oriented interface;

receiving an application object from said at least one application program at said object-oriented interface layer;

converting said application object to an executable operation using said dynamic link library;

forwarding said executable operation from said object-oriented interface to said telephony software interface; and

performing said executable operation by said telephony software interface using said at least one line device, wherein said performing step further comprises the step of performing a function by a line device in response to said executable operation.

10. A method for transmitting messages from at least one line device to a plurality of applications, said method comprising the steps of:

generating, by a line device, a message including model specific information in an application independent format for at least one application program;

receiving said message from at least one line device at an object-oriented interface layer;

forwarding said message to at least one of a first party connection point and a third party connection point;

forwarding said message to appropriate first party application programs when said message is forwarded to said first party connection point;

forwarding said message to appropriate third party application programs when said message is forwarded to said third party connection point; and

performing an executable operation, configured using said model specific information, by a telephony software interface.

Claims 1 and 10 are reproduced here as representative claims.

A-1. "model specific information"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"model specific information" • '631 Patent Claim 10	"information about the particular line device"	"specifications for the model of the line device"

The Parties' Positions

Plaintiffs submit that "model specific information" is described and claimed as going

from the line device to the application. Dkt. No. 66 at 14–15. This, according to Plaintiffs, is in

contrast to the "model specific details" which are described and separately claimed as going from

the application to the line device. *Id*. at 15–16 (citing Claim 1). Plaintiffs argue that while the

"model specific details" may include specifications of the line-device model, the "model specific

information" does not necessarily include such specifications. *Id*. Instead, Plaintiffs contend, the

"model specific information" is information about the particular line device, such as whether it is

connected to a network. *Id*. at 15.

In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their

position: '631 Patent, at [57] Abstract, col.1 l.55 – col.2 l.16, col.2 ll.24–27, col.3 l.34 – col.4

l.32, col.4 ll.34–35, col.4 ll.50–53, col.5 ll.32–34.

Defendants respond that their proposed construction gives effect to the word "model" in

the "model specific information" and that Plaintiffs' proposed construction would improperly

flip the plain meaning of "model" to instead mean a "particular" device. Dkt. No. 78 at 29.

Defendants argue that contrary to Plaintiffs' representation, the '631 Patent neither teaches nor

claims sending model specific details from the application program. *Id*. at 29–30. Instead,

Defendants contend, the patent teaches that the details are abstracted, not sent. *Id*. at 30.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '631 Patent col.1 ll.55–64, col.3 ll.45–46.

Plaintiffs reply that the intrinsic record does not support a limitation requiring the model specific information to include the specifications for the model. Dkt. No. 83 at 7–8. Rather, Plaintiffs contend, the patent describes that the line device sends "useful" information. *Id.* (quoting '631 Patent col.5 ll.32–34). Plaintiffs reiterate that Defendants' proposed construction improperly ignores the difference between the "model specific details" of Claim 1, which the patent describes as the "specific technical details of the particular line device," and the "model specific information" of Claim 10. *Id.* at 8 (quoting '631 Patent col.3 ll.34–38, ll.45–46).

Analysis

The dispute turns on two main issues. First, the whether the model specific information is necessarily about the model or whether it includes information about the particular line device without reference to the model of that device. Second, whether the model specific information is necessarily the specifications for the model of the line device. The Court understands this term to mean information about the model of the line device, but the term is not coextensive with the specifications of the model.

To give effect to "model specific," "model specific information" must be construed as information about the model of the line device. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) ("claims are interpreted with an eye toward giving effect to all terms in the claim"). Construing "model specific information" as information about the particular line device fails to give effect to the "model specific" language.

Plaintiffs are correct that the patent describes messages flowing from the line device to an application through the objected-oriented interface layer as "contain[ing] useful information for

the application programs 105 utilizing the sending line device 110." This, however, does not specially define "model specific information" as "information about the particular line device." *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012) (requiring that the patentee "clearly express an intent to redefine the term" or to "deviate from the ordinary and accustomed meaning of a claim term"). Rather, "model specific information" plainly means information about the specific model.

But "model specific information" should not be conflated with the model specifications. To begin, the term "model specific information" is found in Claim 10 of the '631 Patent, a "method for transmitting messages from at least one line device to a plurality of applications." '631 Patent col.8 ll.8–9. The claim includes a line device generating a message that includes model specific information. *Id*. at col.8 ll.12–14. The message is received at an object-oriented interface layer. *Id*. at col.8 ll.15–16. And the message is forwarded to the appropriate application programs. *Id*. at col.8 ll.17–25. Thus, the "model specific information" flows from the line device to the application program.

The application program does not use the model specifications. The patent describes that model specifications (or "model-specific technical details") are abstracted in the telephony software interface. '631 Patent col.1 l.65 – col.2 l.11, col.3 ll.45–67. This abstraction "is advantageous because the application program 105 need not be aware of any of the specific details of the line device 110." *Id*. at col.4 ll.1–3; *see also*, *id*. at col.1 ll.55–64 (noting the failings of requiring the application program to know technical details of the line device), *id*. at col.3 ll.34–44 (same). So requiring the "model specific information" sent to the application programs to necessarily include model specifications improperly threatens to exclude an exemplary embodiment in which the application program specifically does not know the details

of the line device. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 865 (Fed. Cir. 2004) ("[a] construction that excludes a preferred embodiment is rarely, if ever, correct"). And Claim 1 refers to abstracting such details (at a dynamic link library in the object-oriented interface layer) as "abstracting model specific details." *Id.* at col.6 ll.43–46; *see also*, *id.* at col.7 ll.20–23 (Claim 4, using "model specific details" in a manner similar to Claim 1's use). So equating "model specific information" with model specifications ("model specific details") would equate two different terms without justification. *See CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("we must presume that the use of . . . different terms in the claims connotes different meanings").

Accordingly, the Court construes "model specific information" as follows:

- "model specific information" means "information about the specific model of the line device."

A-2.   "object-oriented interface layer"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"object-oriented interface layer" • '631 Patent Claim 10	No construction necessary. Plain and ordinary meaning. Alternative: • "object-oriented software that sits between user applications and a telephony software interface"	"an interface that establishes a session with a telephony software interface"

The Parties' Positions

Plaintiffs submit that under its plain meaning, an "object-oriented interface layer" is readily understood to have two characteristics, namely, it uses object-oriented programming and it forms an interface layer. Dkt. No. 66 at 17–18. Plaintiffs argue that Defendants' proposed

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construction improperly limits the term to a single function (establishing a session with a telephony software interface) and fails to account for the interface layer's object-oriented nature. *Id*.

In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '631 Patent, at [57] Abstract, col.1 ll.7–10, col.2 ll.46–50, col.4 ll.56–59, col.4 ll.61–65, col.5 l.22, col.5 ll.34–36.

Defendants respond that the '631 Patent expressly states that the "object-oriented interface layer is an interface which establishes a session with the telephony software interface." Dkt. No. 78 at 31 (quoting '631 Patent col. 4 ll.56–61). And Defendants further respond that they do not dispute that the "object-oriented interface layer" is object-oriented, but they contend that the Court should adopt the definition provided in the patent. *Id*. & n.17.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '631 Patent col.4 ll.56–64.

Plaintiffs reply that Defendants' proposed construction improperly focuses on one of several functions of the "object-oriented interface layer" that are described in the '631 Patent. Dkt. No. 83 at 8.

<u>Analysis</u>

The parties appear to dispute whether an "object-oriented interface layer" necessarily establishes a session with a telephony software interface and whether it is limited to that function. The Court does not understand that an "object-oriented interface layer" must establish a session with a telephony software interface or that it is limited to such a function.

The "object-oriented interface layer" is not specially defined in the patent as Defendants propose. The '631 Patent describes that—in "an exemplary software architecture embodying the

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present invention"—"[t]he object-oriented interface layer 310 is an interface which establishes a session with the telephony software interface 305." '631 Patent col.4 ll.46–61. That is, in the exemplary embodiment, the object-oriented interface layer establishes a session with the telephony software interface and performs a number of other listed functions in the embodiment. *Id.* at col.4 ll.61–65. But this does not define the term "object-oriented interface layer" generally, only what it does in the particular embodiment. *See Thorner*, 669 F.3d at 1366 ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that."). Therefore, the intrinsic record does not show that an "object-oriented interface layer" must establish a session with a telephony software interface.

Furthermore, the intrinsic evidence does not show that an "object-oriented interface layer" is limited to the function of establishing a session with an interface. The purported advantage of the object-oriented interface layer is not that it establishes a session, or that it performs any of the specific functions listed in the description of the exemplary embodiment. Rather, the advantage is that it incorporates object-oriented programming methodologies to facilitate communication between an application and a line device. '631 Patent col.1 ll.7–10, col.2 ll.52–59. Defendants do not dispute that the "object-oriented interface layer" is object-oriented and an interface, as those terms are ordinarily used. Dkt. No. 78 at 31 & n.17. Accordingly, the Court determines that "object-oriented interface layer" is not specially defined as, or limited to, an interface that establishes a session with a telephony software interface as Defendants propose. The Court determines that the term has the plain and ordinary meaning of its constituent words and needs no further construction.

A-3.   The First Party and Third Party Terms

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"first party connection point" • '631 Patent Claim 10	"an interface that receives messages for first party applications"	This term renders the claims indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2.
"first party application program" • '631 Patent Claim 10	"an application that receives messages pertaining to an individual line device"	This term renders the claims indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2.
"appropriate first party application programs" • '631 Patent Claim 10		
"first . . . party application program" • '631 Patent Claim 11		
"third party connection point" • '631 Patent Claim 10	"an interface that receives messages for third party applications"	This term renders the claims indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2.
"third party application program" • '631 Patent Claims 10, 11	"an application that receives messages pertaining to multiple line devices"	This term renders the claims indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2.
"appropriate third party application programs" • '631 Patent Claim 10		

Because the parties' arguments and proposed constructions with respect to these terms are related, the Court addresses the terms together.

The Parties' Positions

Plaintiffs submit "first party connection point," "first party application," and "appropriate first party application" are defined in the '631 Patent. Dkt. No. 66 at 18–20 (citing '631 Patent col.5 ll.40–44). According to Plaintiffs, "first party application" is used in the patent to denote an application that receives messages generated by and pertaining to individual line devices. *Id*. at

19–20 (citing '631 Patent col.5 ll.42–44). Plaintiffs contend that "first party connection point" is used in the patent to denote an interface that receives messages for first party applications. *Id*. at 18–19 (citing '631 Patent col.5 ll.40–44). Plaintiffs finally assert that an "appropriate" first party application is something that is reasonably ascertainable to one of ordinary skill in the art. *Id*. at 20.

Plaintiffs similarly submit that "third party connection point," "third party application," and "appropriate third party application" are defined in the '631 Patent. *Id*. at 19–21 (citing '631 Patent col.5 ll.47–55). According to Plaintiffs, "third party application" is used in the patent to denote "application programs [] which generally have global, system level perspective and involve most, if not all of the line devices." *Id*. at 20–21 (quoting '631 Patent col.5 ll.48–51). "Third party connection point" is used in the patent to denote an interface that receives messages for third party applications. *Id*. at 19 (citing '631 Patent col.5 ll.47–55).

In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '631 Patent col.5 ll.40–44, col.5 ll.47–55, fig.3.

Defendants respond that "first party application," and therefore "first party connection point," renders the claims indefinite because it is defined in the '631 Patent as an application that "***generally*** involve[s] individual line devices." Dkt. No. 78 at 31–32 (quoting '631 Patent col.5 ll.42–44, emphasis added by Defendants). Defendants further respond that "third party application," and therefore "third party connection point," renders the claims indefinite because it is defined in the '631 Patent as an application that "***generally*** [has] global, system level perspective and involve[s] ***most, if not all*** of the line devices." *Id*. (quoting '631 Patent col.5 ll.49–51, emphases added by Defendants). Defendants argue that "generally" and "most, if not all" are terms of degree, that the patent does not provide any standard for measuring that degree,

and therefore the terms render the claims indefinite. *Id.* And Defendants also argue the Plaintiffs'

proposed constructions are wrong because they do not comport with the definitions of the terms

provided in the patent. *Id.* at 32. Specifically, Defendants argue that Plaintiffs misinterpret "most,

if not all of the line devices" as "multiple line devices." *Id.* With respect to "appropriate" first

party and third party applications, Defendants submit that there is no guidance in the patent that

would inform whether a particular application is "appropriate" and therefore the "appropriate"

terms render the claims indefinite. *Id.* at 32–33.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support

their position: 631 Patent col.5 ll.37–40, col.5 ll.42–44, col.5 ll.49–51.

With respect to the "application" and "connection point" terms, Plaintiffs reply that the

'631 Patent's express definitions of the terms provide sufficient certainty to one of skill in the art

as to the scope of the claims. Dkt. No. 83 at 8 (citing Declaration of Robert Akl, D.Sc., in

Support of Plaintiffs' Opening Claim Construction Brief 8 (Dkt. No. 83-1 at 9) ("Akl Decl.")).

With respect to "appropriate . . . application programs," Plaintiffs reply that in the context of the

claim language and description, the "appropriate" application programs are the applications to

which the line-device message should be forwarded. *Id.* at 9 (citing Akl. Decl. 9 (Dkt. No. 83-1

at 10)).

Plaintiffs cite further **extrinsic evidence** to support their position: Akl. Decl. (Plaintiffs'

Ex. J, Dkt. No. 83-1). In response to Dr. Akl's declaration, Defendants cite further **extrinsic**

evidence to support their position: Declaration of Tipton Cole (Dkt. No. 105-1).

Analysis

The issues here are twofold. First, whether describing first party applications as

applications that "generally" involve individual line devices and third party applications as

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applications that "generally" involve "most, if not all" line devices renders the claims indefinite. Second, whether it is reasonably certain what constitutes an "appropriate" first party or third party application. The Court finds that Defendants have not shown either issue renders any claim indefinite.

The issue turns on the '631 Patent's approach to message-distribution. This approach can be understood in the context of the prior-art, in which a line device sends separate messages to each application program that is using the line device. The patent explains the prior-art approach:

> As each application program conducts operations on the various line devices, the line devices send messages to the application programs. In many cases, several application programs simultaneously perform operation on a single line device. Where the line device requires communication to the application programs, a separate message is sent to each application program. Sending a separate message to each application program results in excess traffic within the telephony software interface.

'631 Patent col.2 ll.36–46. The patent further explains the prior-art approach:

> Additionally, where the DLL 120 and TAPISRV 125 serve a number of application programs 105, more than one application program 105 may conduct operations on a line device 110. Responsive to certain events, the line device 110 send messages to the application programs 105. Where the line device 110 requires communication to the application programs 105, a separate message is generated and sent to each application program performing operations on the line device 110. Generating and sending a separate message to each application program 105 results in excess traffic within the telephony software interface.

Id. at col.4 ll.31–41.

The patent's approach to message-distribution, on the other hand, is meant to reduce the traffic in the telephony software interface by routing all line-device messages through the object-oriented interface layer rather than sending the messages to the application programs directly.

> From the standpoint of the Telephony Software Interface 305, the object-oriented interface layer 310 is the program utilizing line devices 110, even though application programs 105 are the programs which provide the information and data transmitted on the line devices. Accordingly, when a line device 110 needs to communicate information to the application program utilizing the line device, a single message is generated and directed towards the object-oriented interface

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layer 310. Because the messages contain useful information for the application programs 105 utilizing the sending line device 110, the object-oriented interface layer 310 must distribute the message to the appropriate application programs.

Id. at col.5 ll.24–36. The line-device messages are distributed to the "appropriate application programs" using a "First Party Connection Point" or a "Third Party Connection Point," depending on the application program. *Id*. at col.5 ll.37–59. In this context, the "appropriate application programs" are the applications to which the message is directed by the line device.

The patent states that the First Party Connection Point handles messages directed to "first party applications" which are characterized by their association with individual line devices:

> The First Party Connection Point 320 is an interface for receiving messages for application programs 105 which generally involve individual line devices 110, known as first party applications. A message from a line device 110 that needs to be distributed to a first party application is routed to the First Party Connection Point 320 which forwards the message to the appropriate application program 105.

Id. at col.5 ll.40–47.

The patent states that the Third Party Connection Point handles messages directed to "third party applications" which are characterized by their association with most or all of the line devices:

> The Third Party Connection Point 325 is an interface for receiving messages for application programs 105 which generally have global, system level perspective and involve most, if not all of the line devices 110, known as third party applications. Because third party applications have a global, system level perspective, messages from most, if not all of the line device[s] 110 are relevant to the proper operation of the third party application. Accordingly, any message received by the object-oriented interface layer 310 from a line device 110 is routed to the Third Party Connection Point 325. The Third Party Connection Point 325 then broadcasts the message to every third party application.

Id. at col.5 ll.47–59.

The Court understands the distinction between first party applications and third party applications to be their perspective with respect to the system. Their association with the line

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devices stems from this perspective. Third party applications have a global perspective; first party applications do not. This can be understood with reference to Figure 3, which depicts a system that includes a server 210 and multiple clients 205. A third party application program's perspective includes the entire system, and thus the third party application would be concerned "with most, if not all" of the line-device messages. A first party application program's perspective is limited to the client, and thus the first party application would be concerned with a limited subset of the line-device messages that generally come from an individual line-device associated with the application program.

The Court understands "generally" in the context of the '631 Patent's explanation of first party and third party applications to mean that the applicant recognized there are exceptions to the stated rules but that the rules apply notwithstanding the exceptions; namely, a first party application is associated with a single line device and a third party application is associated with most if not all of the line devices. The Court does not perceive any uncertainty in the meaning of "most, if not all" line devices. The plain meaning of this phrase is "most or all" line devices.

Accordingly, the Court construes the First Party and Third Party terms as follows:

- "first party connection point" means "an interface for receiving messages for first party application programs";

- "first party application program" means "application program that is associated with a single line device";

- "appropriate first party application programs" means "first party application programs to which the message is directed";

- "third party connection point" means "an interface for receiving messages for third party application programs";

- "third party application program" means "application program that is associated with most or all of the line devices"; and

- "appropriate third party application programs" means "third party application programs to which the message is directed."

A-4. "performing an executable operation, configured using said model specific information, by a telephony software interface"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"performing an executable operation, configured using said model specific information, by a telephony software interface" • '631 Patent Claim 10	"performing an executable operation, using particular information about the line device received in the message from the line device through a telephony software interface"	"the telephony software interface uses the model specific information when performing an executable operation"

The Parties' Positions

Plaintiffs submit that the order of operation of the method of Claim 10 of the '631 Patent, the description of the invention, logic, and the context of the other claims dictates that the executable operation is performed in an application program and not in the telephony software interface. Dkt. No. 66 at 21–22. Plaintiffs argue that each step of Claim 10 is performed only after the previous step is completed, and therefore they are performed in the order they are written. *Id.* at 21. Plaintiffs further argue that the model specific information is passed from the telephony software interface to an application program before the executable operation is performed using the model specific information. According to Plaintiffs it is the application program that has and uses the model specific information to perform the operation. *Id.* at 22. Plaintiffs asserts that, in the context of the description of the invention, the only logical reason to pass the model specific information to an application program is so the application program can use the information in performing an operation. *Id.* Plaintiffs note that the '631 Patent uses

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language distinct from the Claim 10 term at issue to separately claim the telephony software interface performing an executable operation. Therefore, the different language indicates that the executable operation of Claim 10 is not performed by the telephony software interface. *Id*. (citing Claim 1).

In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '631 Patent col.4 ll.59–61, col.5 ll.24–48, col.6 ll.56–57, col.8 ll.12–29.

Defendants respond that under the plain meaning of the claim language, the executable operation is performed by a telephony software interface. Dkt. No. 78 at 33. Defendants further respond that the '631 Patent teaches that the telephony software interface performs the executable operations in that it teaches that the "the object-oriented interface layer . . . causes the telephony software interface [] to perform a number of operations." *Id*. (quoting '631 Patent col.4 ll.61–65). Defendants submit that, in the course of prosecuting the application the led to the '631 Patent, the patentee explained that it is the telephony software interface that performs the executable operation, "Application objects are also received at the object-oriented interface, and based on the application object and the details of the specific line device, ***an executable operation*** is forwarded to the telephony software interface." *Id*. at 33–34 (quoting '631 Patent File Wrapper May 29, 2001 Amendment 6 (Dkt. No. 79-7 at 7), emphasis added by Defendants). Defendants argue the Plaintiffs' proposed construction of this term is inconsistent with Plaintiffs' proposed construction of "model specific information" in that Plaintiff proposes that "model specific information" in the "performing" term means "particular information about the line device" and otherwise proposes that "model specific information" means "information about the particular line device." *Id*. at 34.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '631 Patent, at [57] Abstract, col.2 ll.51–59, col.4 ll.61–65; '631 Patent File Wrapper May 29, 2001 Amendment (Defendants' Ex. 4-B, Dkt. No. 79-7).

Plaintiffs reply that while there is no dispute that the executable operation of Claim 1 occurs in the telephony interface as the messages are passed to the line devices, Claim 10 is different because the messages are passed to the application programs. Dkt. No. 83 at 9. Plaintiffs further reply that Defendants cite intrinsic evidence pertaining to the Claim 1 embodiment in an attempt to improperly limit Claim 10. *Id.* Thus, Plaintiffs contend, the operation of Claim 10, in which the message is sent from the line device to the application, is performed in the application.

<u>Analysis</u>

The issue here distills to whether the telephony software interface or the application program performs the executable operation. The Court agrees with Defendants that the plain meaning of the claim language dictates that the telephony software interface performs the executable operation.

Commas have consequences. A plain reading of the limitation indicates that the telephony software interface performs the executable operation. The phrases "performing an executable operation" and "by a telephony software interface" are separated by the comma clause "configured using said model specific information." Reading this plainly, the Court understands that the "configured" comma clause simply modifies the "executable operation" that is performed "by a telephony software interface." That is, the executable operation performed is configured using the model specific information. Thus, under this plain reading, the Court

understands the limitation to mean "performing an executable operation by a telephony software interface using the model specific information."

The Court does not understand the surrounding claim language or the description of the invention to preclude, or even counsel against, such a plain reading. For example, one of the exemplary functions of the object-oriented interface is to cause the telephony software interface to perform a "Drop Call" operation. '631 Patent col.4 ll.59–65. So, even accepting Plaintiffs' contention that the steps of Claim 10 must be performed in order, the last step in the method may be to invoke an operation to end the call.[6] Indeed, Plaintiffs have not identified any exemplary embodiment in which the application executes an operation using the model specific information.

Accordingly, the Court construes "performing an executable operation, configured using said model specific information, by a telephony software interface" as follows:

- "performing an executable operation, configured using said model specific information, by a telephony software interface" means "performing an executable operation by a telephony software interface using the model specific information."

B.   The '191 Patent

In general, the '191 Patent is directed to technology for sending attachments with text messages. '191 Patent col.1 ll.12–16, col.3 ll.33–46. With reference to Figure 3, reproduced here

'191 Patent, Figure 3

_____

[6] The Court is not holding that the steps of Claim 10
While some of the steps may logically proceed in the
is clear that Claim 11, which depends from Cla
unregistering the application programs with the o
logically follow the steps of Claim 10 in the order recit

30
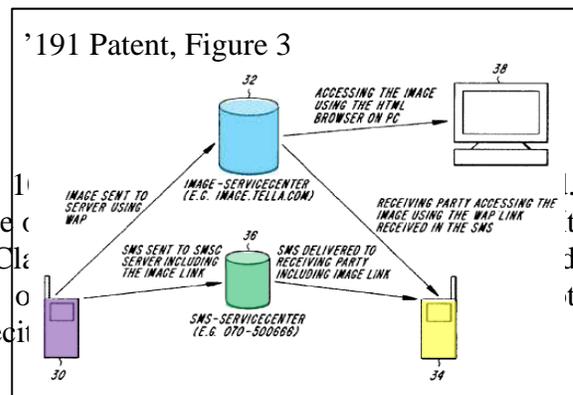
and annotated by the Court, the patent describes an exemplary system in which a text message and attachment are sent to a recipient (34, in yellow), with the text message going to the recipient through a text-message server (36, in green) and the attachment going to the recipient through an attachment server (32, in blue). *Id.* at col.5 ll.20–36. The sender (30, in purple) adds information to the message regarding the address of the attachment server. *Id.* at col.5 ll.9–19, col.5 ll.33–48. The recipient may use this address information (e.g., a link) to download the attachment. *Id.* at col.5 ll.48–55.

The abstract of the '191 Patent provides:

Methods and systems for transmitting attachments to text messages without turning terminals into e-mail clients are described. When an attachment is to be transmitted, an address of an attachment server is appended to the text message. The text message is then forwarded to the intended recipient, e.g., via an SMS server, while the attachment is sent to the attachment server. Upon receipt of the text message, the recipient can then download the attachment from the attachment server using the address included in the text message.

17. A mobile station comprising:
a processor for associating a text message with an attachment, the text message being addressed to a receiving terminal having a phone number associated with it, the addressing being based on the phone number of the receiving terminal, and for adding information to the text message that identifies a server; and
a transceiver for sending the attachment to a server and for transmitting the text message to the receiving terminal's phone number based address.
18. The mobile station of claim 17, comprising a memory wherein the server identifying information is stored.
19. The mobile station of claim 17, wherein the server identifying information is a uniform resource locator (URL).
20. The mobile station of claim 17, further comprising:
means for querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message.

Claims 17 through 20 are reproduced here as representative claims.

B-1. "text message"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"text message" • '191 Patent Claim 17	No construction necessary. Plain and ordinary meaning.	"an electronic message carrying user-readable content that is limited to text"

The Parties' Positions

Plaintiffs submit that the meaning of "text message" is readily apparent to both lay persons and those of ordinary skill in the art, and therefore does not require construction. Dkt. No. 66 at 9. Defendants respond that "text message" should be construed as it would be understood in the context of the '191 Patent and as of 1999, the time of the invention. Dkt. No. 78 at 34–35. Defendants argue that a lay juror in 2016 could misunderstand "text message" to include information not found in a text message, as that term was understood in 1999. *Id*. at 35.

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '191 Patent col.1 ll.24–26, col.3 ll.4–11, col.4 ll.63–67. **Extrinsic evidence**: *Text Messaging*, Wikipedia, https://en.wikipedia.org/wiki/Text_ messaging (Defendants Ex. 5-C, Dkt. No. 80-1).

Plaintiffs reply that the issue is whether the meaning of "text message" is limited to user-readable content. Dkt. No. 83 at 5. Plaintiffs contend that at the time of the invention, text messages contained fields that were not part of the user-readable content. *Id*. Plaintiffs cite further **intrinsic evidence** to support their position: '191 Patent col.5 ll.20–23.

Analysis

The issue here is whether a text message may carry information other than user-readable text. The Court understands that the plain and ordinary meaning of "text message," as reflected in the '191 Patent, is not limited to user-readable text.

The Court agrees with Defendants that "text message" must be understood as of the time the application for the '191 Patent. But based on the record, the Court does not understand the term "text message" to contain Defendants proposed limitations. For example, the Court understands that the "text message" of the patent includes, but is not limited to, the SMS messages described in the patent. '191 Patent col.1 ll.12–27, col.7 ll.11–20. These messages include information that is not found in the user-readable portion of the message. For instance, an SMS message originating from a mobile device includes, as part of its overhead, the address of the service center assigned to the mobile and an identification of the intended recipient of the message. '191 Patent col.1 ll.46–50, col.2 ll.23–26. Further, the patent explains that the SMS message has a text "portion" indicating that the message is not coextensive with the text of the message. *Id*. at col.5 ll.29–33. The patent explains that the text message may include a "link" to the attachment server, indicating that that message may contain more than just "text." *Id*. at col.5 ll.48–52.

Accordingly, the Court finds that "text message" is not limited to user-readable text, as Defendants' propose, that it has its plain and ordinary meaning, and that it does not need further construction.

B-2. "attachment"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"attachment" • '191 Patent Claim 17	No construction necessary. Plain and ordinary meaning.	"a file that is separate from the text message"

The Parties' Positions

Plaintiffs submit that "attachment" has a widely accepted plain and ordinary meaning and does not require construction. Dkt. No. 66 at 9–10. Plaintiffs also submit that the '631 Patent

discloses this concept, which was well known at the time of the invention, in the context of e-mail. *Id*. (citing '631 Patent col.3 ll.4–5). Plaintiffs argue that Defendants' proposed construction improperly injects ambiguity and complexity into the term in that it is unclear what it means for a file to be "separate" from the text message. *Id*. at 10. Plaintiffs further argue that there is nothing in the intrinsic evidence that justifies straying from the plain and ordinary meaning of "attachment" and defining it as a file separate from the text message. *Id*. In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '191 Patent col.3 ll.4–5.

Defendants respond that construing "attachment" as that term is used in the context of e-mail would improperly exclude the exemplary embodiment in which a link to the "attachment" is part of the text message but the linked-to file is not itself part of the message. Dkt. No. 78 at 35–36 (quoting '191 Patent col.3 ll.34–46). In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '191 Patent col.3 ll.34–46. **Extrinsic evidence**: Julie K. Peterson, *The Telecommunications Illustrated Dictionary* (2d ed. 2002) ("attachment") (Defendants' Ex. 5-D, Dkt. No. 80-2).

Plaintiffs reply that Defendants' proposed construction would improperly include files that are not associated with the text message, so long as they are separate from the text message. Dkt. No. 83 at 5. Plaintiffs contend that the patent does not require that the text and attachment be transmitted independently of one another, regardless of where each is received. *Id*.

Analysis

The issue is whether an "attachment" is necessarily separate from the text message at all points along the transmission path. The Court does not find the intrinsic evidence to require such a limitation.

The Court understands that "attachment" is used in the '191 Patent according to its ordinary and customary meaning. For instance, the term is used in the context of contrasting e-mail and text messages with respect to their ability to communicate attachments as part of the message:

> With the advent of the Internet, e-mail having multimedia attachments is a service that is growing in popularity with consumers. Today, although the SMS techniques described above provide functionality which is comparable to the text messaging attribute of e-mail, there exists no mechanism which would permit transmission or reception of an attached file, e.g., image files or audio files, by a remote, wireless terminal.

'191 Patent col.3 ll.4–11. Thus, while the patentee noted the deficiencies of then-existing SMS technology with respect to communicating attachments, it did not redefine "attachment" as anything other than its plain and ordinary meaning. *See Thorner v. Sony Comput. Entm't Am., LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) ("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.").

Further, the Court understands that an attachment may be an integral part of the message to which it is attached. *See, e.g.*, Julie K. Peterson, *The Telecommunications Illustrated Dictionary* 71 (2d ed. 2002) ("attachment") (Dkt. No. 80-2 at 5.) But the Court understands that an "attachment" does not have to be embedded in the message to which it is attached. *See id.* (noting that "the message text part of many email systems cannot transcribe or transmit 8-bit binary code" so that binary files have to be sent as attachments). Thus, the Court does not understand any exemplary embodiment of the '191 Patent to be excluded under the plain and ordinary meaning of "attachment."

Accordingly, the Court determines that "attachment" is not limited such that it is separate from the text message, as Defendants' propose. The Court finds that "attachment" has its plain and ordinary meaning and that it does not need further construction.

B-3. The Server Terms: "adding information to the text message that identifies a server," "sending the attachment to a server," and "transmitting the text message to the receiving terminal's phone number based address"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"adding information to the text message that identifies a server" • '191 Patent Claim 17	No construction necessary. Plain and ordinary meaning. PanOptis agrees that the two claim references to "a server" can be the same server.	Indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2 unless PanOptis agrees that the two claim references to "a server" are the same server. Provisional construction: • "inserting a server identity in the user-readable content of the text message"
"sending the attachment to a server" • '191 Patent Claim 17	No construction necessary. Plain and ordinary meaning. PanOptis agrees that the two claim references to "a server" can be the same server.	Indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2 unless PanOptis agrees that the two claim references to "a server" are the same server. Provisional construction: • "sending the attachment to the server separately from transmitting the text message"
"transmitting the text message to the receiving terminal's phone number based address" • '191 Patent Claim 17	No construction necessary. Plain and ordinary meaning.	"transmitting the text message so that the text message, including the information identifying the server, is configured to arrive at the receiving terminal's phone number based address"

Because the parties' arguments and proposed constructions with respect to these terms are related, the Court addresses the terms together.

The Parties' Positions

As to the term "adding information to the text message that identifies a server," Plaintiffs submit its meaning is readily apparent to a lay person and does not need to be construed. Dkt. No. 66 at 10. Plaintiffs further submit that the "server" in this term does not need to be the same server as the one separately recited in Claim 17. *Id*. Plaintiffs argue that Defendants' proposed construction improperly conflicts with the claim language and strays from the plain meaning of the term because it requires the server-identifying information be in the "user-readable content of the text message." *Id*.

With respect to the term "sending the attachment to a server," Plaintiffs submit that the term does not need to be construed, and that Defendants' provisional construction improperly requires that the attachment be sent "separately from transmitting the text" without any support in the intrinsic record for such a limitation. *Id*. at 11. Plaintiffs reiterate that Defendants' server-based indefiniteness position is unsupported by the patent. *Id*.

With respect to the term "transmitting the text message to the receiving terminal's phone number based address," Plaintiffs submit that the term consists of words with plain and ordinary meanings. Plaintiff asserts that the meaning of the combination of words is also readily apparent. *Id*. at 11–12. Plaintiffs argue that Defendants' proposed construction changes the meaning of the term rather than clarifies its meaning. *Id*. at 12. Plaintiffs contend that Defendants' proposed construction improperly imports limitations from the exemplary embodiments into the claims because it requires the text message be configured to include information identifying the server and be configured to arrive at the receiving terminal's phone number based address. *Id*. In

addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '191 Patent col.3 ll.39–40, col.4 l.27–col.5 l.36.

Defendants respond that the two recited servers in Claim 17 must be the same server or the claim is inoperable. Dkt. No. 78 at 36. Defendants argue that the '191 Patent states that the "attachment" is sent to a server and that the server's address is separately sent to the user in a text message so that the user can retrieve the attachment. *Id*. (citing '191 Patent col.5 ll.48–55, fig.3). According to Defendants, if the server identified in the text message is not the same server as that storing the attachment, the user will not be able to retrieve the attachment. *Id*. at 36–37. Defendants contend that this identity of servers was recognized by the examiner and the patentee in the prosecution history. *Id*. & n.28.

With respect to "adding information to the text message that identifies a server" and "transmitting the text message to the receiving terminal's phone number based address," Defendants respond that taken together, these terms allow the user to retrieve the attachment from the server. *Id*. at 37. Defendants contend that in prosecuting the application that led to the '191 Patent, the patentee explained that the text message identified the server where the attachment was sent. *Id*. at 37–38 (quoting '191 Patent File Wrapper June 30, 2004 Amendment 14 (Dkt. No. 79-9 at 12)). Defendants contend that one of the reasons the examiner allowed the patent was that the claimed invention retrieves the attachment from the server using the server identification in the text message. *Id*. at 38 (quoting '191 Patent File Wrapper Notice of Allowability 2–3 (Dkt. No. 79-9 at 3–4)). Defendants argue that the construction of the "transmitting" term must make clear that the server-identifying information reaches the recipient phone or the claim is inoperable. *Id*. Defendants also argue the "adding information" term must

be construed to clarify that the server-identifying information be part of the text message's readable content, else the claim is inoperable. *Id*. at 38–39.

With respect to "sending the attachment to a server," Defendants respond that the essence of the '191 Patent's invention is that it sends the attachment separate from the text message—and that the problem the invention solved was the inability to send a text message and attachment together. *Id*. at 39–40. Defendants argue the separation of the attachment from the text message is reflected in the claims, which separately recite "sending the attachment" and "transmitting the text message." *Id*. at 39. Defendants further argue certain limitations are rendered nonsensical if the attachment and text message are sent together, namely, the steps of "associating a text message with an attachment," and "adding information to the text message that identifies a server" that holds the attachment would not be necessary if the attachment is part of the same transmitted data unit as the text message. *Id*. at 40.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '191 Patent at [57] Abstract, col.1 ll.43–54, col.3 ll.41–46, col.5 ll.22–25, col.5 ll.30–34, col.5 ll.48–55, fig.3; '191 Patent File Wrapper Notice of Allowability (Defendants' Ex. 5-B, Dkt. No. 79-9 at 2–5), June 30, 2004 Amendment (Defendants' Ex. 5-B, Dkt. No. 79-9 at 6–14.

Plaintiffs reply that Defendants' proposed constructions requiring a single server excludes the exemplary embodiment depicted in Figure 3 of the '191 Patent. That embodiment shows one server for the text and a second server for the attachment. Dkt. No. 83 at 5–6. Plaintiffs assert that the claim allows the attachment server and text server to be the same server or be separate servers. Plaintiffs assert that this is not indefinite. *Id*.

With respect to "adding information to the text message that identifies a server," Plaintiffs reply that nothing in the intrinsic record justifies construing the claim to require the information be in the user-readable portion of the text message. *Id.* at 7. Plaintiffs contend that at the time of the information, text messages included information that was not part of the user-readable content. *Id.* (citing '191 Patent col.5 ll.20–33.)

With respect to "sending the attachment to a server," Plaintiffs reply that Claim 17 expressly recites associating the attachment and the text message and that "transmitting" and "sending" are not used in the claim to indicate that text message and attachment are separately sent, but rather to indicate the text message and attachment take different paths to the receiving phone. *Id.*

With respect to "transmitting the text message to the receiving terminal's phone number based address," Plaintiffs reply the term is unambiguous and Defendants' proposed construction improperly attempts to define the claimed invention by the specification rather than by the claims. *Id.* at 6. Plaintiffs contend that what happens at the receiving phone is irrelevant to Claim 17, which is directed to a sending phone, and that Defendants' proposed construction would limit that claim based on what happens at the receiving phone without justification for such a limitation in the intrinsic record. *Id.*

<u>Analysis</u>

There are four main issues in dispute with respect to these terms. First, whether the two instances of "a server" recited in Claim 17 necessarily refer to the same server. Second, whether the server-identifying information is necessarily in the user-readable content of the text message. Third, whether the attachment is necessarily sent separately from transmitting the text message.

Fourth, whether the claim requires that the server-identifying information reaches the recipient phone.

To begin, the Court does not understand that the two instances of "a server" must refer to the same server. The plain meaning of the claim language does not support such a construction. Defendants' reliance on the examiner's Reasons for Allowance to support such a limitation is unavailing because an examiner's unilateral statement cannot alone work a disclaimer to limit the claims. *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1345–47 (Fed. Cir. 2005). The patentee only described the prior art in broad terms, therefore, nothing the patentee said in the prosecution history was used to distinguish the invention from that prior art. The patentee did not make a disavowal of scope to justify the same-server limitation. *Omega Eng'g, Inc. v. Raytek Corp.,* 334 F.3d 1314, 1325–26 (Fed. Cir. 2003) ("for prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable"); *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013) ("Where an applicant's statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable."). Finally, there is no compelling reason to believe the claim is inoperable if the two instances of "a server" do not refer to the same server. For example, the Court understands that the invention can operate by sending the attachment to one server and that server forwarding the attachment to a second server identified in the text message. Even if the exemplary embodiments can be interpreted such that the two servers would be the same, it is the claims, and not the preferred embodiments, that define the scope of the invention. *See Thorner*, 669 F.3d at 1366 ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read

limitations from the specification into claims; we do not redefine words. Only the patentee can do that.").

Similarly, the Court rejects Defendants' proposal to require the server-identifying information be inserted into the user-readable content of the text message. As set forth above, the Court does not understand a "text message" to be only user-readable text. And the Court does not understand the plain meaning of "adding information to the text message" to necessarily require that the information be inserted into the user-readable content of the message. Neither the prosecution history statements cited by Defendants nor the descriptions of the exemplary embodiments justify importing such a limitation into the claims. *See Salazar*, 414 F.3d at 1345–47; *Omega Eng'g*, 334 F.3d at 1325–26; *Thorner*, 669 F.3d at 1366. Indeed, the patent explains that the server-identifying information may be "appended" to the text message. '191 Patent col.3 ll.39–41. While "inserting" and "appending" both constitute "adding," the Court does not understand "inserting" and "appending" to be synonymous. The patent describes that in an exemplary embodiment, the recipient may receive "a message containing the text message, the link to the server 32 where the [attachment] is stored and, optionally, a file type associated with the attachment." *Id*. at col.5 ll.48–52. This indicates that the "link"—the server-identifying information—is not necessarily inserted into the user-readable content of text message. Thus, Defendants' proposed construction threatens to exclude the embodiment, and a "construction that excludes a preferred embodiment is rarely, if ever, correct." *C.R. Bard, Inc. v. United States Surgical Corp.*, 388 F.3d 858, 865 (Fed. Cir. 2004).

With respect to "sending the attachment to a server" and "transmitting the text message to the receiving terminal's phone number based address," the Court finds that these limitations do not require the attachment and text message be sent from the mobile separately or that the text

message actually reach the receiving terminal. Even if the exemplary embodiments show the attachment and text message separately issuing from the mobile, that alone is not sufficient to read the limitation into the claims. *Thorner*, 669 F.3d at 1366 ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.").

Further, the Court does not understand separately reciting sending and transmitting means that they must be distinct. *See, e.g.*, *In re Kelley*, 305 F.2d 909, 915–16 (C.C.P.A. 1962) ("The fact that one or more structural elements performing more than one function are common to the mechanisms which are recited separately in the claims does not prevent the claims from being sufficiently supported by the disclosure."); *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308,1320 n.9 (Fed. Cir. 2003) ("we see no reason why, as a matter of law, one claim limitation may not be responsive to another merely because they are located in the same physical structure"); *Powell v. Home Depot*, 663 F.3d 1221, 1231–32 (Fed. Cir. 2011) (rejecting the argument that a claim "can only be infringed by a device that has separate structures corresponding to the distinct claim elements"). Indeed, Claim 20, which depends from Claim 17, indicates the attachment may be "transmitted ***with*** the text message." '191 Patent col.8 ll.62–65 (emphasis added). Critically, the Court does not find the invention addresses the failings of the prior art by sending the message and the attachment independently from the mobile. Rather, the invention teaches that the text message and attachment reaching the recipient via different paths.

Finally, Claim 17 is directed to a component of the described embodiments: the sending mobile station. The claim is directed to a processor for associating an attachment with and

adding server-identifying information to a text message. The claim is further directed to a transceiver that is configured to transmit the text message to a particular address. The claim is not directed to receipt of the text message or the associated attachment. The Court declines Defendants' invitation to inject any receipt limitations into the Claim.

Accordingly, the Court rejects Defendants' proposed limitations of (1) requiring the two instances of "a server" to refer to the same server, (2) "inserting a server identity in the user-readable content of the text message," (3) "separately from transmitting the text message," and (4) "configured to arrive at the receiving terminal's phone number based address." Each of the terms "adding information to the text message that identifies a server," "sending the attachment to a server," and "transmitting the text message to the receiving terminal's phone number based address" has its plain and ordinary meaning, and does not need further construction.

B-4.   "means for querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"means for querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message" • '191 Patent Claim 20	35 U.S.C. § 112, ¶ 6. **Structure**: Querying algorithm and/or equivalents thereof, as shown in Fig. 2 and described in col./line 5:4-15 **Function**: querying a user regarding whether to transmit the attachment with the text message	35 U.S.C. § 112, ¶ 6. Indefinite. **Structure**: Indefinite due to lack of sufficient structure disclosed. **Function**: "querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message"

The Parties' Positions

Plaintiffs submit that at Figure 2 and the accompanying text in the '191 Patent provides structure for querying the user regarding whether the attachment is to be transmitted with the text

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message. Dkt. No. 66 at 12–13. Specifically, Plaintiffs submit that the patent states that "the terminal can ask the user whether an attachment file should be included" or that "a menu selection item or keypad stroke combination may be invoked by the user (without prompting) to add the attachment." *Id.* (quoting '191 Patent col.5 ll.9–13). In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '191 Patent col.3 ll.55–58, col.5 ll.9–13, fig.2.

Defendants respond that the '191 Patent does not meet § 112, ¶ 6's standard for disclosure of a structure for a computer-implemented function and is therefore indefinite. Dkt. No. 78 at 40–41. In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '191 Patent col.5 ll.4–19.

Plaintiffs reply that the '191 Patent's algorithm connotes sufficient structure. Dkt. No. 83 at 7 (citing Akl Decl. 7–8 (Dkt. No. 83-1 at 8–9)). Plaintiffs cite further **extrinsic evidence** to support their position: Akl. Decl. (Plaintiffs' Ex. J, Dkt. No. 83-1).

In response to Dr. Akl's declaration, Defendants cite further **extrinsic evidence** to support their position: Declaration of Tipton Cole (Dkt. No. 105-1).

Analysis

The issue is whether the '191 Patent adequately discloses an algorithm for querying the user regarding whether the attachment is to be transmitted with the text message. The Court determines that it does. Defendants have failed to prove that Claim 20 is indefinite.

Figure 2 of the '191 Patent, reproduced here and annotated by the Court, is a flowchart depicting a method for transmitting messages with attachments. '191 Patent col.3 ll.56–58, col.5 ll.4–19. The flow is described as follows:

> According to exemplary embodiments of the present invention, an advanced messaging application provides the capability to attach such files to an SMS

message for routing within the radiocommunication system. For example, with reference to the exemplary method of FIG. 2, consider that a user first creates a conventional SMS message in his or her terminal at step 20. ***Then, before the user sends the SMS message, the terminal can ask the user whether an attachment file should be included at step 22. Alternatively, a menu selection item or keypad stroke combination may be invoked by the user (without prompting) to add the attachment.*** If the user opts not to attach a file to the SMS message, then the SMS message is transmitted conventionally at step 24, i.e., in the manner described above with respect to FIG. 1. Otherwise, as indicated generally at step 26, certain information is added to the SMS message, which is forwarded to the intended recipient, and the attachment is sent to a special server for retrieval by the recipient of the SMS message.

'191 Patent, Figure 2
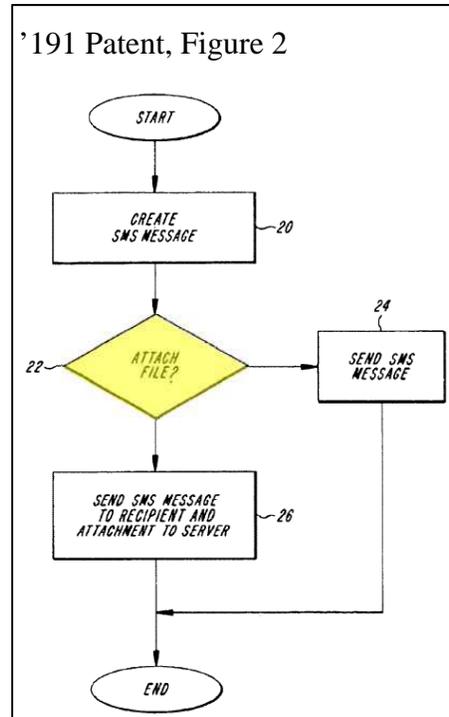
Id. at col.5 ll.4–19 (emphasis added). Thus, the query is depicted as a decision point (22, in yellow) in the flow chart. The input of the decision point is connected to the output of the "CREATE SMS MESSAGE" process (20) and the output of the decision point directs to the "SEND SMS MESSAGE" process (24) in the event of a "no" and to the "SEND SMS MESSAGE TO RECIPIENT AND ATTACHMENT TO SERVER" process (26) in the event of a "yes." The decision-point query may be resolved in three different ways. First, the terminal can prompt the user, by which the user can respond to add an attachment (or not). Second, the terminal can provide a menu by which the user may select an item to add the attachment (or not). Third, the terminal can provide a keypad stroke combination by which the user can add the attachment (or not).

This disclosure satisfies the structure-disclosure requirement of 35 U.S.C. § 112, ¶ 6. To satisfy § 112, ¶ 6 for a computer-implemented means-plus-function limitation the 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." *Typhoon*

Touch Techs., Inc. v. Dell, Inc., 659 F.3d 1376, 1385 (Fed. Cir. 2011). The required level of detail of the disclosure "depends on the subject matter that is described and its role in the invention as a whole, in view of the existing knowledge in the field of the invention." *Id*. "A description of the function in words may disclose, at least to the satisfaction of one of ordinary skill in the art, enough of an algorithm to provide the necessary structure under §112, ¶ 6." *Id*. at 1386 (quotation marks omitted).

Here, the function is a simple query to a user. It is described to one of skill in the art of computer-implemented radio communications involving message processing at client and server levels according to different messaging protocols. *See, e.g.*, col.1 l.17 – col.3 l.30 (GSM SMS messaging, IMAP4 and POP3 email), col.5 l.20 – col.6 l.4 (WAP and HTTP).[7] As such, the disclosed algorithms are sufficient "for a person of skill in the field to provide an operative software program for the specified function"—and are therefore adequate under § 112, ¶ 6. *Id*. at 1385; Akl. Decl. ¶ 28 (Dkt. No. 83-1 at 8–9).

The Court does not find the statements of Defendants' expert, Mr. Cole, to show that the claim is indefinite. Mr. Cole does not opine that the query steps are not carried out by known computer-implemented operations or that they are not readily implemented by persons of skill in computer programming. *See* Cole Decl. ¶¶ 11–16 (Dkt. No. 105-1 at 3–5). Rather, Mr. Cole states that the patent does not provide an algorithm for posing a question to a user and receiving the response and relies on one of ordinary skill in the art to create such an algorithm. *Id*. at ¶ 15 (Dkt. No. 105-1 at 5). Mr. Cole states that the claim requires that the computer pose a question to

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[7] Both Plaintiffs' and Defendants' experts agree that "a person of ordinary skill in the art would have an undergraduate degree in Electrical Engineering, Computer Science, or Computer Engineering, or a related field, and around two years of experience in the design, development, and/or testing of cellular networks" or equivalent combination of education and experience. Akl. Decl. ¶ 18 (Dkt. No. 83-1 at 6); Cole Decl. ¶ 8 (Dkt. No. 105-1 at 2).

a user and that the user answer it and that "keypad stroke combination" and "menu selection items" discussed in the patent are not questions. *Id*. First, the Court rejects Mr. Cole's limited understanding of "query." The context of the patent shows that "query" is best understood as an invitation to provide particular information. The patent explains that the system can directly ask for the information, provide for entry of the information through a keypad stroke combination, and provide for entry of the information through a menu. Second, given the level of skill in the art, the Court determines that, similar to the disclosure in *Typhoon Touch*, the disclosure of the '191 patent is an in-prose algorithm sufficient for one of skill in the art. *See Typhoon Touch*, 659 F.3d at 1386.

Accordingly, the Court construes "means for querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message" as follows:

- **function**: "querying a user of the mobile station regarding whether the attachment is to be transmitted with the text message"

- **structure**: Item 22 in Figure 2, as described at col.5 ll.4–19.

C.   The '919 Patent

In general, the '919 Patent is directed to technology for improving how a base station in a mobile communication system acknowledges messages sent to the base station from mobile devices. '919 Patent col.1 ll.21–32, col.2 ll.46–67. In the prior art, a base station processes data sent from a mobile (in uplink) to identify errors in the transmission and then sends a response (in downlink) to the mobile to acknowledge an error-free receipt (the response is an "ACK") or to indicate that there was an error in the transmission (the response is a "NACK"). *Id*. at col.1 ll.21–32. The response signal is sent via a downlink communication resource (a downlink control channel) that can be determined based on the uplink communication resource (resource blocks,

or "RBs") used by the mobile to send the uplink data. It can be determined without the need to separately report the downlink control channel allocated to the mobile. *Id.* at col.1 ll.33–42. Uplink resource blocks are frequency bands. *Id.* at col.1 ll.61–65, fig.1. Downlink control channels are also frequency bands. Downlink control channels may comprise more than one band and may be spread and code-multiplexed so that more than one downlink control channel uses a particular frequency band. *Id.* at col.1 l.65 – col.2 l.10 & fig. 2 (spread/code-multiplexed), col.21 ll.27–35 & fig.22 (not spread/code-multiplexed). The invention of the '919 Patent purports to improve the frequency diversity of the mapping of response signals to downlink communication resources. *Id.* at col.2 ll.53–67.

With reference to Figures 1, 3 and 6, reproduced below and annotated by the Court, the patent describes a particular frequency-distributed mapping of response signals to code-multiplexed downlink control channels with a repetition factor of 2. *Id.* at col.7 ll.35–65, col.21 ll.27–39. Figure 1 depicts a mapping of uplink resource blocks to frequency bands. *Id.* at col.1 ll.61–65, col.3 l.4. Figure 3 is a table showing an association between the uplink resource blocks (e.g., RB#1, RB#2) and downlink control channels (e.g., CH#1, CH#2). *Id.* at col.2 ll.11–3 (stating they are "associated one by one"). Figure 6 depicts a mapping of downlink control channels to frequency subcarriers (e.g., f_1, f_2) grouped in four frequency bands (1: f_1–f_4, 2: f_9–f_{12}, 3: f_{17}–f_{20}, 4: f_{25}–f_{28}). *Id.* at col.7 ll.35–65. The control channels "are mapped to different frequency bands in a distributed manner." *Id.* at col.7 ll.35–39. One of the advantages of this distributed mapping is that it prevents the response signals to uplink data transmitted using consecutive resource blocks from being "concentrated in identical bands." *Id.* at col.7 ll.49–53; *see also*, *id.* at col.1 l.65 – col.2 l.34 & fig.2 (describing a mapping that results in identical-band concentration). The patent depicts various other distributed mapping patterns that have various

advantages. *See, e.g., id*. at col.8 ll.36 – col.9 l.25 & fig.7 (different mapping patterns for different control channels), col.9 ll.29 – col.10 l.11 & fig.8 (different mapping patterns for different cells in a cellular network an different mapping patterns for different sectors in a cell).
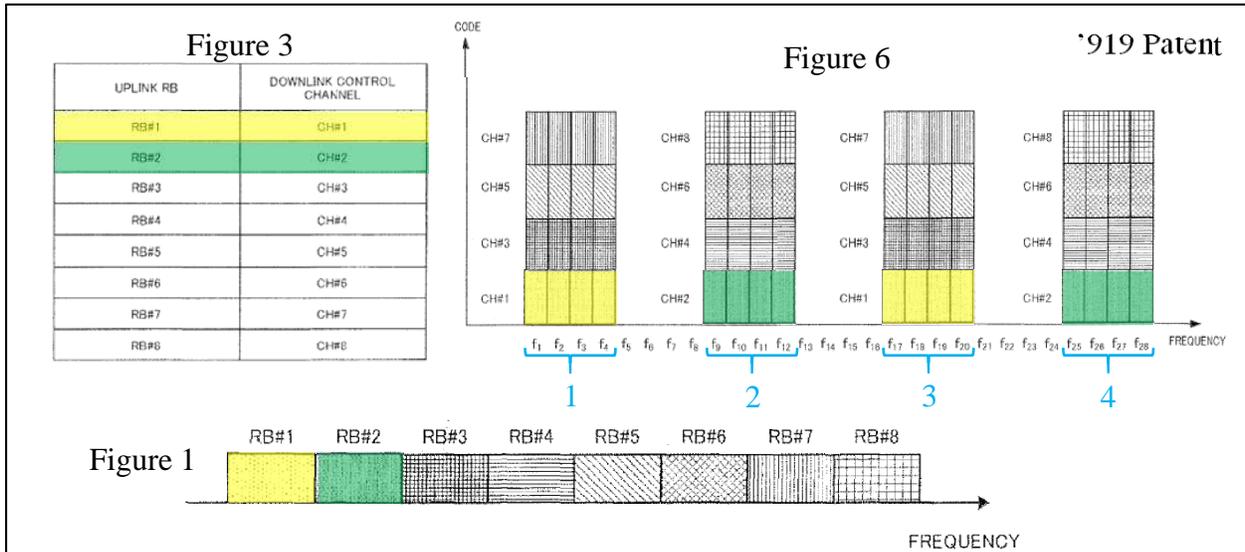
The abstract of the '919 Patent provides:

Provided is a radio communication base station device which can obtain a maximum frequency diversity effect of a downstream line control channel. The device includes: an RB allocation unit (101) which allocates upstream line resource blocks continuous on the frequency axis for respective radio communication mobile stations by the frequency scheduling and generates allocation information indicating which upstream line resource block has been allocated to which radio communication mobile station device; and an arrangement unit (109) which arranges a response signal to the radio communication mobile station device in the downstream line control channels distributed/arranged on the frequency axis while being correlated to the continuous upstream line resource blocks according to the allocation information.

Claims 1 and 10, reproduced here, are representative apparatus and method claims,

1. A mobile station apparatus comprising:
a reception unit configured to receive, from a base station, allocation information indicating one or a plurality of allocated resource block(s) of uplink, the resource blocks being consecutive in a frequency domain; and
a determination unit configured to determine a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block based on the allocation information,
wherein: the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain; the plurality of the resources are respectively comprised of a plurality of subcarrier groups which are inconsecutive in a frequency domain; and the response signal is mapped to the subcarrier group.

10. A method for determining a response signal resource comprising:
receiving, from a base station, allocation information indicating one or a plurality of allocated resource block(s) of uplink, the resource blocks being consecutive in a frequency domain; and
determining a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block based on the allocation information,
wherein: the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain; the plurality of the resources are respectively comprised of a plurality of subcarrier groups which are inconsecutive in a frequency domain; and the response signal is mapped to the subcarrier group.

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respectively.

C-1.   "determination unit"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"determination unit" • '919 Patent Claim 1	No construction necessary. Not governed by 35 U.S.C. § 112, ¶ 6. Alternative: • **Structure**: Mapping specifying section 209 and/or equivalents thereof, as shown in Figure 5, as further shown and described at: Figs. 2–3, 5–8, col./line 6:8–20, 6:64 – 8:32.	Governed by 35 U.S.C. § 112, ¶ 6. Indefinite. **Structure**: Insufficient because only software and a general purpose processor are disclosed. **Function**: "determine a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block based on the allocation information"

The Parties' Positions

Plaintiffs submit that "determination unit" in the context of the surrounding claim language connotes definite structure. According to Plaintiffs, § 112, ¶ 6 does not apply. Dkt. No. 66 at 37–38 (citing Declaration of Richard Gitlin, Sc.D., in Support of Plaintiffs' Opening Claim Construction Brief ¶¶ 49–51 (Dkt. No. 66-2 at 15–16) ("Gitlin Decl.")). Plaintiffs further submit that the '919 Patent's description of the exemplary mapping section 209 and its correlation of resource blocks to downlink resources also evinces the structural nature of "determination unit." *Id*. Finally, Plaintiffs contend that even if § 112, ¶ 6 applies, the description of mapping specifying section 209 satisfies the structural disclosure required by the statute. *Id*. at 38–39.

In addition to the claims, Plaintiffs cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '919 Patent col.4 ll.21–24, col.6 ll.8–20, col.8 ll.8–14,

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col.22 ll.27–28, col.22 ll.30–48. **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2).

Defendants respond that "unit" of "determination unit" is a nonce word and therefore the term does not connote sufficiently definite structure which overcomes the presumption against applying § 112, ¶ 6. Dkt. No. 78 at 41–42. Defendants argue there is no extrinsic evidence showing that "determination unit" is a term of art that refers to structure and that Plaintiffs' expert's opinion is based solely on the disclosure in the '919 Patent. Therefore, Defendants contend the term invokes § 112, ¶ 6. *Id*. Defendants submit that the purported structure identified by Plaintiffs expert is either function (not structure) or is unconstrained structure (i.e., any and all structure). *Id*. at 42. Thus, Defendants argue, the patent does not sufficiently disclose structure for performing the claimed function and "determination unit" renders the claims invalid as indefinite. *Id*. at 42–44. In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '919 Patent col.22 ll.27–49. **Extrinsic evidence**: Kotzin Decl. (Defendants' Ex. 7, Dkt. No. 79-11); Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2); Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14).

Plaintiffs reply that Defendants' indefiniteness argument improperly focuses on the term "determination unit" in a vacuum and fails to consider the structural effect of the surrounding claim language. Dkt. No. 83 at 15–16. Plaintiffs reiterate their contention that "determination unit," in the context of the claims, is structural. *Id*. at 16 (citing Declaration of Richard Gitlin, Sc.D, in Support of Plaintiffs' Reply Claim Construction Brief ¶¶ 33–38 (Plaintiffs' Ex. K, Dkt. No. 83-3 at 12–14) ("Gitlin Reply Decl.")). Plaintiffs further reply that even if § 112, ¶ 6 applies, the statute allows structure to be disclosed through an algorithm and the '919 Patent discloses a

detailed algorithm that meets the statutory requirement. *Id*. (citing '919 Patent cols.6–8, fig.3, fig.6; Gitlin Reply Decl. ¶¶ 33–38 (Dkt. No. 83-3 at 12–14)).

Plaintiffs cite further intrinsic and extrinsic evidence to support their position: **Intrinsic evidence**: '919 Patent cols.6–8, fig.3, fig.6. **Extrinsic evidence**: Gitlin Reply Decl. (Plaintiffs' Ex. K, Dkt. No. 83-3).

Analysis

The issues are twofold: whether 35 U.S.C. § 112, ¶ 6 governs the construction of the limitation and if § 112, ¶ 6 governs, whether the '919 Patent discloses adequate structure. Because the Court determines that the term is not governed by 35 U.S.C. § 112, ¶ 6, it does not reach the second issue.

The "reception unit" term does not include the "means" language. Therefore, the Court presumes that § 112, ¶ 6 does not apply.

1. A mobile station apparatus comprising:
a reception unit configured to receive, from a base station, allocation information indicating one or a plurality of allocated resource block(s) of uplink, the resource blocks being consecutive in a frequency domain; and
a determination unit configured to determine a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block based on the allocation information,
wherein: the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain; the plurality of the resources are respectively comprised of a plurality of subcarrier groups which are inconsecutive in a frequency domain; and the response signal is mapped to the subcarrier group.

Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). "[T]he presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id*. at 1349 (quotation marks omitted). Here, Defendants have not overcome the presumption.

In the claims of the '919 Patent "unit" is used in combination with a recitation of capability to denote structure. For instance, although the parties originally disputed whether "reception unit" and "transmission unit" are structural, Dkt. 66 at 36–37, the parties ultimately

agreed that these terms did not need to be presented to the Court for construction, Dkt. No. 104-1. From this, the Court understands that there is no dispute that "reception unit" and "transmission unit" are structural.

"Determination unit," like "reception unit" and "transmission unit," connotes structure. Even if the term "determination unit" does not in isolation connote sufficiently definite structure, the claim connotes structure to one of skill in the art by reciting details of how the unit functions as part of the claim. The claim states the objective of the "determination unit" is "to determine a resource of downlink." It further states the "determination unit" achieves this objective using "an index of the allocated resource block based on the allocation information" received by the "reception unit." That is, the claim requires the "reception unit" be "configured to receive" the allocation information and requires the "determination unit" be "configured to determine" a resource of downlink from an index from the allocation information. So, together, the claims require the "determination unit" to be connected to the "reception unit" in such a way as to have access to the allocation information the "determination unit" uses to determine the resource of downlink. The claim also provides structure through the details of indices of the allocation information—"the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain."

In the context of a mobile-communication-system patent and a claim to a "mobile station apparatus," the "determination unit" is a specially configured electronic circuit. For example, the patentee noted that although the exemplary embodiments are "configured by hardware," the unit may be an integrated circuit (e.g., LSI, IC), a programmed processor circuit, or a programmed logic circuit (e.g., FPGA). *See* '919 Patent col.22 ll.26–48. The Court recognizes the patentee noted that the particular circuit implementation is not limited to the then-known circuit-building

technology—advancements in semiconductor technology or biotechnology may allow the circuit to be otherwise constructed—according to the objectives and operations of the "determination unit." *See* col.22 ll.44–48. But technology does not change the fundamental structure of the unit as a circuit.

Such a disclosure of the objectives of the "determination unit" and how the unit operates within the context of the claimed invention connotes sufficiently definite structure to one of skill in the art.[8] *See Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004) ("circuit [for performing a function]" found to be sufficiently definite structure because the claim recited the "objectives and operations" of the circuit); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1295, 1301 (Fed. Cir. 2014) ("heuristic [for performing a function]" found to be sufficiently definite structure in part because the claim described the operation and objectives of the heuristic); *Finjan, Inc. v. Proofpoint, Inc.*, No. Case No. 13-cv-05808-HSG, 2015 WL 7770208, at *11 (N.D. Cal. Dec. 3, 2015) ("processor [for performing a function]" found to be sufficiently definite structure because the claim described how the processor functions with the other claim components); *SuperSpeed, LLC v. Google, Inc.*, Civil Action No. H-12-1688, 2014 WL 129225, at *22 (S.D. Tex. Jan. 14, 2014) (code for performing a function connotes sufficiently definite structure).

Accordingly, the Court finds that this term is not governed by 35 U.S.C. § 112, ¶ 6 and needs no further construction.

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[8] According to Dr. Gitlin, "a person of ordinary skill in the art would have a bachelor's degree in Electrical Engineering, Computer Engineering, or a related field, and at least two years of experience in the design, development, and/or testing of cellular base stations or mobile devices." Gitlin Decl. ¶ 28 (Dkt. No. 66-2 at 7). According to Dr. Kotzin, "a person of ordinary skill in the art has at least a bachelor's degree in electrical engineering, computer engineering, physics, or the like and at least 1–3 years of experience working with the design, development, and/or testing of cellular base stations or mobile devices." Kotzin Decl. ¶ 35 (Dkt. No. 79-11 at 12–13).

C-2. **"[to determine / determining] a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block"**

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"to determine a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block" • '919 Patent Claim 1	No construction necessary. Plain and ordinary meaning. Alternative: • "[to determine / determining] a downlink resource to which a response signal transmitted from the base station is mapped based on an index of the resource block(s) allocated to the mobile station"	"[to determine / determining] a resource of downlink, to which a response signal transmitted from the base station is mapped, based solely on an index of the allocated resource block"
determining a resource of downlink, to which a response signal transmitted from the base station is mapped, from an index of the allocated resource block • '919 Patent Claim 10		

The Parties' Positions

Plaintiffs submit that the plain meaning of "mapped, from an index" is not that the mapping is "based solely on an index," as Defendants propose, but that the mapping is just "based on the index." Dkt. No. 66 at 33. Plaintiffs submit that nothing in the '919 Patent justifies construing this term other than according to its plain meaning. *Id.* In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '919 Patent col.8 ll.8–24.

Defendants respond that the way the determination occurs in the '919 Patent is using only an index of allocated resource blocks. Dkt. No. 78 at 16. Defendants further respond because the claims recite that the determination is "*from* an index of allocated resource blocks" the determination is necessarily based solely on the index. *Id.* (emphasis added by Defendants).

Defendants contend that "based on" is separately recited in the claims and therefore "determined . . . from" presumptively carries a different meaning than "based on." *Id*. In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '919 Patent col.1 ll.33–42, col.6 ll.8–20, col.8 ll.8–24, fig.3.

Plaintiffs reply to reiterate that there is no basis to rewrite "from" as "based solely on." Dkt. No. 83 at 13.

<u>Analysis</u>

The issue here is whether information other than the index of allocated resource blocks may be used to determine the resource of downlink. The Court finds that other information may also be used to determine the resource of downlink.

The '919 Patent allows information other than RB allocation information to be used to determine the resource of downlink. The patent explains that the mobile "is able" to determine downlink control channels "according to RB allocation information . . . even when allocation information about the control channel is not reported separately." '919 Patent col.1 ll.37–42. The patent does not restrict the determination to only RB allocation information. Defendants have not identified anything in the patent that requires this restriction. Defendants say every embodiment restricts the determination to RB allocation information. But "[i]t is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that." *Thorner*, 669 F.3d at1366.

Indeed, Defendants' proposed construction threatens to exclude embodiments in which cell or sector information is used with the allocation information to determine the resource of downlink. The patent describes an exemplary embodiment in which downlink control channels

are determined differently depending on which cell in the network, or sector in a cell, the mobile is in. '919 Patent col.9 l.26 – col.10 l. 11. This implies that information about cell or sector, in addition to the index of allocated resource blocks, may be used to determine the resource of downlink.

Finally, the patent states that the response signal is mapped to the frequency bands comprising a downlink control channel "***based on*** the associations shown in FIG. 3." *Id.* at col.8 ll.14–24 (emphasis added); *see also id.* at col. 2, ll.11–21. Defendants' proposed construction threatens to exclude this embodiment. A "construction that excludes a preferred embodiment is rarely, if ever, correct." *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 865 (Fed. Cir. 2004)

Accordingly, the Court rejects Defendants' proposed construction and determines that the terms have their plain and ordinary meaning and do not need to be further construed.

C-3. "response signal"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"response signal" • '919 Patent Claims 1, 10	PanOptis objects to this term as belatedly proposed by ZTE. Alternative: • Plain and ordinary meaning.	"ACK/NACK"

The Parties' Positions

Plaintiffs submit that the '919 Patent expressly describes the ACK/NACK signals as exemplary response signals and, therefore, "response signal" should not be limited to ACK/NACK signals. Dkt. No. 66 at 30–31 (quoting '919 Patent col.17 ll.20–21). In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '919 Patent col.1 ll.25–27, col.17 ll.20–21.

Defendants respond that "response signal" is expressly defined as an ACK/NACK signal and must therefore be construed as an ACK/NACK signal. Dkt. No. 78 at 12 (quoting '919 Patent col.21 l.63 – col.22 l.3). Defendants argue that the language Plaintiffs identify as evidence that the ACK/NACK signal is an exemplary response signal is rather a characterization of downlink control channels. *Id.* at 12–13. In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '919 Patent col.1 ll.25–32, col.1 ll.62–67, col.5 ll.37–43, col.7 ll.3–4, col.12 l.64 – col.13 l.1, col.17 ll.20–21, col.21 l.63 – col.22 l.3.

<u>Analysis</u>

The issue is whether "response signal" has been specially defined as the ACK/NACK signals. The Court determines that is has not been defined. The '919 Patent repeatedly refers to the response signal as the ACK/NACK signals, but it does not clearly define "response signal" as "ACK/NACK." For instance, the patent states an ACK signal or a NACK signal is "fed back as a response signal to the mobile station." '919 Patent col.1 ll.21–32. But this establishes that ACK and NACK signals are response signals, it does not establish that all response signals are ACK or NACK signals. The passage Defendants cite as an express definition of "response signal" is not an express definition. That passage states:

> Further, the downlink control channels for transmitting response signals used in the explanation of the above embodiments are channels for feeding back ACK signals or NACK signals for mobile stations. For this reason, the downlink control channels for transmitting response signals may be referred to as "DCCHs (Dedicated Control Channels)," "ACK/NACK channels," "response channels" and "HICH (Hybrid ARQ Indicator Channel)."

Id. at col.21 l.63 – col.22 l.3. Rather than defining "response signal," the passage states that the response signals of the exemplary embodiments are ACK and NACK signals, and that downlink control channels for these response signals may be referred to as ACK/NACK channels. Further, the patent expressly recites ACK/NACK channels as ***exemplary*** downlink control channels for

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the response signals. *Id.* at col.17 ll.20–21 ("[d]ownlink control channels for transmitting response signals (e.g. ACK/NACK channels), PCFICHs and CCEs are multiplexed on physical resources"). So, while every exemplary embodiment of response signal described in the patent may be an ACK or NACK signal, it does not define response signal. *Thorner v. Sony Computer Entm't Am., LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012) ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.")

Accordingly, the Court rejects Defendants' proposed construction and determines that "response signal" has its plain and ordinary meaning and does not need to be further construed.

C-4. "and the response signal is mapped to the subcarrier group"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"and the response signal is mapped to the subcarrier group" • '919 Patent Claims 1, 10	"and the response signal is mapped to the subcarrier groups"	The term "*the* subcarrier group" renders the claims indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2.

The Parties' Positions

Plaintiffs submit there is an obvious typographical error in the term and that "subcarrier group" should be construed as "subcarrier groups." Dkt. No. 66 at 31–33. Plaintiffs contend that a plain reading of the claim language establishes that the response signal is mapped to subcarrier *groups*, and therefore establishes that "subcarrier *group*" is a typographical error. *Id.* at 31. And Plaintiffs further contend that preferred embodiments are described as mapping the response signal to "frequency bands of subcarriers" and that a "band of subcarriers" is a "subcarrier group." *Id.* at 31–32 (citing '919 Patent col.16 ll.1–3, col.18 ll.19–22; Gitlin Decl. ¶ 40 (Dkt. No.

66-2 at 10)). Thus, Plaintiffs argue the response signals are clearly mapped to multiple subcarrier groups and the typographical error is one that the Court may correct by construing "subcarrier group" as "subcarrier groups." *Id*. at 32–33.

In addition to the claims, Plaintiffs cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '919 Patent col.2 l.5, col.7 ll.10–11, col.8 ll.19–21, col.16 ll.1–3, col.18 ll.19–22, figs.4, 12, 17. **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2).

Defendants respond that "subcarrier group" may not be rewritten as "subcarrier groups" because it would require the response signal to be mapped to all the subcarrier groups. That would render the claim inoperable and improperly exclude all the exemplary embodiments. Dkt. No. 78 at 13–14. Defendants further argue that the error in the claim language is not the kind of error that may be corrected by the Court as the correction is subject to debate. *Id*. at 15–16 (listing three potential corrections).

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '919 Patent figs.6, 7, 8. **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2); Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14); Kotzin Decl. (Defendants' Ex. 7, Dkt. No. 79-11).

Plaintiffs reply that Defendants' list of potential corrections fails to read the term in the context of the claim and therefore the alternative corrections posed by Defendants are unreasonable. Dkt. No. 83 at 12–13. Plaintiffs contend the claim recites that the response signal is mapped to a resource of downlink and that the resource of downlink is comprised of a plurality of subcarrier groups. *Id*. (citing Gitlin Reply Decl. ¶¶ 29–32 (Dkt. No. 83-3 at 10–11)). Thus,

Plaintiffs conclude, a correction that allows for mapping a response signal to a single subcarrier group is not reasonable. *Id.*

Plaintiffs cite further intrinsic and extrinsic evidence to support their position: **Intrinsic evidence**: '919 Patent col.4 ll.55–56. **Extrinsic evidence**: Gitlin Reply Decl. (Plaintiffs' Ex. K, Dkt. No. 83-3); Kotzin Decl. (Defendants' Ex. 7, Dkt. No. 79-11).

Defendants, in a sur-reply, respond that rewriting "the subcarrier group" as "the subcarrier groups" means the antecedent basis for "the subcarrier groups" would be the immediately preceding recital of "subcarrier groups" in the phrase "a plurality of subcarrier groups." Dkt. No. 92 at 3. But, according to Defendants, this correction is improper because it would result in the response signal being mapped to more than one downlink control channel, which both parties' experts have said is impossible. *Id.* at 3–4. Defendants cite further **extrinsic evidence** to support their position: Gitlin Reply Decl. (Plaintiffs' Ex. K, Dkt. No. 83-3).

Analysis

The issue here is whether the Court has the authority to correct the error in Claims 1 and 10, or whether all the claims of the '919 Patent fail. Because the Court finds there is no error, it does not reach the issue of whether a correction is needed. Specifically, the Court finds that the antecedent basis for "the response signal is mapped to the subcarrier group" to be the "resource of downlink, to which a response signal transmitted from the base station is mapped." Under the plain reading of Claim 1, in the context of its dependent claims, this "resource of downlink" is a resource comprising a subcarrier group. Thus, the subcarrier group to which the response signal is mapped is the subcarrier group that comprises the resource of downlink. Defendants have not proven that this term renders any claim indefinite.

To begin, the Court does not understand—and rejects—that each response signal is necessarily mapped to more than one subcarrier group. The patent explains as much when it notes "although cases have been explained with the above embodiments as examples where spreading factor SF is 4 in spreading section 106 and repetition factor RF is 2 in repetition section 107, SF and RF are not limited to these values." '919 Patent col.21 ll.36–9. Requiring that the resource of downlink to which a response signal is mapped to comprise at least two subcarrier groups threatens to exclude the exemplary embodiment in which the repetition factor ("RF") is 1. Further, Claim 3 expressly states that the response signal is mapped to a plurality of the resources of downlink. Reading Claim 1 to require such multi-resource mapping would

> **1.** A mobile station apparatus comprising:
> a reception unit configured to receive, from a base station, allocation information indicating one or a plurality of allocated resource block(s) of uplink, the resource blocks being consecutive in a frequency domain; and
> a determination unit configured to determine a resource of downlink, <u>to which a response signal transmitted from the base station is mapped,</u> from an index of the allocated resource block based on the allocation information,
> wherein: the indices of a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources which are different in a frequency domain; the plurality of the resources are respectively comprised of a plurality of subcarrier groups which are inconsecutive in a frequency domain; and <u>the response signal is mapped to the subcarrier group.</u>
> ▪ ▪ ▪
> **3.** The mobile station apparatus according to claim **1**, wherein <u>the response signal is mapped to a plurality of the resources distributed in the frequency domain.</u>
> **4.** The mobile station apparatus according to claim **1**, wherein the response signal is spread in the base station, and the spread response signal is mapped to the resource.
> **5.** The mobile station apparatus according to claim **1**, wherein a plurality of the same response signals are generated with a repetition in the base station, and the plurality of the same response signals are mapped to a plurality of the resources distributed in the frequency domain, respectively.
> ▪ ▪ ▪
> **7.** The mobile station apparatus according to claim **1**, wherein a plurality of the response signals are mapped to the resource with code-multiplexed.

violate claim differentiation. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim."). And—importantly—interpreting Claim 1 to require this multi-resource mapping would render Claim 3 inoperable, according to the parties' experts. *See* Gitlin Dep. 128:4–14 (Dkt. No. 79-14 at 33); Kotzin Decl. ¶ 69 (Dkt. No. 79-11 at 30–31).

The Court understands that under the plain meaning of the claim language, each resource of downlink comprises at least one subcarrier group. The claim states "the plurality of the

resources are respectively comprised of a plurality of subcarrier groups." This phrase parallels the phrase "a plurality of the consecutive resource blocks are respectively associated with a plurality of the resources." The Court understands this second phrase to mean that each resource block is associated with a different resource. Specifically, it does not mean that each resource block is necessarily associated with a plurality of the resources because such an interpretation would exclude the embodiment of Figure 3. *C.R. Bard*, 388 F.3d at 865 ("[a] construction that excludes a preferred embodiment is rarely, if ever, correct"). The Court similarly understands that "the plurality of the resources are respectively comprised of a plurality of subcarrier groups" does not require that the each resource necessarily be comprised of a plurality of subcarrier groups—a resource may be comprised of a single subcarrier group. This comports with both the patent's disclosure of using a repetition rate other than 2 and Claim 3's separate recitation of multi-resource mapping. This is the best understanding of Claim 1. *Phillips*, 415 F.3d at 1316 ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.").

The Court finds that the parties' expert's opinions that Claim 1 requires multi-resource mapping accurately describe the claim language. The experts' understanding of Claim 1 appears to be based on the exemplary embodiments in which the response signal is repeated with a repetition factor of 2 and is spread/code-multiplexed with a spreading factor of 4. Claim 1 and the patent do not require such repetition or spreading. Indeed, both spreading and repetition are separately recited in Claim 1's dependent claims—raising the presumption that such limitations are not present in independent Claim 1. *See, e.g.*, Claim 3 (repetition), Claim 4 (spreading), Claim 5 (repetition), Claim 7 (code multiplexing), Claim 8 (code multiplexing). Further, under the experts' stated understanding of Claim 1, Claim 3 is not only redundant—it does not work.

Accordingly, the Court gives only some weight to the experts' testimonies on this subject. *Id.* at 1318 ("a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves" (quotation marks omitted)).

With this understanding of Claim 1, the Court does not understand "downlink channel"—the parties' agreed construction for "resource of downlink"—to comprise at least two subcarrier groups. The "downlink channel," as expressed in Claim 1, comprises at least one subcarrier group.

Accordingly, the Court does not perceive an error in the issued claim language. The Court finds Defendants have not proven that this term renders any claim indefinite and construes "and the response signal is mapped to the subcarrier group" as follows:

- "and the response signal is mapped to the subcarrier group" means "and the response signal is mapped to the subcarrier group that comprises the determined resource of downlink."

D. The '792 Patent: "with [an/the] orthogonal sequence" and "which is associated with [the/an] orthogonal sequence"

In general, the '792 Patent is directed to technology to improve the separation of code-multiplexed response signals sent from the mobile to the base station in a mobile communication system. *Id.* at col.1 ll.9–25, col.2 l.58 – col.3 l.41. The response signals are sent to the base station "using uplink control channels such as a PUCCH (Physical Uplink Control CHannel)." *Id.* at col.1 l.23–25. A response signal may be spread for code-multiplexing purposes using two different code sequences (two-dimensional spreading). *Id.* at col.1 l.47 – col.2 l.10, fig.1. A first spreading is done with cyclic-shift sequences (e.g., Zadoff-Chu ("ZC") sequences) and a second spreading is done with orthogonal sequences (e.g., Walsh sequences). *See id.* Different cyclic-shift sequences are generated with different cyclic-shift values. *Id.* at col.2 ll.3–5. The invention

of the '792 Patent purports to improve the separation of response signals by establishing certain relationships between the first spreading sequence and the second spreading sequence. *Id.* at col.2 l.58 – col.3 l.41.

With reference to Figure 7, reproduced here and annotated by the Court, the patent describes an exemplary association between ZC sequences and Walsh sequences for different PUCCHs. *Id.* at col.8 l.6 – col.9 l.57. In this association, adjacent Walsh sequences are associated with different ZC sequences—no two adjacent Walsh sequences are associated with the same ZC sequence. *Id.* at col.9 ll.1–21. For example, in Figure 7, Walsh sequence 1 (W#1) is associated with ZC sequence 1 (ZC#1) (as shown with the green line) and adjacent Walsh sequence 2 (W#2) is associated with ZC sequence 2 (ZC#2) (as shown with the yellow line). *Id.* Such an association has the advantage of the ZC-sequence spreading suppressing the inter-code interference that would otherwise occur in the event the orthogonality of the Walsh sequences collapses (e.g., when the mobile station is moving quickly). *Id.* at col.3 ll.3–10, col.9 ll.8–21. In the Figure 7 association, adjacent ZC sequences are associated with different Walsh sequences which works to protect the separation of response signals in the event the ZC-sequence orthogonality collapses. *Id.* at col.9 ll.22–42. The patent depicts various other associations

'792 Patent, Figure 7

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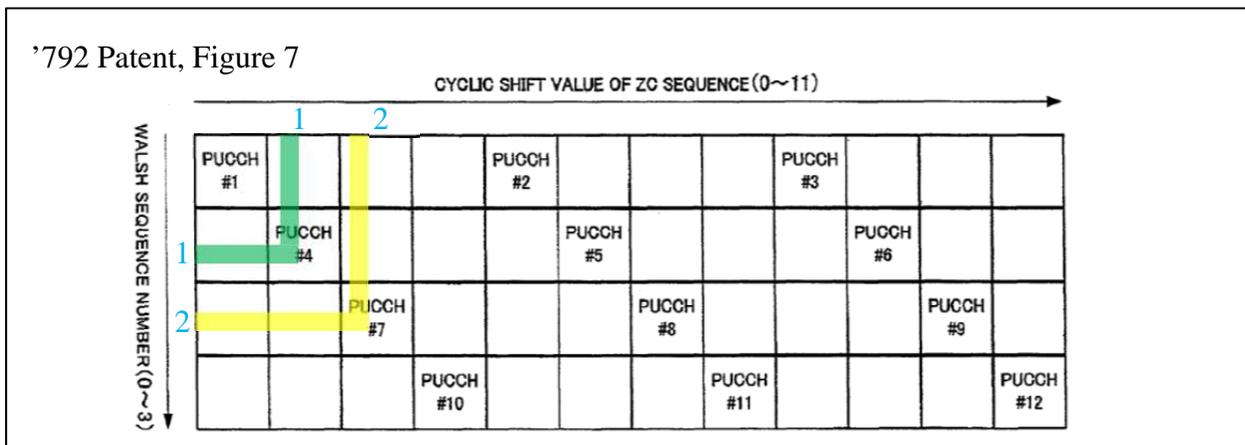
between Walsh and ZC sequences. *See, e.g.*, *id*. at col.10 ll.2–23 & figs. 9–10, col.10 ll.24 – coll.11 l.25 & fig.12.

The abstract of the '792 Patent provides:

A wireless communication apparatus capable of minimizing the degradation in separation characteristic of a code multiplexed response signal. In this apparatus, a control part (209) controls both a AC sequence to be used in a primary spreading in a spreading part (214) and a Walsh sequence to be used in a secondary spreading in a spreading part (217) so as to allow a very small circular shift interval of the ZC sequence to absorb the interference components remaining in the response signal; the spreading part (214) uses the ZC sequence set by the control part (209) to primary spread the response signal; and the spreading part (217) uses the Walsh sequence set by the control part (209) to secondary spread the response signal to which PC has been added.

Claims 1 and 24, reproduced here, are representative apparatus and method claims,

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1. A radio communication apparatus comprising:
a spreading unit configured to spread an ACK or NACK with an orthogonal sequence, which is one of plural orthogonal sequences, and with a sequence defined by a cyclic shift value, which is one of plural cyclic shift values and which is associated with the orthogonal sequence; and
a transmitting unit configured to transmit the ACK or NACK,
wherein:
each of the plural orthogonal sequences is an orthogonal sequence comprised of 4 codes and having a length 4;
the plural orthogonal sequences include a first orthogonal sequence and a second orthogonal sequence, wherein a sequence comprised of 2 codes in the first half of the first orthogonal sequence is not orthogonal to a sequence comprised of 2 codes in the first half of the second orthogonal sequence, and a sequence comprised of 2 codes in the second half of the first orthogonal sequence is not orthogonal to a sequence comprised of 2 codes in the second half of the second orthogonal sequence; and
a cyclic shift value associated with the first orthogonal sequence is different from a cyclic shift value associated with the second orthogonal sequence.

24. A response signal spreading method comprising:
spreading an ACK or NACK with a sequence defined by a cyclic shift value, which is one of plural cyclic shift values and which is associated with an orthogonal sequence; and
spreading the ACK or NACK with an orthogonal sequence, which is one of plural orthogonal sequences,
wherein, the plural orthogonal sequences include a first orthogonal sequence [1, −1, 1, −1] and a second orthogonal sequence [1, −1, −1, 1], and a cyclic shift value associated with the first orthogonal sequence is different from a cyclic shift value associated with the second orthogonal sequence.

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respectively.

The Dispute

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction

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Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"with an orthogonal sequence" • '792 Patent Claims 1, 3, 4, 6, 12, 14, 22, 23, 24 "with the orthogonal sequence" • '792 Patent Claims 1, 3, 4, 6, 12, 14	No construction necessary. Plain and ordinary meaning.	"with [the/an] entire orthogonal sequence"
"which is associated with the orthogonal sequence" • '792 Patent Claims 1, 3, 4, 6, 12, 14 "which is associated with an orthogonal sequence" • '792 Patent Claims 22, 23, 24	No construction necessary. Plain and ordinary meaning. Alternative: • "which is related to [the/an] orthogonal sequence"	"which has a set mapping with [the/an] orthogonal sequence for the spreading of the ACK or NACK"

The Parties' Positions

Plaintiffs submit that '792 Patent describes spreading an ACK/NACK signal with an orthogonal sequence and an associated cyclic-shift-value-based sequence—without reference to a "set mapping" between the two sequences. Dkt. No. 66 at 23. Plaintiffs further submit that "associated" is used in the '792 Patent per its ordinary meaning, to connote a relationship. *Id*. at 23. According to Plaintiffs, "mapping" and variants in the patent refers to mapping information to time and frequency resources—"mapping" is used to express a concept distinct from "associated." *Id*. at 23–24. This is apparent, Plaintiffs argue, in that a grandparent application was edited to correct errors in the translation from the priority Japanese application; specifically, correcting some instances of "mapping" to "association." *Id*. Plaintiffs further submit that there is nothing in the claims or intrinsic evidence that requires the association between the cyclic shift

value and the orthogonal sequence to be "set" for any period of time. *Id.* at 24 & n.4. Thus, Plaintiffs contend, it would be improper to construe "associated" as "set mapping," as Defendants propose. *Id.*

Plaintiffs further submit that the patent's orthogonal sequences include subsequences that are also orthogonal. Dkt. No. 66 at 24–25 (citing '792 Patent col.10 ll.24–41). Plaintiffs submit that the patent describes that only one member of the orthogonal sequence is used at any given time. *Id.* (citing '792 Patent col.1 l.55 – col.2 l.10, col.2 l.61 – col.3 l.10). Thus, Plaintiffs contend, since the patent contemplates using portions of the orthogonal sequence at any given time, it would be improper to construe the terms to restrict a single cyclic shift value to an entire orthogonal sequence. *Id.*

In addition to the claims, Plaintiffs cite the following **intrinsic evidence** to support their position: '792 Patent col.1 l.37, col.1 l.46, col.1 l.55 – col.2 l.10, col.2 l.61 – col.3 l.10, col.5 l.6, col.5 l.19, col.5 l.24, col.5 l.28, col.5 l.33, col.5 l.50, col.8 ll.7–67, col.10 ll.24–41, figs.1, 7, 9, 11–14; '721 File Wrapper April 25, 2011 Amendment (Plaintiffs' Ex. B-14, Dkt. No. 66-16)[9].

Defendants respond the claims, and the entire intrinsic record, dictate that the claimed spreading of the ACK/NACK signal is accomplished using all the codes of the claimed orthogonal sequence, i.e., using the entirety of the orthogonal sequence. Dkt. No. 78 at 17. Defendants contend that using a single code of an orthogonal sequence to spread the signal would not be spreading with an orthogonal sequence because a single code is not a sequence and cannot be orthogonal to anything. *Id.* at 17–18 & n.6 (citing Gitlin Decl. ¶ 72 (Dkt. No. 66-2 at 24); Gitlin Dep. 72:23 – 73:2, Certificate of Correction (Dkt. No. 79-14 at 19–20, 37)).

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[9] The '792 Patent issued from a continuation of a continuation of application number 12/593,904, which issued as U.S. Patent No. 8,009,721 (the "'721 Patent"). '792 Patent, at [63] Related U.S. Application Data.

Defendants contend that spreading the signal requires more than one symbol and therefore requires more than one code. *Id.* at 18 (citing Gitlin Dep. 77:3–10 (Dkt. No. 79-14 at 21)). Finally, Defendants argue that the two-code orthogonal subsequences of Figure 11 are used in the base station to receive the ACK/NACK signal under adverse conditions. They are not used alone to spread the signal in the phone and allowing this would contradict the claims' express requirement that four codes be used to spread the signal. *Id.* & n.7.

Defendants also respond that the claims require, and the '792 Patent describes, that for a given phone, the cyclic shift value used in the spreading is associated only with the orthogonal sequence used in the spreading. Defendants assert that the orthogonal sequence used in the spreading is associated only with the cyclic shift value used in the spreading—that they are mapped to each other. *Id.* at 18–19. Defendants respond that this combination of cyclic shift value and orthogonal sequence is set for the phone. *Id.* at 19–21 (citing '792 Patent figs.7, 9, 10, 12, 13, 14). Finally, Defendants argue that if "associated" is broader than "mapped," then new matter was added by changing "mapping" to "association" in the priority application, and the '792 Patent would be barred as a late-filed application. *Id.* at 20.

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '792 Patent col.3 ll.24–31, col.7 ll.30–60, col.10 l.24 – col.11 l.24, figs.6, 7, 9, 10–14; '721 File Wrapper April 25, 2011 Amendment (Plaintiffs' Ex. B-14, Dkt. No. 66-16); EP Application No. 08764121.3 (Defendants Ex. 2-B, Dkt. No.79-4). **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2); Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14).

Plaintiffs reply that the claims are open ended (i.e., they use the "comprising" transitional phrase) and thus as long as the recited association exists, nothing bars the orthogonal sequence

from being associated with more than one cyclic shift value. Dkt. No. 83 at 9–10. Plaintiffs further reply that the orthogonal-sequence spreading spreads a signal over time. Therefore, the four codes of the spreading sequence are not simultaneously applied. *Id.* at 10. Thus, Plaintiffs contend, the association between the cyclic shift value and the orthogonal sequence need not be the same for each code in the orthogonal sequence as the codes are applied over time. *Id.* at 10–11.

Plaintiffs cite further **intrinsic evidence** to support their position: '792 Patent col.1 l.47 – col.2 l.10, col.8 ll.17–45.

Analysis

There are three issues in dispute. First, whether a signal is spread by a code sequence if only a portion of the code sequence is applied to the signal. Second, whether the association between the cyclic-shift sequence and the orthogonal sequence is necessarily a one-to-one mapping. Third, whether this association is set for a given phone.

The Court does not understand that a signal is spread by a sequence if only a portion of the sequence is applied to the signal. The '792 Patent explains that when spreading a signal with a Walsh sequence (an exemplary orthogonal sequence) of length four, the signal is allocated to each of four symbols, that is, the signal is spread over four symbols according to the application of the entirety of length-four sequence. '792 Patent col.1 ll.61–64. The Court understands this application of each code in the sequence to be inherent in spreading. Spreading with a subset of the sequence would be spreading with a different sequence and would result in a different spread signal. Spreading with a single code would not be spreading.

Further, the Court does not understand that the association between the spreading codes is either necessarily one-to-one or necessarily set for a particular phone. Claim 1 separately recites

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an exclusive association. It states "a cyclic shift value associated with the first orthogonal sequence is different from a cyclic shift value associated with the second orthogonal sequence." '792 Patent col.14 ll.61–63. This strongly implies that the first and second orthogonal sequences may otherwise be associated with the same cyclic shift value, that is, it states that the association is not necessarily "mapped" as Defendants propose. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) (noting that the use of the term "steel baffles" "strongly implies that the term 'baffles' does not inherently mean objects made of steel"). While the patent provides exemplary associations in which each PUCCH corresponds to a particular association, the Court does not understand this to mean the association is "set" for a particular phone. The phone may change PUCCH. '792 Patent col.1 ll.42–44 ("each mobile station can decide the PUCCH to use to transmit response signals from the mobile station"), col.7 ll.14–16 ("deciding section 208 decides a PUCCH to use to transmit a response 15 signal from the mobile station"). So even if the association was set for a given PUCCH, it is not set for the phone. There is nothing expressed in the claims stating that the association is set for a given PUCCH, or for the phone. *Thorner*, 669 F.3d at 1366 ("It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.").

Accordingly, the Court rejects Defendants' "set mapping" limitation, determines that "which is associated with [the/an] orthogonal sequence" has its plain and ordinary meaning, and the term needs no further construction. The Court construes "with [the/an] orthogonal sequence" as follows:

- "with [the/an] orthogonal sequence" means "with [the/an] entire orthogonal sequence."

E.   The '557 Patent

In general, the '557 Patent is directed to mobile-communication technology for allowing a mobile to report control information to the base station using the Random Access Channel ("RACH"). '557 Patent col.1 ll.11–15, col.1 l.54 – col.2 l.22. The RACH is used, for example, for a mobile to request access to communication resources from the base station. *Id*. at col.1 ll.17–18. The RACH signal sent to the base station is a "signature" that distinguishes the sending mobile from other mobiles also sending RACH signals. *Id*. at col.1 ll.19–22. This signature may be one a series of code sequences that have low cross-correlation and high auto-correlation (e.g., Constant Amplitude Zero Auto-Correlation ("CAZAC") sequences). *Id*. at col.1 ll.23–32.

There are advantages to be gained if the mobile may use the RACH signal to report control information to the base station. *Id*. at col.1 ll.33–39. Such control information includes information such as "mobile station ID, the reason for RACH transmission, bandwidth allocation request information (QoS information, the amount of data, and so on), and downlink received quality information." *Id*. The invention of the '557 Patent is meant to allow the mobile to efficiently report such control information in the RACH by establishing certain associations between code sequences and the control information that is to be reported to the base station. *Id*. at col.1 l.54 – col.2 l.22.

With reference to Figures 3 and 4, reproduced below and annotated by the Court, the patent describes an exemplary association between control information and CAZAC-sequence signatures. *Id*. at col.4 l.54 – col.5 l.24. In the example, the potential values of the downlink "received quality" control information are separately associated with multiple CAZAC sequences. *Id*. In the example of Figure 4, the sequences associated with a particular received quality are derived from a common base CAZAC sequence (sequence number k) through application of shift values (shift m). *Id*. The mobile selects as its RACH signature one of the

sequences associated with the control information it wishes to report. *Id.* at col.5 ll.25–44. Thus, the base station can identify the mobile and the control information from a single RACH signal sent from the mobile. *Id.* To alleviate the interference of multiple mobiles sending the same signature (collisions), the mobile preferably randomly selects the signature sequence from the series of appropriate sequences. *Id.* at col.5 ll.45–61.

Figure 3 and Figure 4 from the '557 Patent
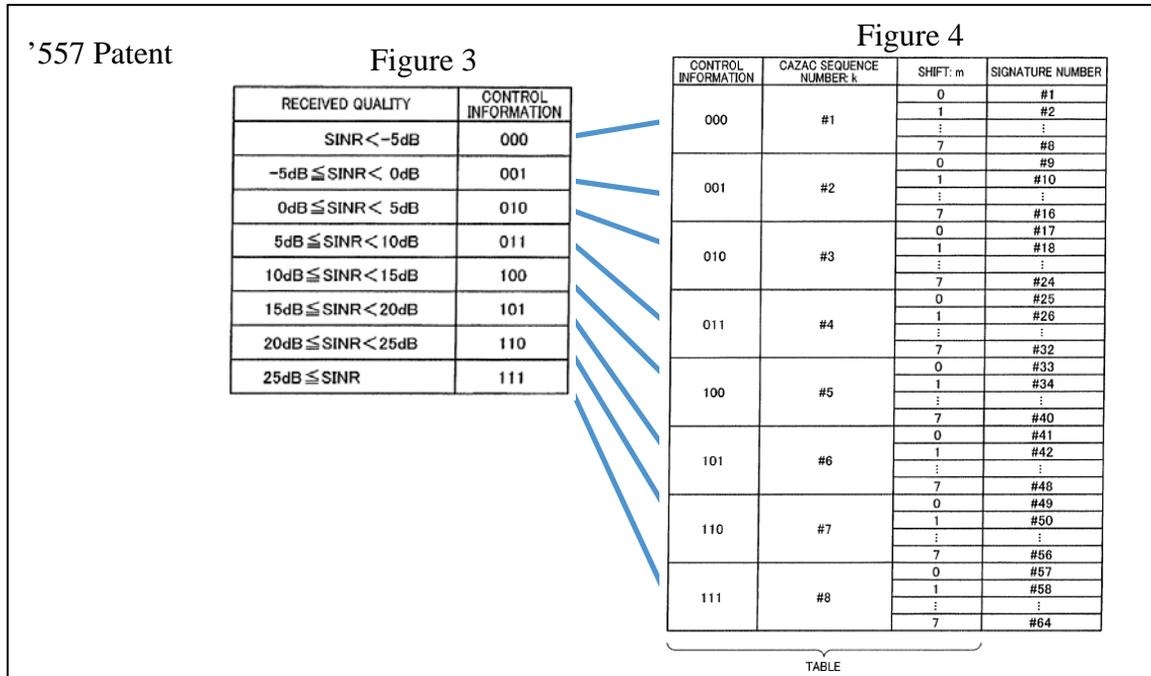
With reference to Figure 11, reproduced below and annotated by the Court, the patent also describes a dynamically generated association between the control information and code sequences. *Id.* at col.8 l.27 – col.9 l.3. To account for variances in the number of mobiles reporting the same control information, the mobile may use information about the rates of occurrence of the particular pieces of control information to alter the association between the control information and the sequences. *Id.* This allows for more sequences to be associated with high-occurrence control information (those that are reported from many mobiles) and for fewer to be associated with low-occurrence control information. *Id.* This reduces the rate of collisions (multiple mobiles sending the same signature sequence). *Id.* at col.7 ll.50–67. The information

regarding the rate of occurrence of the various pieces of control information is provided by the base station via a "control signal." *Id.* at col.8 ll.42–51.

'557 Patent

Figure 3

RECEIVED QUALITY	CONTROL INFORMATION
SINR<−5dB	000
−5dB≤SINR<0dB	001
0dB≤SINR<5dB	010
5dB≤SINR<10dB	011
10dB≤SINR<15dB	100
15dB≤SINR<20dB	101
20dB≤SINR<25dB	110
25dB≤SINR	111

Figure 11

CONTROL INFORMATION	CAZAC SEQUENCE NUMBER: k	SHIFT: m	SIGNATURE NUMBER
000	#1	0	#1
		1	#2
		2	#3
		3	#4
		4	#5
		5	#6
		6	#7
		7	#8
	#2	0	#9
		1	#10
		2	#11
		3	#12
		4	#13
		5	#14
		6	#15
		7	#16
001	#3	0	#17
		1	#18
		2	#19
		3	#20
		4	#21
		5	#22
		6	#23
		7	#24
101	#8	0	#57
		1	#58
		2	#59
		3	#60
		4	#61
111		5	#62
		6	#63
		7	#64

TABLE

The abstract of the '557 Patent provides:

A mobile station apparatus includes a receiving unit configured to receive control information; a selecting unit configured to randomly select a sequence from a plurality of sequences contained in one group of a plurality of groups, into which a predetermined number of sequences generated from a plurality of base sequences are grouped and which are respectively associated with different amounts of data or reception qualities; and a transmitting unit for transmitting the selected sequence. The predetermined number of sequences are grouped by partitioning the predetermined number of sequences, in which sequences generated from the same base sequence and having different cyclic shifts are arranged in an increasing order of the cyclic shifts. A position at which the predetermined number of sequences are partitioned is determined based on the control information, and a number of sequences contained in each of the plurality of groups varies in accordance with the control information.

Claims 1 and 10, reproduced here, are representative apparatus and method claims, respectively.

> 1. A mobile station apparatus comprising:
> a receiving unit configured to receive control information;
> a selecting unit configured to randomly select a sequence from a plurality of sequences contained in one group of a plurality of groups, into which a predetermined number of sequences that are generated from a plurality of base sequences are grouped and which are respectively associated with different amounts of data or reception qualities, wherein the predetermined number of sequences are grouped by partitioning the predetermined number of sequences, in which sequences generated from the same base sequence and having different cyclic shifts are arranged in an increasing order of the cyclic shifts; and
> a transmitting unit configured to transmit the selected sequence,
> wherein a position at which the predetermined number of sequences are partitioned is determined based on the control information, and a number of sequences contained in each of the plurality of groups varies in accordance with the control information.

> 10. A random access method comprising:
> receiving control information;
> grouping a predetermined number of sequences that are generated from a plurality of base sequences into a plurality of groups, which are respectively associated with different amounts of data or reception qualities, by partitioning the predetermined number of sequences, in which sequences generated from the same base sequence and having different cyclic shifts are arranged in an increasing order of the cyclic shifts; and
> randomly selecting a sequence from a plurality of sequences contained in one group of the plurality of groups,
> wherein a position at which the predetermined number of sequences are partitioned is determined based on the control information, and a number of sequences contained in each of the plurality of groups varies in accordance with the control information.

E-1.   "receiving unit" and "control information"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"receiving unit" • '557 Patent Claim 1	No construction necessary. Plain and ordinary meaning. Not governed by 35 U.S.C. § 112, ¶ 6. Alternative: • **Structure**: Antenna 16, radio and receiving section 31, as shown in Fig. 10, and the table of Figure 3 and/or equivalents thereof, as further shown and described at: Fig. 1, Fig. 3, Fig. 10 (16, 31, 33), col./line 4:57–63, 8:37–9:3, 9:27–48.	Governed by 35 U.S.C. § 112, ¶ 6. Indefinite **Structure**: signature selecting section 111, which ZTE asserts under the discussion of "selecting unit" below has insufficient and indefinite structure **Function**: "receive control information"
"control information" • '557 Patent Claims 1, 10	No construction necessary. Plain and ordinary meaning.	"information to be reported to a base station"

Because the parties' arguments and proposed constructions with respect to these terms are related, the Court addresses the terms together.

With respect to "control information," Plaintiffs submit that the term is well understood to refer to information used for control. *Id*. at 39. Plaintiffs further submit that the '557 Patent provides examples of control information that is not reported to the base station and therefore, that Defendants' proposed construction should be rejected. *Id*. at 39–40 (citing '557 Patent col.2 ll.30–31, col.4 ll.59–60, col.7 l.50 – col.9 l.3, col.9 ll.15–23). Plaintiffs argue that the claims are directed to a mobile station that has components configured to receive and utilize the control information, but the claims do not recite that the control information is reported to a base station. *Id*.

With respect to "receiving unit," Plaintiffs submit the term sufficiently connotes structure such that § 112 ¶ 6 does not apply. Dkt. No. 66 at 44–45 (citing Gitlin Decl. ¶¶ 88–90 (Dkt. No. 66-2 at 30–31)). Plaintiffs further submit that the '557 Patent describes an exemplary "receiving unit configured to receive control information" as having structure comprising the antenna and receiving section of Figure 10 and the control information correlation table of Figure 3. *Id*. (citing Gitlin Decl. ¶¶ 88–90 (Dkt. No. 66-2 at 30–31)). Plaintiffs contend that the structure of the "receiving unit" is not the "signature selecting section," as Defendants propose. Rather, Plaintiffs contend, the patent describes that after the receiving section has received the control information, pieces of control information are sent to the "signature selecting section," and the "signature selecting section" corresponds to the claims' "selecting unit." *Id*. (citing '557 Patent col.4 l.57 – col.5 l.8; Gitlin Decl. ¶¶ 88–90 (Dkt. No. 66-2 at 30–31)).

In addition to the claims, Plaintiffs cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent col.2 ll.30–31, col.4 l.57 – col.5 l.8, col.7

l.50 – col.9 l.3, col.9 ll.15–23, figs.1, 3, 10. **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2).

With respect to "control information," Defendants respond that the term is not well understood in the art. Dkt. No. 78 at 21–22 & n.11 (quoting Deposition of Daichi Imamura 69:12–20 (Dkt. No. 78-1 at 6) ("Imamura Dep.")). Defendants further respond that "control information" is used repeatedly and consistently in the '557 Patent to refer to information that is reported or to be reported to the base station. *Id*. at 22. (citing the '557 Patent as annotated by Defendants to highlight "control information" (Dkt. No. 79-5)). And, Defendants respond, "control information" and "control signal" are distinguished in the patent. The first refers to information to be sent to the base station. The second refers to signals coming from the base station. *Id*. at 22–23 (citing '557 Patent col.6 ll.43–64). Thus, Defendants contend, the '557 Patent defines "control information" as "information to be reported to a base station." *Id*. And Defendants contend that Plaintiffs' expert agrees that "control information" is sent *to* the base station *from* the phone and is distinct from the "control signal" that is sent *from* the base station *to* the phone. *Id*. at 22–23 (citing Gitlin Dep. 28:6–13, 43:18–21, 45:13–21, 46:5–15 (Dkt. No. 79-14 at 8, 12–13)).

With respect to "receiving unit," Defendants respond that Plaintiffs' argument improperly conflates "control information" and "control signal." According to Defendants, the "receiving unit" is configured to receive "control information" and not "control signals," and therefore, the control-signal-receiving structure identified by Plaintiffs does not serve the claimed function of receiving "control information." Dkt. No. 78 at 24–25 (citing Gitlin Dep. at 28:6–13, 42:6 – 43:6, 43:18–21, 45:13–21, 46:5–15 (Dkt. No. 79-14 at 8, 12–13); Kotzin Decl. ¶¶ 54–55 (Dkt. No. 79-11 at 23)). Rather, Defendants contend, the only thing disclosed in the '557 Patent that

receives "control information" is the signature selection section. Defendants note that is described as a functional block and not as structure. *Id*. (citing Kotzin Decl. ¶¶ 54–56 (Dkt. No. 79-11 at 23–24)).

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent col.2 ll.30–31, col.4 ll.57–63, col.6 ll.43–64, col.7 l.50 – col.9 l.3, col.9 ll.15–23, references to "control information." **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2); Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14); Imamura Dep. (Defendants' Ex. 3-B, Dkt. No. 78-1); Kotzin Decl. (Defendants' Ex. 7, Dkt. No. 79-11).

Plaintiffs reply that Defendants fail to establish that § 112, ¶ 6 applies to "receiving unit" and that Defendants' expert offered no opinion on whether § 112, ¶ 6 applies. Dkt. No. 83 at 14. With respect to "control information," Plaintiffs reply "control information" was not specially defined as Defendants suggest, but rather the patent itself contemplates that control information is not necessarily sent to the base station. Dkt. No. 83 at 13–14 (citing '557 Patent col.4 ll.56–63; Gitlin Reply Decl. ¶¶ 23–24 (Dkt. No. 83-3 at 8–9)).

Plaintiffs cite further intrinsic and extrinsic evidence to support their position: **Intrinsic evidence**: '557 Patent col.4 ll.56–63. **Extrinsic evidence**: Gitlin Reply Decl. (Plaintiffs' Ex. K, Dkt. No. 83-3).

<u>Analysis</u>

There three main issues in dispute. First, whether "control information" is specially defined as "information to be reported to a base station." Second, whether 35 U.S.C. § 112, ¶ 6 governs the construction of the "receiving unit" limitation. And, third, whether, if § 112, ¶ 6 governs "receiving unit," the patent discloses adequate structure under the statute. The Court

does not find the "control information" is specially defined in the '557 Patent. Further, because Defendants' understanding of "control information" is the sole basis for its § 112, ¶6 argument, the Court determines that "receiving unit" is not governed by the statute.

"Control information" is used in the '557 Patent to designate a broad category of information related to control of the mobile communication system. *See, e.g.*, '557 Patent col.1 ll.33–39 (listing exemplary types of control information), col.9 ll.16–23 (same). Indeed, the patent explains not all control information is reported to the base station and only select information is reported. '557 Patent col.4 ll.57–63. The Court finds no special definition of "control information" that would limit "control information" to information flowing from the mobile to the base station. *See Thorner, LLC*, 669 F.3d at 1367 ("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.").

In fact, Claim 1 of the patent uses the term "control information" to refer to information used to reallocate code sequences and vary the size of the groups of sequences. It uses "different amounts of data or reception qualities" to refer to the information reported to the base station. This reallocation information is described with reference to the exemplary embodiment of Figures 10 and 11 as coming from the base station. '557 Patent col.8 l.27 – col.9 l.2 (a "control signal" from the base station "designates to change the associations between [mobile] control information and the code sequences in the table"). Thus, the "control signal" of the exemplary embodiment belongs to the class of "control information" that is not reported to the base station. This comports with Mr. Imamura's deposition testimony that "control information" is "information other than user information." Imamura Dep. 69:1–11 (Dkt. No. 78-1 at 6).

Based on the patents presently before the Court, the extrinsic evidence further establishes that "control information" is not limited to "information to be reported to a base station." The term "control information" is used in other Asserted Patents to denote information related to control of the communication system that flows from the base station to the mobile. For example, the '919 Patent states: "Control information that is required to transmit uplink data 20 from a mobile station to a base station . . . is transmitted from the base station to the mobile station." '919 Patent col.10 ll.19–25. The '792 Patent further states "the base station transmits control information for reporting resource allocation results of downlink data, to mobile stations." '792 Patent col.1 ll.26–28. Notably, the '919 Patent, the '792 Patent, and the '557 Patent share a common original assignee, Panasonic Corporation. Further, the '792 Patent and the '557 Patent share an inventor, Daichi Imamura. '792 Patent, at [75] Inventors, [73] Assignee; '557 Patent, at [75] Inventors, [73] Assignee; '919 Patent, [73] Assignee. Again, this comports with Mr. Imamura's deposition testimony that "control information" is "information other than user information." Imamura Dep. 69:1–11 (Dkt. No. 78-1 at 6).

Because the Court rejects Defendants' proposed construction of "control information," the Court determines that there is no remaining dispute with respect to whether "receiving unit" is governed by § 112, ¶ 6—or whether "receiving unit" renders any claim indefinite. At the hearing, Defendants confirmed what is apparent from the briefing—Defendants' challenge to "receiving unit" as an indefinite means-plus-function limitation rests on its contention that the unit is configured to receive information to be reported to the base station. Having rejected that contention, Defendants necessarily fail to prove that "receiving unit" is governed by § 112, ¶ 6 or that it renders any claim indefinite.

Accordingly, the Court rejects Defendants' proposed construction of "control information," determines that "control information" carries its plain and ordinary meaning and needs no further construction, finds that Defendants have failed overcome the presumption "receiving unit" is not governed by § 112 ¶ 6, and holds that Defendants have failed to prove that "receiving unit" renders any claim indefinite.

E-2. "selecting unit"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"selecting unit" • '557 Patent Claim 1	No construction necessary. Plain and ordinary meaning. Not governed by 35 U.S.C. § 112, ¶ 6. Alternative: • **Structure**: Signature selecting section 111, as shown in Figures 1 and 10 and/or equivalents thereof; as further shown and described at: Fig. 1, Fig. 3, Fig. 10, col./line 4:57–63, 8:37 – 9:3, 9:27 – 48.	Governed by 35 U.S.C. § 112, ¶ 6. Indefinite **Structure**: Insufficient because only software and a general purpose processors are disclosed. **Function**: "randomly select a sequence from a plurality of sequences contained in one group of a plurality of groups, into which a predetermined number of sequences that are generated from a plurality of base sequences are grouped and which are respectively associated with different amounts of data or reception qualities, wherein the predetermined number of sequences are grouped by partitioning the predetermined number of sequences, in which sequences generated from the same base sequence and having different cyclic shifts are arranged in an increasing order of the cyclic shifts"

The Parties' Positions

Plaintiffs submit that "selecting unit" connotes sufficient structure so that § 112, ¶ 6 does not apply. Dkt. No. 66 at 41–44. Plaintiffs contend the claim language itself recites the function

and environment of the selecting unit in such detail which connotes sufficiently definite structure to one of skill in the art—"a random access sequence selection structure." *Id*. at 41–43 (citing Gitlin Decl. ¶¶ 76–85 (Dkt. No. 66-2 at 25–29)). Plaintiffs further contend that the structural nature of "selecting unit" is also apparent from prior-art references cited on the face of the patent. *Id*. (citing Patent Application Publ'n No. 2010/0278114 ¶ 236 ("sequence selecting unit") (Dkt. No. 66-14 at 32); U.S. Patent Application Publ'n No. 2008/0192678 ¶ 42 ("sequence . . . selected by a preamble generator") ((Dkt. No. 66-15 at 20)). Plaintiffs note that the '557 Patent describes the "selecting unit" as structure—the signature selecting section. *Id*. at 42 (citing '557 Patent col.2 ll.59–61). And, Plaintiffs argue, even if § 112, ¶ 6 were to apply, the signature selecting section, and how it fits and operates in the context of the exemplary embodiments, is described in detail in the patent. *Id*. at 43–44.

In addition to the claims, Plaintiffs cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent, at [54] Title, col.1 l.65 – col.2 l.7, col.2 ll.57–67, col.3 l.18 – col.7 l.49, col.8 l.55 – col.9 l.3, col.9 ll.6–12, col.9 ll.30–32, figs.1, 4, 5, 9, 10, 11; U.S. Patent Application Publ'n No. 2010/0278114 (Plaintiffs' Ex. B-12, Dkt. No. 66-14); U.S. Patent Application Publ'n No. 2008/0192678 (Plaintiffs' Ex. B-13, Dkt. No. 66-15). **Extrinsic evidence**: Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2).

Defendants respond that "unit" of "selection unit" is a nonce word and the presumption against applying § 112, ¶ 6 is overcome. Dkt. No. 78 at 41–42. Defendants argue that there is no extrinsic evidence that "selection unit" is a term of art that refers to structure, that the Plaintiffs' expert's opinion is based solely on the disclosure in the '557 Patent, and that, therefore, the term invokes § 112, ¶ 6. *Id*. Defendants submit that the structure identified by Plaintiffs expert is either function (not structure) or is unconstrained structure (i.e., any and all structure). *Id*. at 42.

Thus, Defendants argue, the patent does not sufficiently disclose structure for performing the claimed function and "selection unit" renders the claims invalid as indefinite. *Id*. at 42–44.

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent col.4 ll.57–67, col.5 ll.25–36, col.5 ll.45–57, col.5 l.62 – col.6 l.6, col.9 ll27–29, col.9 ll37–49. **Extrinsic evidence**: Kotzin Decl. (Defendants' Ex. 7, Dkt. No. 79-11); Gitlin Decl. (Plaintiffs' Ex. B, Dkt. No. 66-2); Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14).

Plaintiffs reply that Defendants' indefiniteness argument improperly focuses on the term "selecting unit" in a vacuum, and fails to consider the structure-connoting effect of the surrounding claim language. Dkt. No. 83 at 15–16. Plaintiffs reiterate their contention that "selecting unit," in the context of the claims, is structural. *Id*. at 16 (citing Gitlin Decl. ¶¶ 76–85 (Dkt. No. 66-2 at 25–29); Gitlin Reply Decl. ¶¶ 13–22 (Plaintiffs' Ex. K, Dkt. No. 83-3 at 5–8)). Plaintiffs further reply that even if § 112, ¶ 6 applies, the statue allows that structure may be disclosed through an algorithm and the '919 Patent discloses a detailed algorithm that meets the statutory requirement. *Id*. (citing '557 Patent cols.1–6; Gitlin Reply Decl. ¶¶ 13–22 (Dkt. No. 83-3 at 5–8)).

Plaintiffs cite further intrinsic and extrinsic evidence to support their position: **Intrinsic evidence**: '557 Patent cols. 1–6. **Extrinsic evidence**: Gitlin Reply Decl. (Plaintiffs' Ex. K, Dkt. No. 83-3).

Analysis

The issues are whether 35 U.S.C. § 112, ¶ 6 applies and whether the '557 Patent discloses adequate structure if § 112, ¶ 6 applies. Because the Court finds that 35 U.S.C. § 112, ¶ 6 does not apply, it does not reach the second issue.

The "selecting unit" term does not include the "means" language. Therefore, the Court presumes that § 112, ¶ 6 does not apply. *Williamson v. Citrix Online*, LLC, 792 F.3d 1339, 1347–49 & n.3 (Fed. Cir. 2015) (en banc in relevant portion). "[T]he presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id.* at 1349 (quotation marks omitted). Here, Defendants have not overcome the presumption.

> The invention claimed is:
> 1. A mobile station apparatus comprising:
> a receiving unit configured to receive control information;
> a selecting unit configured to randomly select a sequence from a plurality of sequences contained in one group of a plurality of groups, into which a predetermined number of sequences that are generated from a plurality of base sequences are grouped and which are respectively associated with different amounts of data or reception qualities, wherein the predetermined number of sequences are grouped by partitioning the predetermined number of sequences, in which sequences generated from the same base sequence and having different cyclic shifts are arranged in an increasing order of the cyclic shifts; and
> a transmitting unit configured to transmit the selected sequence,
> wherein a position at which the predetermined number of sequences are partitioned is determined based on the control information, and a number of sequences contained in each of the plurality of groups varies in accordance with the control information.

In claims of the '557 Patent, "unit" in combination with a recitation of capability, denotes structure. For instance, although the parties originally disputed whether "transmitting unit" is structural, *see* Dkt. 66 at 44, the parties ultimately agreed the term did not need to be presented to the Court for construction, Dkt. No. 104-1. From this, the Court understands that there is no dispute that "transmitting unit" is structural.

The term "selecting unit," like the term "transmitting unit," connotes structure. Even if the term "selecting unit" does not in isolation connote sufficiently definite structure, the claim itself recites details of how the unit functions within the claim. The claim states that the objective of the selecting unit is "to . . . select a sequence." The claim further states the "selecting unit" operates to achieve this objective by "randomly" selecting from a "plurality of sequences" that are "contained in one group of a plurality of groups" of a specific structure. The selected sequence is transmitted via the "transmitting unit." That is, the "selecting unit" is configured to

randomly select a sequence from a plurality of sequences contained in a specifically structured group of groups of sequences and the "transmitting unit" is configured to transmit the selected sequence. So, the "selecting unit" is connected to the "transmitting unit" in such a way so as to enable the transmitting unit to transmit the sequence selected by the "selecting unit."

In the context of a mobile-communication-system patent and a claim to a "mobile station apparatus," the "selecting unit" is a specially configured electronic circuit. For example, the patentee noted that although the exemplary embodiments are "configured by hardware," the unit may be an integrated circuit (e.g., LSI, IC), a programmed processor circuit, or a programmed logic circuit (e.g., FPGA). *See* '557 Patent col.9 ll.26–48. The Court recognizes the patentee noted that the particular circuit implementation is not limited to the then-known circuit-building technology—advancements in semiconductor technology or biotechnology may allow the circuit to be otherwise constructed—according to the objectives and operations of the "selecting unit." *See* col.9 ll.44–48. But this does not changes the fundamental structure of the unit as a circuit.

Such a disclosure of the objectives of the "selecting unit," and how it operates within the context of the claimed invention, connotes sufficiently definite structure to one of skill in the art.[10] See, *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004) ("circuit [for performing a function]" found to be sufficiently definite structure because the claim recited the "objectives and operations" of the circuit); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1295, 1301 (Fed. Cir. 2014) ("heuristic [for performing a function]" found to be

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[10] According to Dr. Gitlin, "a person of ordinary skill in the art would have a bachelor's degree in Electrical Engineering, Computer Engineering, or a related field, and at least two years of experience in the design, development, and/or testing of cellular base stations or mobile devices." Gitlin Decl. ¶ 28 (Dkt. No. 66-2 at 7). According to Dr. Kotzin, "a person of ordinary skill in the art has at least a bachelor's degree in electrical engineering, computer engineering, physics, or the like and at least 1–3 years of experience working with the design, development, and/or testing of cellular base stations or mobile devices." Kotzin Decl. ¶ 35 (Dkt. No. 79-11 at 12–13).

sufficiently definite structure in part because the claim described the operation and objectives of the heuristic); *Finjan, Inc. v. Proofpoint, Inc.*, No. Case No. 13-cv-05808-HSG, 2015 WL 7770208, at *11 (N.D. Cal. Dec. 3, 2015) ("processor [for performing a function]" found to be sufficiently definite structure because the claim described how the processor functions with the other claim components); *SuperSpeed, LLC v. Google, Inc.*, Civil Action No. H-12-1688, 2014 WL 129225, at *22 (S.D. Tex. Jan. 14, 2014) (code for performing a function connotes sufficiently definite structure).

Accordingly, the Court determines that this term is not governed by 35 U.S.C. § 112, ¶ 6 and needs no further construction.

E-3. "which are respectively associated with different amounts of data or reception qualities"

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"which are respectively associated with different amounts of data or reception qualities" • '557 Patent Claims 1, 10	No construction necessary. Plain and ordinary meaning.	"where each of the plurality of groups is associated with only one of different amounts of data or reception qualities"

The Parties' Positions

Plaintiffs submit the claim allows association with both the different amounts of data and with reception quality—that the "or" in "associated with different amounts of data *or* reception quality" is an inclusive "or." Dkt. No. 66 at 40. Plaintiffs contend this is the plain meaning of "or." *Id*. Plaintiffs submit that the '557 Patent describes exemplary embodiments that use both the amounts of data and the reception qualities. *Id*. (citing '557 Patent col.9 ll.17–21).

In addition to the claims, Plaintiffs cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent col.9 ll.17–21. **Extrinsic evidence**: *Merriam Webster's Collegiate Dictionary* ("or") (Plaintiffs Ex. H, Dkt. No. 66-22).

Defendants respond that to give "respectively" meaning, each group of sequences that is *respectively* associated with "different amounts of data or reception qualities" is associated with either "different amounts of data" or with "reception qualities," but not both. Dkt. No. 78 at 25–28. Defendants further respond that the ordinary meaning of "or" is disjunctive—that "or" in a list means the items in the list are mutually exclusive and "or" should not be interpreted as "and/or." *Id*. (citing *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1331 (Fed. Cir. 2001)). Defendants respond that the '557 Patent describes sending only a single type of control information—it does not describe simultaneously sending multiple types of control information. *Id*. at 27. Defendants contend that simultaneously sending multiple types of control information requires complexity beyond the patent. *Id*. at 27–28.

In addition to the claims, Defendants cite the following **intrinsic evidence** to support their position: '557 Patent col.9 ll.17–21, fig.4.

Plaintiffs reply that "respectively" in the term does not mean what Defendants advocate; rather, "respectively" means that each group is associated with different information—that the groups are not collectively associated with the same information. Dkt. No. 83 at 14. Plaintiffs contend that '557 Patent does not dictate that each group is restricted to only "amounts of data" or "reception quality," and not both. According to Plaintiffs, the patentee established in the prosecution of a parent application that in some instances, "each group provides an indication of an amount of data *and* a reception quality." *Id*. (quoting '473 Patent File Wrapper December 22, 2011 Amendment 2 (Dkt. No. 83-4 at 3)) (emphasis added by Defendants). Plaintiffs contend

that the '557 Patent expressly states that a single "type" of control information can indicate both "amounts of data" and "reception quality." *Id*. at 10–11 (citing '557 Patent col.9 ll.17–21).

Plaintiffs cite further **intrinsic evidence** to support their position: '473 Patent File Wrapper December 22, 2011 Amendment (Plaintiffs' Ex. L, Dkt. No. 83-4).[11]

<u>Analysis</u>

The issue here is whether a group of sequences may be associated with both "different amounts of data" and "reception qualities." The Court determines that under the plain meaning of the claim language, it can be associated with both.

To begin, the Court agrees with Plaintiffs that the term "respectively" is used in the claim language at issue to denote that each group of sequences is associated with different information. That is, the groups in the "plurality of groups" are respectively associated with different information. No two groups are associated with the same information and that different information is the "different amounts of data or reception qualities."

The Court also agrees with Plaintiffs that each group may be associated with both "different amounts of data" and different "reception qualities," so long as no two groups are associated with the same information. The term "or" in a list does not necessarily mean that the items in the list are mutually exclusive alternatives. It is not clear that the case that Defendants cite dictates this result. In *Kustom Signals, Inc. v. Applied Concepts, Inc.*, the Federal Circuit construed "or" in a process list to denote a mutually exclusive list based on the presence of the words "either" and "or." 264 F.3d 1326, 1329 (Fed. Cir. 2001). In contrast, numerous Courts have noted that "or" may be used to denote an inclusive list. *See, e.g., Allstate Ins. Co. v.*

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[11] U.S. Patent No. 8,139,473 (the "'473 Patent") issued from application number 12/293,530. The '557 Patent issued from a continuation of application number 12/293,530. '557 Patent, at [63] Related U.S. Application Data.

Plambeck, 66 F. Supp. 3d 782, 788 (N.D. Tex. 2014) ("The ordinary meaning of 'or,' as used disjunctively, is not to indicate an exclusive alternative—that is, one or the other but not both. At least, that is not the only ordinary usage of the word 'or.' Rather, the word 'or' can be used in both an 'inclusive' sense ('A or B [or both]') and an 'exclusive' sense ('A or B [but not both]')." (quoting *Shaw v. Nat'l Union Fire Ins. Co. of Pittsburgh, Pa.*, 605 F.3d 1250, 1254 n.8 (11th Cir. 2010))); *B-50.com, LLC v. InfoSync Servs.*, LLC, Civil Action No. 3:10-cv-1994-D, 2014 WL 285096, at *6 (N.D. Tex. Jan. 27, 2014) ("Authorities agree that or has an inclusive sense as well as an exclusive sense. . . . Although 'or' is used in both senses in common usage, the meaning of or is usually inclusive." (quoting Bryan A. Garner, Garner's Dictionary of Legal Usage 639 (3d ed. 2011) (emphasis in original, quotation and modification marks omitted)); *DietGoal Innovations LLC v. Chipotle Mexican Grill, Inc.*, Civil Action No. 2:12-cv-764-WCB, 2015 WL 164072, at *3 (E.D. Tex. Jan. 13, 2015) (Bryson, J.) ("It is well recognized that the word 'or' can be used in either an inclusive or an exclusive sense, depending on context."). Indeed, the Federal Circuit has held that, depending on the context, the word "or" can be either conjunctive or disjunctive. *See, e.g., Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 680 (Fed. Cir. 2015) ("The conjunctive interpretation is also consistent with proper grammar, where the phrase 'not A, B, or C' means 'not A, not B, and not C.'"). Lower courts have also construed "or" in a list of items in a patent claim to be inclusive. *See, e.g., B-50.com, LLC*, 2014 WL 285096, at *6 (construing "enables the restaurant-industry user to view or obtain the generated custom report using the Internet" to encompass, but not require, both viewing and obtaining (modification marks omitted)).

In the context of the patent, "or" in the phrase is conjunctive. For example, the purpose of the invention is to provide technology for "efficiently reporting control information in the

RACH." '557 Patent col.1 ll.60–63. That control information is diverse, including both amounts of data and reception qualities. *Id.* at col.1 ll.33–39, col.9 ll.16–23. And the technology is efficient because the mobile "does not need to transmit control information in addition to signatures" and the base station "can detect control information by detecting the signature at the same time." *Id.* at col.5 ll.36–44. The only complexity that the Court perceives with respect to associating more than one type of control information with a group of sequences is that there will be more categories of different information. This will require more groups of sequences, and therefore more sequences. But the Court does not understand that the invention is limited in the number of sequences it may generate in any way that would dictate Defendants' proposed construction.

Accordingly, the Court rejects Defendants' proposed "associated with only one of different amounts of data or reception qualities" and determines that "which are respectively associated with different amounts of data or reception qualities" has its plain and ordinary meaning and needs no further construction.

E-4. **"different amounts of data or reception qualities"**

Disputed Term	Plaintiffs' Proposed Construction	Defendants' Proposed Construction
"different amounts of data or reception qualities" • '557 Patent Claims 1, 10	No construction necessary. Plain and ordinary meaning.	"(1) amounts of data that are different than amounts of data associated with all of the other groups; or (2) reception qualities that are different than reception qualities associated with all of the other groups"

The Parties' Positions

Plaintiffs submit that meaning of the term in the context of the claim is plain: "one group of sequences is associated with amounts of data or reception qualities, another group is

associated with different amounts of data or reception qualities, and so on." Dkt. No. 66 at 40. Plaintiffs contend that the claim allows for overlap in the amounts of data or reception qualities associated with two different groups of sequences. *Id*.

Defendants respond that "different" in "different amounts of data or reception qualities" means that the amounts of data or reception qualities associated with one group of sequences cannot overlap with the amounts of data or reception qualities associated with a different group of sequences. Dkt. No. 78 at 28–29. Defendants contend the invention is described such that there is no overlap and that the lack of overlap is essential to the operation of the described invention. *Id*. Specifically, Defendants contend, if the information associated with one group overlaps with the information associated with a different group, then the phone would not be able to determine which code to send to the base station and the base station would not be able to definitively determine what information is represented by the code—and the invention would not work. *Id*. (citing Gitlin Dep. 28:19–24 (Dkt. No. 79-14 at 8)).

In addition to the claims, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '557 Patent figs.3, 4. **Extrinsic evidence**: Gitlin Dep. (Defendants' Ex. 8, Dkt. No. 79-14).

Plaintiffs reply that the '557 Patent allows overlap among the different amounts of data and among the different reception qualities, and that the invention works with such overlap. Dkt. No. 83 at 15 (citing Imamura Dep. 89:4–15, 97:11–12, 98:1–5, 100:18–23 (Dkt. No. 83-5 at 3–4)).

Plaintiffs cite further **extrinsic evidence** to support their position: Imamura Dep. (Plaintiffs' Ex. M, Dkt. No. 83-5).

Analysis

The issue is whether "different" in the claim term means "without any overlap." The Court understands that the "different amounts of data or reception qualities" allows for overlap.

The Court does not understand the invention—or the claims—to fail if there is an overlap of information between or among groups of sequences. First, in the exemplary embodiments, the sequences are associated with ranges of a particular piece of control information. *See, e.g.*, '557 Patent figs.3–4 (ranges of SINR). So even in the exemplary embodiments, the base station knows only the range of the particular piece of control information that is associated with the sequence. If there the ranges overlap, the base station will still know the range associated with the transmitted sequence, even if the particular piece of control information may fall into another range associated with a different sequence group. Second, it is not clear that the mobile station would be unable to choose a sequence if the control information fell into more than one range. The only evidence on that issue is the deposition testimony of one of the inventors named on the '557 Patent, presumably one of at least ordinary skill in the art. Imamura Dep. 89:4–15, 97:11–12, 98:1–5, 100:18–23 (Dkt. No. 83-5 at 3–4). Mr. Imamura testified that the invention will work with overlap among the "different amounts of data or reception qualities" and the Court has no reason to believe otherwise.

Accordingly, the Court rejects Defendants' proposed construction, and determines that "different amounts of data or reception qualities" has its plain and ordinary meaning and needs no further construction.

V. CONCLUSION

The Court adopts the above constructions set forth in this opinion for the disputed and agreed terms of the Asserted Patents. The parties are ordered that they may not refer, directly or

indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion other than the actual definitions adopted by the Court in the presence of the jury. Although any reference to claim construction proceedings is limited to informing the jury of the actual definitions adopted by the Court the testimony of all witnesses are bound by the Court's reasoning in this Order.

SIGNED this 19th day of April, 2016.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE