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

HUAWEI TECHNOLOGIES CO. LTD, § § *Plaintiff,* § § v. § § T-MOBILE US, INC., ET AL., § § *Defendants,* § § NOKIA SOLUTIONS AND NETWORKS § US LLC, NOKIA SOLUTIONS AND § NETWORKS OY, § TELEFONAKTIEBOLAGET LM § ERICSSON, and ERICSSON INC. § § *Intervenors.* §	Case No. 2:16-CV-00056-JRG-RSP

MEMORANDUM OPINION AND ORDER

On March 16, 2017, the Court held a hearing to determine the proper construction of the disputed claim terms in United States Patent Nos. 8,638,750 ("the '750 Patent"), 8,537,779 ("the '779 Patent"), and 8,031,677 ("the '677 Patent") (collectively "the Asserted Patents"). The Court has considered the arguments made by the parties at the hearing and in their claim construction briefs. Dkt. Nos. 124, 130, 131, & 139.[1] The Court has also considered the intrinsic evidence and made subsidiary factual findings about the extrinsic evidence. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The Court issues this Claim Construction Memorandum and Order in light of these considerations.

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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

A.   The '779 and '750 Patents

The '779 Patent was filed on October 19, 2009, issued on September 17, 2013, and is titled "Method, System, and Apparatus for Registration Processing." The '750 Patent was filed on July 27, 2009, issued on January 28, 2014, and is titled "Method and Network Device for Creating and Deleting Resources." The '779 and '750 Patents generally relate to a "handover between a 3GPP access system (such as GERAN/UTRAN/E-UTRAN) and a Non-3GPP access system (such as WLAN/Wimax and so on)." '750 Patent at 1:61–63. The specification discusses a number of drawbacks in the existing handover process. Specifically, the specification states the following:

> 1. [NO MECHANISM TO RECOVER RESOURCES] During handover from the Non-3GPP system to the 3GPP system, in order to guarantee service continuity for the UE, the 3GPP system need recover the resources used by the UE in the Non-3GPP system access system, however, there is no such a mechanism in the existing handover process from the Non-3GPP system to the 3GPP system.
> 2. [NO MECHANISM FOR DIFFERENTIATING ACCESS PROCESSES] In a normal 3GPP access process, the 3GPP system only creates a default bearer for the UE. However, in an access process during handover from the Non-3GPP system to the 3GPP system, the 3GPP system need recover the resources used by the UE in the Non-3GPP system access system. Above two access processes are different, and the 3GPP system need differentiate the two different access processes, but there is no such a mechanism for differentiating the different access processes in the existing 3GPP system.
> 3. [ONLY ONE DEFAULT BEARER IS CREATED] In an access process in the existing 3GPP system, the UE initiates the establishment of one default bearer only, in other words, the MME can only initiates a Create Default Bearer process to one PDN GW. If the UE uses multiple PDN GWs in the Non-3GPP access system, the existing mechanism cannot work.
> 4. [SERVICE INTERRUPTIONS AND OUTAGES] In the prior art, the handover between the Non-3GPP system and the 3GPP system is a "loosely coupled" handover, in other words, the UE firstly disconnects form the source system, and then completes the handover through the access process in the destination system. In such a way of handover, the service may be interrupted for a long time and may possibly be turned down. There is no mechanism in prior art about how to optimize the handover between the Non-3GPP system and the 3GPP system so as to decrease the service interruption time for the UE.
> 5. [RESOURCES NOT RELEASED] When the UE accesses a Non-3GPP access system, the Non-3GPP access system may allocate resources to the UE. When abnormal switch off or offline occurs on the UE, the resources allocated to

the UE by the Non-3GPP access system will not be released. When the UE newly accesses to a 3GPP access system, the resources which was allocated to the UE by the Non-3GPP access system need be released, however there is no such a mechanism for handling this in the prior art.

Id. at 2:47–3:19 (Annotated).

To address these problems, the specification states that "[t]he present invention aims at providing a method for creating resources, a method for deleting resources, and a network device, in which an initial access process and a handover process for a User Equipment (UE) may be differentiated so as to perform corresponding processes on resources." *Id.* at 3:23-28. For example, the '779 Patent discloses an "optimized handover mechanism" such that, during a handover from a non-3GPP network to a 3GPP network, the target 3GPP network receives a notice "to create the bearer on the access network side in the handover process in order to speed up service recovery time after the UE hands over to the target access network." '779 Patent at 1:51–67. To accomplish this, the network receives an additional piece of information, such as an "information element (IE) indicating handover" in its attach request message to the LTE system. *Id.* at 6:37–47, Claim 1. Because the attach request message includes a handover indication, the LTE system knows it must initiate a bearer creation procedure to re-create the UE's bearers. *Id.* at 8:12–17, Claim 1.

Claim 1 of the '779 Patent is an exemplary claim and recites the following elements:

> 1. A handover processing method, comprising:
> receiving, by a Mobility Management Entity (MME), an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Partnership Project (non-3GPP) network to a 3rd Generation Partnership (3GPP) network, wherein the attach request message comprises an information element (IE) indicating handover;
> identifying, by the MME, a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non-3GPP network by communicating with a Home Subscriber Server (HSS); and
> requesting, by the MME, the PDN GW to initiate a bearer creation procedure.

The '779 Patent is primarily directed toward a procedure that results in the recreation of the non-3GPP bearers in the 3GPP network. The '750 Patent is primarily directed toward the messaging in this procedure by indicating to the PDN GW that different resources are to be created. *See e.g.*, '750 Patent at 6:10–8:57. Specifically, the '750 Patent describes the particular messaging between the UE, MME, and PDN-GW during a handover procedure. *See, e.g.*, *id.* at Claim 1.

Claim 1 of the '750 Patent is an exemplary claim and recites the following elements (disputed term in italics):

> 1. A mobility management network device comprising:
> *a receiver*; and
> *a transmitter configured to communicatively connect with the receiver*,
> wherein, during a handover from a non-3rd Generation Partnership Project (non-3GPP) access system to a 3GPP access system,
> *the receiver is configured to receive, from a user equipment (UE), an access request message for access the 3GPP access system*; and
> *the transmitter is configured to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system,*
> *wherein the access request message includes first handover indication information indicating that the access is a handover access;*
> *wherein, in response to the first handover indication information being included in the access request message, the resource request message is configured to include second handover indication information, which indicates that the resource request message is caused by a handover access; and*
> *wherein the second handover indication information is configured to be carried by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause.*

B. The '677 Patent

The '677 Patent was filed on June 27, 2011, issued on October 4, 2011, and is titled

"Method, System, and Device for User Detachment When a Handover or Change Occurs in Heterogeneous Network." The '677 Patent generally relates to handovers from a 3GPP network (*e.g.*, LTE) to a non-3GPP network (*e.g.*, Wi-Fi). As background, the specification indicates that context information for the UE is stored in the MME. *See*, *e.g.*, '677 Patent at 2:60–65. The specification describes the problem with the prior art handover procedure as follows: "when the UE is handed over or switched from a 3GPP network to a non-3GPP network, the 3GPP network merely deletes the bearer resources of the UE, but does not delete the mobility management context of the UE." *Id.* at 3:10–16.

To address this problem, the specification discloses inserting a "cause" information element in the delete bearer request that is received by the MME. *Id.* at 12:49–54 ("In step 608a, . . . the serving GW sends the received delete bearer request message to the MME, and adds a cause IE in the delete bearer request message to indicate the reason of the deletion."). The "cause IE" indicates to the MME that "the bearer deletion [is] caused by the handover or switching of the UE from the 3GPP network to the non-3GPP network." *Id.* at 12:55–60. This enables the MME to distinguish between delete bearer requests caused by a handover (*i.e.*, those that trigger a deletion of the MM context) and those that are caused by other procedures where it may be beneficial to retain the context. After receiving the delete bearer request with the "cause IE," the MME then deletes the bearers associated with the UE and detaches it from the network (*i.e.*, deletes the MM context associated with the UE). *Id*. at Claim 1.

Claim 1 of the '677 Patent is an exemplary claim and recites the following elements (disputed term in italics):

> 1. *A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non-3GPP network occurs, comprising:*

receiving, by a mobility management entity (MME) of the 3GPP network, a delete bearer request sent by a serving gateway (GW) of the 3GPP network which carries a cause information element (IE), wherein the cause IE indicates the UE handovers from the 3GPP network to the non-3GPP network;

deleting, by the MME, bearer resources of the UE;

detaching, by the MME, the UE from the 3GPP network when all the bearer resources of the UE are deleted.

II. APPLICABLE LAW

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

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

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

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[2] Because all of 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.

ordinary skill in the art to have sufficiently definite meaning as the name for structure"); *Masco Corp.*, 303 F.3d at 1326 (§ 112, ¶ 6 does not apply when the claim includes an "act" corresponding to "how the function is performed"); *Personalized Media Communications, L.L.C. v. International Trade Commission*, 161 F.3d 696, 704 (Fed. Cir. 1998) (§ 112, ¶ 6 does not apply when the claim includes "sufficient structure, material, or acts within the claim itself to perform entirely the recited function . . . even if the claim uses the term 'means.'" (quotation marks and citation omitted)).

When it applies, § 112, ¶ 6 limits the scope of the functional term "to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof." *Williamson*, 792 F.3d at 1347. Construing a means-plus-function limitation involves multiple steps. "The first step . . . is a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). "[T]he next step is to determine the corresponding structure disclosed in the specification and equivalents thereof." *Id.* A "structure disclosed in the specification is 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* The focus of the "corresponding structure" inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id.* The corresponding structure "must include all structure that actually performs the recited function." *Default Proof Credit Card Sys. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). However, § 112 does not permit "incorporation of structure from the written description beyond that necessary to perform the claimed function." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

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

III.   CONSTRUCTION OF AGREED TERMS

During the claim construction hearing, the parties agreed to the construction of the following term:

Claim Term/Phrase	Agreed Construction
"attach request" ('750 Patent, claims 2, 3, 8, 9, 14, 15)	"attach request message"

The parties originally disputed whether the "access request message" must contain an "attach request," as Defendants contend. Defendants argue that the claims are indefinite because they fail to provide notice of what the attach request is (*e.g.*, a message, an information element, or something else). Plaintiff argues that the claims are directed to a specific embodiment wherein the "access request message" is an "attach request" message, not necessarily where the access request message contains a separate attach request. Without waving their right to appeal, Defendants agree that the term "attach request" should be construed to mean "attach request message."

A claim is definite so long as it informs, with "reasonable certainty" those skilled in the art about the scope of the invention. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124, (2014). The specification states that "[t]he UE may send to a first network element at network side

an *Attach Request message* for performing a handover process from the Non-3GPP access system to the 3GPP access system." '750 Patent at 6:14–17 (emphasis added). The specification further states that "[t]he first network element at network side may determine whether the received *access request* is a handover request from the Non-3GPP access system to the 3GPP access system or a normal *access request* (also referred to as an *initial access request*) through the following measures." *Id.* at 6:20–25 (emphasis added). Thus, the specification indicates that the recited "access request message" may include an "attach request," which is an "attach request message."

Defendants' indefiniteness argument hangs on the word "includes." Defendants argue that Plaintiff is attempting to re-draft the claim to say "the access request message *is* an attach request *message*." (Dkt. No. 130 at 23). The specification indicates that Attach Request message was a well-understood message in the prior art. Indeed, the specification states that the "existing handover process in the prior art" included an "Attach Request" message sent from a UE to an MME. '750 Patent at 2:6–7, 2:44–46. Here, dependent claim 2 specifies that "the *access request message* includes an *attach request*." *Id.* at Claim 2 (emphasis added). Defendants contend that "includes" means "contains." (Dkt. No. 130 at 23). According to Defendants, the claims are indefinite because there is no disclosure in the specification of an "access request message" containing an "attach request." *Id.*

It is a well-established canon of claim construction that the words "includes" or "including" are synonymous with "comprising." *SanDisk Corp. v. Memorex Products, Inc.*, 415 F.3d 1278, 1284 (Fed. Cir. 2005) ("As a patent law term of art, 'includes' means 'comprising.'"); *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 457 F.3d 1293, 1302–03 (Fed. Cir. 2006), cert. denied, 127 S. Ct. 2270 (U.S. 2007) ("'Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within

the scope of the claim. The word 'include' means the same thing."). In view of this well-established principle, claim 2 requires that the "access request message" of Claim 1 is, at least, the well-known attach request message.

Specifically, claim 1 recites that "the receiver is configured to receive, from a user equipment (UE), an *access request message* for access the 3GPP access system." Dependent claim 2 further specifies that the access request includes an attach request message by reciting "wherein the *access request message* includes an *attach request* and wherein the first handover indication information is carried by the attach request." The specification further indicates that the attach request message request access to network resources. *Id.* at 8:30–36 ("If the access process type is an access process caused by handover, the PDN GW may initiate a Dedicated Bearer Activation process at the network side according to the stored or modified PCC rules, to create the dedicated bearer corresponding to the PCC rules, in other words, to create resources in the 3GPP system to be required for the services which are used by the UE in the source Non-3GPP access system."). Accordingly, the Court finds that "attach request" informs a person of ordinary skill in the art the scope of the claims with reasonable certainty. The Court further agrees that the term "attach request" should be construed to mean "attach request message," and hereby **ADOPTS** the parties' agreed constructions.

IV. CONSTRUCTION OF DISPUTED TERMS

The parties' dispute focuses on the meaning and scope of twelve terms/phrases in the Asserted Patents.

1. "receiver," "transmitter," and "mobility management network device"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"a receiver . . . the receiver is configured to receive, from a user equipment (UE), an access request message for access the 3GPP access system; . . . wherein the access request message includes the first handover indication information indicating that the access is a handover access;"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** receive, from a user equipment (UE), an access request message for access the 3GPP access system **Structure:** access request determining unit 701 and equivalents thereof.	Indefinite for failure to disclose structure. **Function:** receive, from a user equipment (UE), an access request message for access the 3GPP access system; . . . wherein the access request message includes the first handover indication information indicating that the access is a handover access **Structure:** No corresponding structure disclosed.
"a transmitter configured to communicatively connect with the receiver, . . .the transmitter is configured to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system, . . . wherein, in response to the first handover indication information being included in the access request message, the resource request message is configured to include second handover indication information, which indicates that the resource request message is caused by a handover access; and wherein the second handover indication information is configured to be carried by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** communicatively connect with the receiver, . . . to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system, . . . **Structure:** process type notifying unit 702 and equivalents thereof.	Indefinite for failure to disclose structure. **Function:** to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system, . . . wherein, in response to the first handover indication info1mation being included in the access request message, the resource request message is configured to include second handover indication information, which indicates that the resource request message is caused by a handover access; and wherein the second handover indication info1mation is configured to be carried by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause **Structure:** No corresponding structure disclosed.

"a mobility management network device configured to be responsible for mobility management, wherein, during a handover of a user equipment (UE) from a non-3rd Generation Partnership Project (non-3GPP) access system to a 3GPP access system, the mobility management network device is configured to: receive, from the UE, an access request message for access the 3GPP access system; and send a resource request message to a packet data network gateway (PDN GW) to request the PDG GW to create resources for the UE to be used in the 3GPP access system, wherein the access request message includes first handover indication information indicating that the access is a handover access; and wherein, in response to the first handover indication information being included in the access request message, the mobility management network device is configured to include second handover indication information indicating that the resource request message is caused by a handover access into the resource request message; and, wherein the mobility management network device is configured to carry the second handover indication information by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** be responsible for mobility management, wherein, during a handover of a user equipment (UE) from a non-3rd Generation Partnership Project (non- 3GPP) access system to a 3GPP access system, receive, from the UE, an access request message for access the 3GPP access system; send a resource request message to a packet data network gateway (PDN GW) to request the PDG GW to create resources for the UE to be used in the 3GPP access system, to include second handover indication information indicating that the resource request message is caused by a handover access into the resource request message; carry the second handover indication information by an indication flag of the resource request message **Structure:** an MME or SGSN.	Indefinite, or not enabled under 35 U.S.C. § 112. **Function:** to be responsible for mobility management, wherein, during a handover of a user equipment (UE) from a non-3rd Generation Pa1tnership Project (non- 3GPP) access system to a 3GPP access system, the mobility management network device is configured to: receive , from the UE, an access request message for access the 3GPP access system; and send a resource request message to a packet data network gateway (PDN GW) to request the PDG GW to create resources for the UE to be used in the 3GPP access system, wherein the access request message includes first handover indication information indicating that the access is a handover access; and wherein, in response to the first handover indication info1mation being included in the access request message, the mobility management network device is configured to include second handover indication info1mation indicating that the resource request message is caused by a handover access into the resource request message; and, wherein the mobility management network device is configured to carry the second handover indication information by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause **Structure:** No corresponding structure disclosed.

a) The Parties' Positions

The parties dispute whether the phrases are subject to § 112 ¶ 6. Defendants contend that the terms are governed by § 112 ¶ 6, because they recite insufficient structure to perform their recited functions. Defendants further contend that the terms are indefinite, because the

specification does not recite any algorithm or corresponding structure that performs the recited functions. Regarding the term "receiver" and "transmitter," Defendants argue that the terms recite "function without reciting sufficient structure for performing that function," and therefore are means-plus-function terms under § 112, ¶ 6. (Dkt. No. 130 at 13) (citing *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1373-74 (Fed. Cir. 2015)). Defendants contend that the "receiver" and "transmitter" must perform a number of recited functions in claim 1, and that the terms do not impart sufficiently definite structure to a POSITA for performing these claimed functions. (Dkt. No. 130 at 14) (citing Dkt. No. 130-1 at ¶¶ 43, 44).

Defendants further argue that the specification confirms that the terms "receiver" and "transmitter" do not convey any structure for performing the recited functions to a POSITA. (Dkt. No. 130 at 14). Defendants contend that the specification does not use the terms "receiver" or "transmitter." *Id.* Defendants next contend that no known receiver structure serves as an "Access Request Determining Unit," and no known transmitter structure serves as a "Process Type Notifying Unit." *Id.* (citing Dkt. No. 130-1 at ¶ 46.). Defendants further contend that the specification fails to explain any structures associated with the boxes in Figure 10, and fails to explain any structural details of what lies inside the boxes. (Dkt No. 130 at 15) (citing '750 Patent at Figure 10, 27:1–31).

Defendants also contend that the claims of the '750 Patent are directed to wired network equipment, and not "wireless" communication arts. (Dkt. No. 130 at 15). Defendants argue that a "receiver" and "transmitter" may connote structure to a POSITA in a mobile device in certain circumstances, but those structures are not claimed by Plaintiff. *Id.* (citing Dkt. No. 103-1 at ¶ 45). Defendants also argue that network equipment within a packet core network (*e.g.*, MMEs and SGSNs) are computer servers that communicate with other network equipment (*e.g.*, the Serving

GW) over a wired connection via the Internet Protocol. (Dkt. No. 130 at 15). Defendants contend that the terms "receiver" and "transmitter" are not commonly understood terms for a structure that performs the recited functions in such network equipment. (*Id.* at 16) (citing Dkt. No. 130-1 at ¶ 45). According to Defendants, the terms "receiver" and "transmitter" fail to connote sufficiently definite structure and should be construed under § 112, ¶ 6. (Dkt. No. 130 at 16).

Defendants further argue that the "receiver" and "transmitter" terms are indefinite because the specification fails to disclose adequate structure that corresponds to the claimed functions recited for the "receiver" and "transmitter" terms. (*Id.* at 17). Defendants contend that the written description does not use the term "receiver" or "transmitter," or describe any structure corresponding to these terms. *Id.* Defendants also argue that Figure 10 only shows two boxes labeled "Access Request Determining Unit" and "Process Type Notifying Units." *Id.* According to Defendants, these boxes are merely labeled with the functions that each box should perform without any disclosure of structure. *Id.*

Regarding the term "mobility management network device," Defendants argue that the term is in a format consistent with traditional means-plus-function limitations. (*Id.* at 19). Defendants contend that the phrase "configured to" is recognized by the Patent Office as a linking word similar to "for." *Id.* Defendants argue that the word "device" is a nonce word that does not impart any structure. *Id.* Defendants further argue that the prefix "mobility management network" does not impart any structure for performing the recited function into the term "device." (*Id.* at 20) (citing Dkt. No. 130-1 at ¶ 51). According to Defendants, a POSITA would not have understood the term "mobility management network" to convey any structure for performing the functions recited in claim 13. (Dkt. No. 130 at 20) (citing Dkt. No 130-1 at ¶ 50).

Defendants also argue that the '750 Patent specification does not describe any internal

structural components of a "mobility management network device." (Dkt. No. 130 at 20).

Defendants contend that the specification merely shows a "first network device" in Figure 10

having two boxes labeled "Access Request Determining Unit" and "Process Type Notifying Unit,"

with the "Process Type Notifying Unit" having two smaller boxes labeled "First Notifying

Subunit" and "Second Notifying Subunit." *Id.* (citing '750 Patent at Fig. 10, 27:1–34). Defendants

argue that the labels and accompanying descriptions of these boxes merely describe the

functionality each box is supposed to perform. (Dkt. No. 130 at 20). Defendants contend that

"MME" or "SGSN" do not convey sufficient structure for performing the claimed functions, and

therefore cannot provide the necessary structure for the claimed mobility management network

device. *Id.* (citing Dkt. No. 130-1 ¶¶ 50–53). According to Defendants, the term "mobility

management network device" in claim 13 is a means-plus-function limitation under § 112, ¶ 6.

(Dkt. No. 130 at 21).

Defendants further argue that the term "mobility management network device" is indefinite

because the 750 Patent specification fails to disclose adequate structure that corresponds to the

claimed functions recited for the "mobility management network device." *Id.* Defendants contend

that the descriptions in the specification are limited to functional descriptions of the operation of

a "first network device." *Id.* (citing '750 Patent at Fig. 10, 27:1–34). Defendants argue that the

specification does not explain any structural elements of the MME or SGSN that could correspond

to the recited functions. (Dkt. No. 130 at 21) (citing Dkt. No. 130-1 at ¶ 53).

Plaintiff responds that each of these phrases use well-understood terms in the networking

and communications arts, such as a "receiver" or "transmitter," and include clauses describing

what types of data these structures are "configured to" receive or send. (Dkt. No. 124 at 12).

Plaintiff further argues that each of these terms are used within a larger network component, such

as an MME or SGSN, that must include those structures to achieve their purpose. *Id.* Plaintiff also contends that none of the disputed terms use the word "means," and thus are presumptively not subject to section 112 ¶ 6 construction. (*Id.* at 13). Plaintiff argues that all of the terms have a well-understood meaning in the art, and thus all of the terms recite sufficient structure. (*Id.* at 14). Plaintiff further argues that apparatus claims that recite structures using functional terms are not automatically subject to § 112 ¶ 6. *Id.*

Plaintiff also contends that persons of ordinary skill in the art would readily understand the meaning of a message receiver and transmitter in the context of the '750 Patent. *Id.* Plaintiff argues that a "transmitter" or "receiver" are one of "[m]any devices [that] take their name from the functions they perform." *Id.* (citing *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)). Plaintiff contends that these terms name well-known, definite structures, and therefore are not subject to § 112, ¶ 6. (Dkt. No. 124 at 14).

Plaintiff also argues that a person of ordinary skill would readily understand the terms "receiver" and "transmitter" in the context of the claims and specification of the '750 Patent. (*Id.* at 15). Plaintiff contends that the '750 Patent provides a detailed description of exemplary structure associated for the claimed "receiver" and "transmitter." *Id.* (citing '750 Patent at Figure 10). Plaintiff argues that Figure 10 includes an "Access Request Determining Unit 701" and "Process Type Notifying Unit 702." (Dkt. No. 124 at 16).

Regarding the term "mobility management network device," Plaintiff argues that the specification contains numerous descriptions of mobility management devices that are well-understood in the art, such as MMEs and SGSNs, performing the claimed functionality. *Id.* (citing '750 Patent at 6:10–25, 7:6–35, 6:17–20). According to Plaintiff, these disclosures demonstrate that the term "mobility management network device" has an understood meaning in the art and is

likewise not subject to § 112 ¶ 6. (Dkt. No. 124 at 16).

In the alternative, Plaintiff argues that even if these terms are construed under § 112, ¶ 6, the specification sets forth sufficient structure corresponding to the claims. (*Id.* at 17). Plaintiff contends that the specification describes sending, receiving, and processing messages in a manner that a person of ordinary skill in the art would readily know the structure that would be used for the claims. *Id.* Plaintiff argues that the "Access Request Determining Unit 701" provides sufficient structure for the claimed receiver, as it receives an access request message from a UE. *Id.* (citing '750 Patent at Fig. 10). Plaintiff further argues that the "process type notifying unit 702" and its sub-units are configured to "send a specific message to request for creating resources to be required for services which are used by the UE in an access system before handover," and thus provides sufficient structure for the claimed transmitter. (Dkt. No. 124 at 17-18) (citing '750 Patent at 27:18–31). Plaintiff also contends that the specification includes several structural descriptions for a mobility management network device, such as an MME or SGSN. (Dkt. No. 124 at 18) (citing '750 Patent at 6:17–20).

In its reply, Plaintiff argues that a person of skill would understand the terms "receiver," "transmitter," and "mobility management network device" themselves to impart structural details. (Dkt. No. 139 at 4) (citing Dkt. No. 139-1 at ¶¶ 34-35). Plaintiff contends that the terms are described within the context of their inputs, outputs, and interactions with other units in ways that inform the character of these limitations. (Dkt. No. 139 at 4). Plaintiff further contends that each of the challenged terms does have sufficient structure within the '750 Patent. (*Id.* at 5). Plaintiff argues that the claimed "mobility management network device" in the '750 Patent comprises a receiver and transmitter in an inventive arrangement within the network, not any inventive mechanism inside such transmitter and receiver. *Id.* According to Plaintiff, the focus of the

invention is not on the inside of the claimed structures, but on what inputs and outputs they receive, send, or store, and how they interact with each other within the claimed communication device. *Id*. Plaintiff further contends that Defendants cannot plausibly argue that the requisite circuitry or algorithm is more complex than the claimed functions themselves. *Id.* Plaintiff argues that they are simple components, and a person of ordinary skill in the art would readily know how they work within the claimed communication devices (*e.g*., MME or SGSN). (*Id.* at 5-6) (citing Dkt. No. 139-1 at ¶¶ 36-38, 42).

For the following reasons, the Court finds that the term **"receiver"** is not subject to § 112, ¶ 6, and should be construed to mean **"receiver of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court further finds that the term **"transmitter"** is not subject to § 112, ¶ 6, and should be construed to mean **"transmitter of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court also finds that the term **"mobility management network device"** is not subject to § 112, ¶ 6, and should be construed to mean **"Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."**

b) Analysis

The phrase "a receiver . . . the receiver is configured to receive, from a user equipment (UE), an access request message for access the 3GPP access system; . . . wherein the access request message includes the first handover indication information indicating that the access is a handover access;" appears in claim 1 of the '750 Patent. The phrase "a transmitter configured to communicatively connect with the receiver, . . . the transmitter is configured to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system, . . . wherein, in response to the first handover indication

information being included in the access request message, the resource request message is configured to include second handover indication information, which indicates that the resource request message is caused by a handover access; and wherein the second handover indication information is configured to be carried by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause" appears in claim 1 of the '750 Patent.

The phrase "a mobility management network device configured to be responsible for mobility management, wherein, during a handover of a user equipment (UE) from a non-3rd Generation Partnership Project (non-3GPP) access system to a 3GPP access system, the mobility management network device is configured to: receive, from the UE, an access request message for access the 3GPP access system; and send a resource request message to a packet data network gateway (PDN GW) to request the PDG GW to create resources for the UE to be used in the 3GPP access system, wherein the access request message includes first handover indication information indicating that the access is a handover access; and wherein, in response to the first handover indication information being included in the access request message, the mobility management network device is configured to include second handover indication information indicating that the resource request message is caused by a handover access into the resource request message; and, wherein the mobility management network device is configured to carry the second handover indication information by an indication flag of the resource request message, the indication flag including one of a handover indication flag, a create type flag which is set to be handover create, and cause flag which is set to be handover cause," appears in claim 13 of the '750 Patent.

"It is well settled that '[a] claim limitation that actually uses the word 'means' invokes a

rebuttable presumption that § 112, [¶] 6 applies.'" *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1371 (Fed. Cir. 2003) (quotation omitted). It is also equally understood that "a claim term that does not use 'means' will trigger the rebuttable presumption that § 112, [¶] 6 does not apply." *Id.* (quotation omitted). The presumption against the application of § 112, ¶ 6 may be overcome if a party can "demonstrate[] that the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Williamson*, 792 F.3d at 1339 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). "In undertaking this analysis, we ask if the claim language, read in light of the specification, recites sufficiently definite structure to avoid § 112, ¶ 6." *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014) (citing *Inventio AG v. Thyssenkrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1357 (Fed. Cir. 2011)).

None of the claims recite the word "means." Therefore, there is a rebuttable presumption that § 112, ¶ 6 does not apply. Defendants have failed to rebut the presumption because "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure." *Williamson*, 792 F.3d at 1348. Specifically, the intrinsic evidence demonstrates that a person of ordinary skill in the art would understand the necessary structure of the "receiver" and "transmitter" in claim 1 of the '750 Patent, as well as the necessary structure of the "mobility management network device" in claim 13 of the '750 Patent.

The specification states that "[t]he UE may send to a first network element at network side an Attach Request message for performing a handover process from the Non-3GPP access system to the 3GPP access system." '750 Patent at 6:14–17. Using similar language, claim 1 recites that the "receiver" of the mobility management network device "is configured to receive, from a user equipment (UE), an access request message." Similarly, claim 13 recites that "the mobility

management network device is configured to: receive, from the UE, an access request message."
The specification states that the first network element "may be an MME in a System Architecture
Evolution (SAE) system, and may be a GPRS Supporting Node (SGSN) in a GPRS/UMTS
system." *Id.* at 6:17–20. Thus, a person of ordinary skill would understand that the claimed
"mobility management network device" is "a Mobility Management Entity (MME) or a Serving
GPRS Support Node (SGSN)." Likewise, a person of ordinary skill would understand that the
claimed "receiver" is a "receiver of a Mobility Management Entity (MME) or a Serving GPRS
Support Node (SGSN)."

Indeed, the specification provides a description of an exemplary structure of the claimed
"receiver" in Figure 10. The specification states that Figure 10 illustrates "the structure of a first
network device according to an embodiment of the present invention," and that "[t]he first network
device includes an access request determining unit 701." '750 Patent at 27:1-5. The specification
further states that "[t]he first network device may be integrated into an MME, or an SGSN . . . ."
'750 Patent at 27:23–34.

Figure 10 also illustrates a first notifying subunit 703 that is "adapted to send a Create
Bearer Request message, a Proxy Binding Update message, or a Binding Update message
including a flag, which is used to indicate that the process type for creating bearer is a first/second
creating type or indicate that the process type for updating binding is a first/second binding type."
'750 Patent at 27:22–27. The specification further states that "the first network element at network
side may send a Create Default Bearer Request message to a Serving GW . . . [or] may send a
Create Default PDP Context Request message to the Serving GW," depending on the 3GPP
system. *Id.* at 7:6–11.

Using similar language, claim 1 recites that the "transmitter" of the mobility management

network device "is configured to send a resource request message." Similarly, claim 13 recites that "the mobility management network device is configured to: . . . send a resource request message." Again, the specification states that the first network element "may be an MME in a System Architecture Evolution (SAE) system, and may be a GPRS Supporting Node (SGSN) in a GPRS/UMTS system." *Id.* at 6:17–20. These examples show that these terms have an "understood meaning in the art" and thus are not subject to § 112 ¶ 6 construction. *See Chrimar Sys. v. ADTRAN, Inc.*, 2016 U.S. Dist. LEXIS 79555, *38 (E.D. Tex. June 17, 2016) ("Where a claim term has an understood meaning in the art, it recites sufficient structure."). Thus, a person of ordinary skill would understand that the claimed "mobility management network device" is "a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)." Likewise, a person of ordinary skill would understand that the claimed "transmitter" is a "transmitter of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."

The claim language further describes the inputs and outputs of these components, and what it is that they "receive" or "send." For example, the "receiver" is "is configured to receive, from a user equipment (UE), an access request message for access the 3GPP access system," and the "transmitter" is "configured to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system" See '750 Patent at Claim 1. As explained in *E2E*, § 112, ¶ 6 does not apply when the written description provides context as to the "inputs and outputs" and how the claimed components "interact[] with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question or otherwise impart[s] structure." *E2E Processing, Inc. v. Cabela's Inc.*, 2015 U.S. Dist. LEXIS 86060, *20 (E.D. Tex. July 2, 2015) (quoting *Williamson*, 792 F. 3d at 1351). Each of the disputed terms is used within a larger network component, such as an MME or SGSN, which must include

those structures to achieve their stated objective (*e.g.*, sending and receiving appropriate data).

Defendants argue that the specification confirms that the terms "receiver" and "transmitter" do not convey any structure for performing the recited functions to a POSITA. (Dkt. No. 130 at 14). The Court disagrees. As discussed above, the intrinsic evidence indicates that the claimed "mobility management network device" is "a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)." The intrinsic evidence further indicates that the claimed "receiver" is a "receiver of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)," and that the claimed "transmitter" is a "transmitter of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)." The intrinsic evidence also indicates that the MME or SGSN must include these structures to achieve the recited objective (*e.g.*, sending and receiving appropriate data). S*ee, e.g., 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).

Defendants also contend that the specification does not use the terms "receiver" or "transmitter," and does not disclose any structure for a "receiver" or "transmitter." (Dkt. No. 130 at 14). Defendants argue that "[n]o known receiver structure serves as an 'Access Request Determining Unit,' and no known transmitter structure serves as a 'Process Type Notifying Unit.'" (*Id.* at 15). According to Defendants, "the specification fails to explain any structures associated with these boxes and their functions and fails to explain any structural details of what lies inside." *Id.*

The Court is not persuaded by Defendants' argument. As discussed above, the specification contains descriptions of mobility management devices that are well-understood in the art, such as MMEs and SGSNs, performing the claimed functionality. *See, e.g.*, '750 Patent at 6:10–25 and

7:6–35 (describing functionality), 6:17–20 ("The first network element at network side may be an MME in a System Architecture Evolution (SAE) system, and may be a GPRS Supporting Node (SGSN) in a GPRS/UMTS system."). These disclosures demonstrate that the term "mobility management network device" has an understood meaning in the art and is likewise not subject to § 112 ¶ 6. In sum, the recited terms are not nonce words. *See SyncPoint Imaging, LLC v. Nintendo of Am. Inc.*, 2016 U.S. Dist. LEXIS 677, *54-62 (E.D. Tex. Jan. 5, 2016) (holding claim limitations reciting "a processor … for processing …" were not means-plus-function limitations because the term 'processor' connoted structure and was not a 'nonce' term."). Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

c) Court's Construction

The Court finds that the term **"receiver"** is not subject to § 112, ¶ 6, and construes the term to mean **"receiver of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court further finds that the term **"transmitter"** is not subject to § 112, ¶ 6, and construes the term to mean **"transmitter of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court also finds that the term **"mobility management network device"** is not subject to § 112, ¶ 6, and construes the term to mean **"Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."**

2. "obtaining unit," "identifying unit," and "processing unit"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"an obtaining unit, configured to receive an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Partnership Project (non-3GPP) network to a 3rd Generation Partnership Project (3GPP) network, wherein the attach request message comprises an information element indicating handover"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** receive an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Partnership Project (non- 3GPP) network to a 3rd Generation Partnership (3GPP) network **Structure:** obtaining unit in a network-side network element and equivalents thereof.	Indefinite for failure to disclose structure. **Function:** receive an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Pa1tnership Project (non- 3GPP) network to a 3rd Generation Partnership Project (3GPP) network, wherein the attach request message comprises an information element indicating handover **Structure:** No corresponding structure disclosed.
"an identifying unit, configured to identify that the attach request message is due to the handover according to the IE indicating handover"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** identify that the attach request message is due to the handover according to the IE indicating handover. **Structure:** identifying unit in a network- side network element and equivalents thereof.	Indefinite for failure to disclose structure. **Function:** identify that the attach request message is due to the handover according to the IE indicating handover **Structure:** No corresponding structure disclosed.
"a processing unit, configured to identify a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non-3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure"	Not subject to 112 ¶ 6 - plain meaning. If the Court determines this term is subject to 112 ¶ 6: **Function:** identify a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non- 3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure **Structure:** one or more processors in a network-side network element and equivalents thereof.	Indefinite for failure to disclose structure. **Function:** identify a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non- 3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure **Structure:** No corresponding structure disclosed.

a) The Parties' Positions

The parties dispute whether the phrases are subject to § 112 ¶ 6. Defendants contend that the terms are governed by § 112 ¶ 6, because they recite insufficient structure to perform their recited functions. Defendants further contend that the terms are indefinite, because the specification does not recite any algorithm or corresponding structure that performs the recited functions. Specifically, Defendants argue that each of the disputed terms contains the nonce word "unit" coupled with a function. (Dkt. No. 130 at 8). Defendants contend that this combination would not have had an understood meaning in the art. *Id.* (citing Dkt. No. 130-1 at ¶ 33). According to Defendants, the term "unit" in claim 11 of the 779 Patent "does not provide any indication of structure because it sets forth the same black box recitation of structure for providing the same specified function as if the term 'means' had been used." (Dkt. No. 130 at 8) (citing *Williamson*, 792 F.3d at 1350). Defendants further argue that Figure 6 only discloses generic boxes for an "obtaining unit," "identifying unit," and three "processing unit(s)," and there is no indication of what is inside, how it works, or how it is supposed to perform the claimed functions. (Dkt. No. 130 at 9).

Defendants also contend that nothing in the specification, prosecution history, or other extrinsic evidence provides any structural support. *Id.* Defendants argue that the only description of the boxes in Figure 6 refers to the "unit" limitations purely in terms of the function performed and how the boxes are connected. *Id.* Defendants contend that these functional descriptions do nothing to connote structure to a person of ordinary skill in the art. *Id.* (Dkt. No. 130-1 at ¶ 34). Defendants also argue that a POSITA would not have understood the identity of these components in light of the functions they perform in the claims. (Dkt. No. 130 at 10-11) (citing Dkt. No. 130-1 at ¶¶ 35–40). Defendants further argue that a POSITA would not have understood whether the claimed "units" refer to software, hardware, or something else. *Id.* According to Defendants, the

"unit" terms fail to connote sufficiently definite structure and should be construed under § 112, ¶ 6. (Dkt. No. 130 at 11).

Defendants further argue that the "unit" terms are indefinite because the specification provides no corresponding structure for the claimed functions. *Id.* Defendants argue that if these "unit" terms are construed as hardware, the specification does not point to any hardware that could perform the stated functions. *Id.* Defendants contend that the specification describes the "obtaining unit," "identifying unit," and "processing unit" solely by their functions. In the alternative, Defendants argue that if the "unit" terms are construed as software, the specification does not discloses a processor that executes the corresponding function or an algorithm for the claimed functionality. *Id.* Defendants argue that Plaintiff's failure to identify any specific structure in its briefing or in the patent for any of the "unit" terms reinforces the fact that no such structure exists. (*Id.* at 12).

Plaintiff responds that each of these phrases use well-understood terms in the networking and communications arts, such as a "receiver" or "transmitter," and include clauses describing what types of data these structures are "configured to" receive or send. (Dkt. No. 124 at 12). Plaintiff further argues that each of these terms are used within a larger network component, such as an MME or SGSN, that must include those structures to achieve their purpose. *Id.* Plaintiff also contends that none of the disputed terms use the word "means," and thus are presumptively not subject to section 112 ¶ 6 construction. (*Id.* at 13). Plaintiff argues that all of the terms have a well-understood meaning in the art, and thus all of the terms recite sufficient structure. (*Id.* at 14). Plaintiff further argues that apparatus claims that recite structures using functional terms are not automatically subject to § 112 ¶ 6. *Id.*

Plaintiff further contends that the specification includes numerous references to an

obtaining unit, identifying unit, and processing unit. (*Id.* at 16). According to Plaintiff, Figure 6 provides details of the structure for each unit, including details on the operation of such units and how they are configured. *Id.* Plaintiff further argues that the '779 Patent provides details of how each component is connected to the others and the rest of the 3GPP network as a part of the claimed device. (*Id.* at 17) (citing '779 Patent at Fig. 6, 5:40–6:2). Plaintiff also contends that the claim language itself provides structural details regarding the interrelation of the claimed components. (Dkt. No. 124 at 17).

In the alternative, Plaintiff argues that even if these terms are construed under § 112, ¶ 6, the specification sets forth sufficient structure corresponding to the claims. *Id.* Plaintiff contends that the specification describes obtaining, identifying, and processing messages in a manner that a person of ordinary skill in the art would readily know the structure that would be used for the claims. *Id.* Plaintiff argues that the specification shows each of these units and their connection to each other. (*Id.* at 18) (citing '779 Patent at Figure 6). Plaintiff also argues that the original claims of the '779 Patent included each of an "obtaining unit," an "identifying unit," and a "processing unit," thus providing additional description for these terms. (Dkt. No. 124 at 18) (citing Dkt. No. 124-6 at 11-12).

In its reply, Plaintiff argues that a person of ordinary skill in the art would understand the prefixes of these terms (*i.e.*, obtaining, identifying, processing) to impart structural meaning. (Dkt. No. 139 at 4) (citing Dkt. No. 139-1 at ¶ 41). Plaintiff contends that the terms are described within the context of their inputs, outputs, and interactions with other units in ways that inform the character of these limitations. (Dkt. No. 139 at 4). Plaintiff further contends that each of the challenged terms does have sufficient structure within the '779 Patent. (*Id.* at 5).

Plaintiff argues that the claimed "network element" in the '779 Patent comprises an

inventive arrangement of units, not the underlying unit themselves. *Id.* According to Plaintiff, the focus of the invention is not on the inside of the claimed structures, but on what inputs and outputs they receive, send, or store, and how they interact with each other within the claimed communication device. *Id.* Plaintiff contends that Defendants cannot plausibly argue that the requisite circuitry or algorithm is more complex than the claimed functions themselves. *Id.* Plaintiff further contends that the "units" are simple components, and a person of ordinary skill in the art would readily know how they work within the claimed communication devices (*e.g.*, MME or SGSN). (*Id.* at 5-6) (citing Dkt. No. 139-1 at ¶¶ 36-38, 42).

For the following reasons, the Court finds that the term **"obtaining unit"** is not subject to § 112, ¶ 6, and should be construed to mean **"receiver of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court also finds that the term **"processing unit"** is not subject to § 112, ¶ 6, and should be construed to mean **"processor of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court further finds that the term **"identifying unit"** is subject to § 112, ¶ 6, and is indefinite for failing to discloses sufficient structure that corresponds to the claimed function.

b) Analysis

The phrase "an obtaining unit, configured to receive an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Partnership Project (non-3GPP) network to a 3rd Generation Partnership Project (3GPP) network, wherein the attach request message comprises an information element indicating handover," appears in claim 11 of the '779 Patent. The phrase "an identifying unit, configured to identify that the attach request message is due to the handover according to the IE indicating handover," appears in claim 11 of the '779 Patent. The phrase "a processing unit, configured to identify a Packet Data Network

Gateway (PDN GW) whose address is used by the UE in the non-3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure," appears in claim 11 of the '779 Patent.

"It is well settled that '[a] claim limitation that actually uses the word 'means' invokes a rebuttable presumption that § 112, [¶] 6 applies.'" *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1371 (Fed. Cir. 2003) (quotation omitted). It is also equally understood that "a claim term that does not use 'means' will trigger the rebuttable presumption that § 112, [¶] 6 does not apply." *Id.* (quotation omitted). The presumption against the application of § 112, ¶ 6 may be overcome if a party can "demonstrate[] that the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Williamson*, 792 F.3d at 1339 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). "In undertaking this analysis, we ask if the claim language, read in light of the specification, recites sufficiently definite structure to avoid § 112, ¶ 6." *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014) (citing *Inventio AG v. Thyssenkrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1357 (Fed. Cir. 2011)).

None of the claims recite the word "means." Therefore, there is a rebuttable presumption that § 112, ¶ 6 does not apply. For the terms "obtaining unit" and "processing unit," Defendants have failed to rebut the presumption because "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure." *Williamson*, 792 F.3d at 1348. Specifically, the intrinsic evidence demonstrates that a person of ordinary skill in the art would understand the necessary structure of the "obtaining unit" and "processing unit" in claim 11 of the '779 Patent.

The specification states that "[t]he network element is an MME (evolved network), SGSN

(2G/3G network) . . . ." '779 Patent at 5:41–42. The specification further states that "the network element includes an obtaining unit and an identifying unit," and "further includes a first processing unit . . . ." *Id.* at 5:44–58. The specification adds that "[t]he obtaining unit is adapted to obtain the registration processing type information reported by the UE in the process of registering the UE into the network." *Id.* at 5:46–47. The specification further states that the processing unit "is adapted to initiate a network-initiate bearer create procedure to create the bearer resources for the UE after the identifying unit identifies that the registration processing type is a handover registration processing type." *Id.* at 5:54–58.

Using similar language, claim 11 recites that the obtaining unit is "configured to receive an attach request message sent by a User Equipment (UE) during a handover from a non 3rd Generation Partnership Project (non-3GPP) network to a 3rd Generation Partnership Project (3GPP) network." The claim further recites that the processing unit is "configured to identify a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non-3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure." Thus, a person of ordinary skill would understand that the claimed "network element" is "a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)." Likewise, a person of ordinary skill would understand that the claimed "obtaining unit" and "processing unit" are units of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN) configured to perform the recited objective. These examples show that these terms have an "understood meaning in the art" and thus are not subject to § 112 ¶ 6 construction. *See Chrimar Sys. v. ADTRAN, Inc.*, 2016 U.S. Dist. LEXIS 79555, *38 (E.D. Tex. June 17, 2016) ("Where a claim term has an understood meaning in the art, it recites sufficient structure.").

The claim language further describes the inputs and outputs of these components, and what it is that they "receive" and "request." Thus, the claim language itself recites sufficiently definite structure for these terms. For example, the obtaining unit is "configured to receive an attach request message sent by a User Equipment (UE) during a handover from a non-3rd Generation Partnership Project (non-3GPP) network to a 3rd Generation Partnership Project (3GPP) network." Likewise, the processing unit is "configured to identify a Packet Data Network Gateway (PDN GW) whose address is used by the UE in the non-3GPP network by communicating with a Home Subscriber Server (HSS), and request the PDN GW to initiate a bearer creation procedure." As explained in *E2E*, § 112, ¶ 6 does not apply when the written description provides context as to the "inputs and outputs" and how the claimed components "interact[] with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question or otherwise impart[s] structure." *E2E Processing, Inc. v. Cabela's Inc.*, 2015 U.S. Dist. LEXIS 86060, *20 (E.D. Tex. July 2, 2015) (quoting *Williamson*, 792 F. 3d at 1351). Each of the terms is used within a larger network component, such as an MME or SGSN, that must include those structures to achieve their stated objective (*e.g.*, receiving an attach request and requesting to initiate a bearer creation procedure).

Defendants argue that each of the disputed terms contain the nonce word "unit" coupled with a function. (Dkt. No. 130 at 8). According to Defendants, the term "unit" in claim 11 of the 779 Patent "does not provide any indication of structure because it sets forth the same black box recitation of structure for providing the same specified function as if the term 'means' had been used." *Id.* (citing *Williamson*, 792 F.3d at 1350). Defendants further argue that Figure 6 only discloses generic boxes for an "obtaining unit" and "three "processing unit(s)."

As discussed above, the intrinsic evidence indicates that the claimed "network device" is "a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)." The intrinsic

evidence further indicates that the claimed "obtaining unit" and "processing unit" are units of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN). Furthermore, the intrinsic evidence indicates that MME or SGSN must include those structures to achieve their stated objective (*e.g.*, receiving an attach request and requesting to initiate a procedure). S*ee, e.g., 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). Importantly, what is claimed here is a network device configured to receive an attach request message during a handover, identify a PDN GW, and request the PDN GW to initiate a bearer creation procedure.

Regarding the term "identifying unit," the Court finds that Defendants have rebutted the presumption that § 112, ¶ 6 does not apply, because a person of ordinary skill in the art would not understand the words of the claim "to have a sufficiently definite meaning as the name for structure." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). Like the previous terms, the disputed term contains the word "unit" coupled with a function. The term also includes the adjectival modifier of "identifying." However, unlike the previous terms, this combination does not have an understood meaning in the art or belong to a class of structures. (Dkt. No. 130-1 at ¶ 33).

The Federal Circuit has stated that "[g]eneric terms such as 'mechanism,' 'element,' 'device,' and other nonce words that reflect nothing more than verbal constructs *may* be used in a claim in a manner that is tantamount to using the word 'means.'" *Williamson*, 792 F.3d at 1350 (emphasis added). Here, the recited "identifying units" is a generic recitation of software or hardware, and is purely functional claiming. Thus, the term "identifying unit" in claim 11 of the 779 Patent "does not provide any indication of structure, because it sets forth the same black box

recitation of structure for providing the same specified function as if the term 'means' had been used." *Id.*

Furthermore, the specification does not provide any guidance for the "identifying unit" term. Plaintiff is correct that Figure 6 includes an "identifying unit." However, the figure only discloses a generic box for the "identifying unit." There is no indication of what is inside the "identifying unit," or how it is supposed to perform the claimed function. Instead, the only description of the box in Figure 6 refers to the "identifying unit" limitations in terms of the function performed. '779 at 5:51–53 ("The identifying unit is adapted to identify the processing type of the registration according to the processing type information obtained by the obtaining unit."). This functional descriptions does not connote structure to a person of ordinary skill in the art. (Dkt. No. 130-1 at 34). Accordingly, the Court finds that the term "identifying unit" is subject to § 112, ¶ 6.

Having determined that the term "identifying unit" is a means-plus-function term, the Court now must "attempt to construe the disputed claim term by identifying the 'corresponding structure, material, or acts described in the specification' to which the claim term will be limited." *Robert Bosch*, 769 F.3d at 1097 (quoting *Welker Bearing Co. v. PHD, Inc.*, 550 F.3d 1090, 1097 (Fed. Cir. 2008)). "If we are unable to identify any 'corresponding structure, material, or acts described in the specification,' the claim term is indefinite." *Id.* (quoting *Noah Sys.*, 675 F.3d at 1312); *see also EON Corp. IP Holdings, LLC v. AT&T Mobility LLC*, 785 F.3d 616, 621 (Fed. Cir. 2015) ("Means-plus-function claim limitations under § 112 ¶ 6 must satisfy the definiteness requirement of § 112 ¶ 2.").

The Court finds that the "identifying unit" term is indefinite because the specification fails to provide corresponding structure for the claimed functions. The specification describes the "identifying unit" solely by its functions. '779 Patent at 5:51–53 ("The identifying unit is adapted

to identify the processing type of the registration according to the processing type information obtained by the obtaining unit."). This description does not point to any hardware that could perform the stated functions. The specification also fails to disclose a processor that executes the corresponding function or an algorithm for the claimed functionality.

During the claim construction hearing, Plaintiff argued that the "identifying unit" is described in the specification as "adapted to identify the processing type of the registration according to the processing type information obtained by the obtaining unit." '779 Patent at 5:51–53. This is a restatement of the functional language recited in the claim, and like the claim language, fails to connote structure to a person of ordinary skill in the art.

Plaintiff also argued during the claim construction hearing that the "IE" is discussed as having a value of "0" or "1." *Id.* at 6:37–50. According to Plaintiff, this provides the corresponding structure for the identifying unit. The Court disagrees. The function recited in claim 11 is "identify that the attach request message is due to the handover according to the IE indicating handover." The IE ("information element") is included in the recited function and does not provide the corresponding structure for the "identifying unit." Instead, the "IE" indicates the attach type (*i.e.*, "Normal Attach" or "Handover Attach"). Specifically, the portion of the specification cited by Plaintiff describes the "Attach Type IE" as being either "1" or "0," and further states that it is added to the attach request message. *Id.* at 6:37–39 ("An Attach Type IE is added in the Attach Request message. For example, the values of the Attach Type IE are 0 and 1."). The "attach request message" is a message that is recited multiple times in claim 11. Neither the "attach request message" nor the "IE" provides the corresponding structure for the claimed "identifying unit." Accordingly, the Court finds that the "identifying unit" term is indefinite because the specification fails to provide corresponding structure for the claimed function. Finally, in reaching its

conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

c) Court's Construction

The Court finds that the term **"obtaining unit"** is not subject to § 112, ¶ 6, and should be construed to mean **"receiver of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court also finds that the term **"processing unit"** is not subject to § 112, ¶ 6, and should be construed to mean **"processor of a Mobility Management Entity (MME) or a Serving GPRS Support Node (SGSN)."** The Court further finds that the term **"identifying unit"** is subject to § 112, ¶ 6, and is indefinite for failing to discloses sufficient structure that corresponds to the claimed function.

3. "Create Bearer Request message"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"Create Bearer Request message"	Plain meaning.	"a message titled Create Bearer Request"

a) The Parties' Positions

The parties dispute whether dependent claim 4 of the '779 Patent should be limited to a message titled "Create Bearer Request." Plaintiff contends that the meaning of "Create Bearer Request message" is self-evident to a person of ordinary skill in the art based on its use in the asserted claims. (Dkt. No. 124 at 21). Plaintiff argues that Defendants' construction is improper because it limits the term to the exact words of its title. (*Id.* at 22). Plaintiff contends that the literal title of a particular message provides no technical functionality, and is only used so that network device manufacturers and operators can understand the message's function. *Id.*

Plaintiff also argues that one of ordinary skill in the art would understand that the term "Create Bearer Request message" only requires that the message in question include a request to

create a bearer. *Id.* Plaintiff contends that nothing in the intrinsic record indicates that the applicants intended a narrow interpretation of the message based on an arbitrary title. *Id.* According to Plaintiff, the specification demonstrates that the claimed "Create Bearer Request" message may be carried by a number of differently-titled messages, and that "Create Bearer Request" is intended to refer to the message's content. *Id.* (citing '779 Patent at Figure 7; 8:5–17)

Plaintiff also argues that Defendants' construction would irreconcilably include the specification's description of a "Create Bearer Request" message, but simultaneously read out the accompanying figure because the message titles are slightly different. (Dkt. No. 124 at 23). Finally, Plaintiff contends that Defendants' construction is incorrect because a message having nothing to do with the creation of bearers, but titled "Create Bearer Request" would infringe, while messages directed to the creation of bearers (but with other titles) would not. *Id.*

Defendants respond that the "Create Bearer Request message" was a known message, with a known function, used in a known procedure at the time of the '779 Patent. (Dkt. No. 130 at 25) (citing Dkt. No. 130-1 at ¶ 23). Defendants further argue that the specification shows that the inventors of the '779 Patent understood the Tracking Area Update ("TAU") procedure, understood the specific messages used in the TAU procedure, and most importantly, claimed a specific message from the TAU procedure: the message titled Create Bearer Request. (Dkt. No. 130 at 26) (citing '779 Patent at 7:3–34; Dkt. No. 130-3 at 11; Dkt. No. 130-1 at ¶ 24). Defendants further contend that the claim recites a capitalized, specific message to distinguish that message from other known messages. (Dkt. No. 130 at 26). Defendants argue that the patentees knew how to claim the generic version of a specific message used in a specific procedure. (Dkt. No. 130 at 27) (citing '750 Patent at Claim 1).

Plaintiff replies that nothing in the record indicates that the inventors intended to narrow

the scope of their claims based on an arbitrary message title. (Dkt. No. 139 at 7). Plaintiff contends that the patents use different wording to refer to the same messages within the same embodiment. *Id.* (citing '779 Patent at Figure 7, 8:5–17). Plaintiff argues that an ordinary artisan would have understood that the actual messages sent from an MME to a PDN GW are not given textual titles. (Dkt. No. 139 at 7) (Dkt. No. 130-1 at ¶¶ 27, 32). According to Plaintiff, the particular type of message is indicated by a decimal indicator. (Dkt. No. 139 at 7) (Dkt. No. 130-1 at ¶¶ 27, 32). Plaintiff contends that Defendants' citation to the "Tracking Area Update" procedure confirms that a POSITA would know that particular messages are not differentiated based on their titles, but their content. (Dkt. No. 139 at 8). According to Plaintiff, a POSITA would understand that a "Create Bearer Request" message refers to the content of the message, not its actual title as used in an LTE system. *Id.*

For the following reasons, the Court finds that the term **"Create Bearer Request message"** should be construed to mean **"a message sent to the PDN GW address requesting the network to initiate a bearer creation process."**

b) Analysis

The term "Create Bearer Request message" appears in claim 4 of the '779 Patent. Claim 4 recites "wherein the requesting a the PDN GW to initiate a bearer creation procedure comprises: sending, by the MME, a Create Bearer Request message to the PDN GW; and initiating, by the PDN GW, the bearer creation procedure." Thus, the claim requires the MME to send a "Create Bearer Request message" to the PDN GW. This is consistent with the specification, which states that "the MME sends a Create Bearer Request message to the obtained PDN GW address, requesting the network to initiate bearer creation procedure." '779 at 8:12–15. Figure 7 further illustrates the MME sending a Create Bearer Request message (labeled "8. Request Bearer

Create") to the PDN GW. Accordingly, the Court finds that the term "Create Bearer Request message" should be construed to mean "a message sent to the PDN GW address requesting the network to initiate a bearer creation process."

Defendants argue that "[m]essages having those specific titles existed in the standard at the time of the patent, . . . and the use of capitalized letters in the claim language reflects an intent to claim those specific messages." (Dkt. No. 130 at 25). The Court is not persuaded that capitalizing this term in the claim requires it to be construed as "a message titled Create Bearer Request." Moreover, Defendants' construction would not be helpful to a jury. It does not inform the jury what the term means or what the message contains. Instead, it incorrectly limits the recited message to a specific title. For example, under Defendants' construction, a message having nothing to do with the creation of bearers, but titled "Create Bearer Request" would fall within the scope of the claim.

Furthermore, Plaintiff submitted evidence that a person of ordinary skill in that art would understand that the actual messages sent from an MME to a PDN GW are not given textual titles. (Dkt. No. 139 at 7) (citing Dkt. No. 139-1 at ¶¶ 27, 32). Instead, the particular "message type" is indicated by a decimal indicator. *Id.* Accordingly, the Court finds that a person of ordinary skill in the art would have understood that a "Create Bearer Request message" is "a message sent to the PDN GW address requesting the network to initiate a bearer creation process," and not that the actual message must include a title of "Create Bearer Request." Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

c) Court's Construction

The Court construes the term **"Create Bearer Request message"** to mean **"a message**

sent to the PDN GW address requesting the network to initiate a bearer creation process."

4. "Create Default Bearer Request Message"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"Create Default Bearer Request Message"	Plain meaning.	"a message titled Create Default Bearer Request"

a) The Parties' Positions

The parties dispute whether dependent claims 4, 10, and 17 of the '750 Patent should be limited to a message titled "Create Default Bearer Request." Plaintiff contends that the term does not need to be construed. (Dkt. No. 124 at 23). Plaintiff argues that the parties' dispute for this term is essentially the same as the term "Create Bearer Request message" in the '779 Patent. *Id.* Plaintiff further argues that the specification of the '750 Patent confirms that the phrase "Create Default Bearer Request" means a request to create a default bearer. (*Id.* at 24) (citing '750 Patent at 2:62–67). Plaintiff also contends that nothing in the '750 Patent indicates any intent by the inventors to limit the Create Default Bearer Request to a message titled "Create Default Bearer Request." (Dkt. No. 124 at 24).

Defendants respond that a message having the title of "Create Default Bearer Request" existed in the 3GPP LTE standard at the time of the patent. (Dkt. No. 130 at 27). Defendants argue that the inventors knew of this message, and the use of capitalized claim terms shows an intent to claim the specific message titled Create Default Bearer Request. *Id.* Defendants further contend that the capital letters in the claim show an intent to limit the claim to a proper noun. (*Id.* at 28).

Plaintiff replies that nothing in the record indicates that the inventors intended to narrow the scope of their claims based on an arbitrary message title. (Dkt. No. 139 at 7). Plaintiff argues that an ordinary artisan would have understood that the actual messages sent from an MME to a

PDN GW are not given textual titles. (Dkt. No. 139 at 7) (citing Dkt. No. 139-1 at ¶¶ 27, 32). According to Plaintiff, the particular type of message is indicated by a decimal indicator. *Id.* Plaintiff argues that a POSITA would understand that a "Create Bearer Default Request" message refers to the content of the message, not its actual title as used in an LTE system. (Dkt. No. 139 at 8).

For the following reasons, the Court finds that the term **"Create Default Bearer Request Message"** should be construed to mean **"a message sent to the PDN GW address requesting the network to initiate a bearer creation process."**

b) Analysis

The term "Create Default Bearer Request message" appears in claims 4, 10, and 17 of the '750 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. Independent claim 1 recites "the transmitter is configured to send a resource request message to a packet data network gateway (PDN GW) to create resources for the UE to be used in the 3GPP access system." Dependent claim 4 recites "wherein the resource request message includes a Create Default Bearer Request message, and wherein the second handover indication information is carried by the Create Default Bearer Request message." Thus, the claims require the transmitter to send a "Create Default Bearer Request message" to the PDN GW. This is consistent with the specification, which states that "[t]he first network element at network side may initiate a Create Radio Bearer process to create the radio bearer corresponding to the default bearer." '750 at 8:26–28. Figure 3 further illustrates the first network element sending a Create Default Bearer Request message to the PDN GW. Accordingly, the Court finds that the term "Create Default Bearer Request message" should be construed to mean "a message sent to the PDN GW address requesting the network to initiate a bearer creation process."

As with the previous term, the Court finds that Defendants' construction would be not helpful to a jury. It does not inform the jury what the term means or what the message contains. Instead, it incorrectly limits the recited message to a specific title. For example, under Defendants' construction, a message having nothing to do with the creation of bearers, but titled "Create Bearer Request" would fall within the scope of the claim.

Furthermore, Plaintiff submitted evidence that a person of ordinary skill in that art would understand that that the actual messages sent from an MME to a PDN GW are not given textual titles. (Dkt. No. 139 at 7) (Dkt. No. 139-1 at ¶¶ 27, 32.). Instead, the particular type of message is indicated by a decimal indicator. *Id.* Accordingly, the Court finds that a person of ordinary skill in the art would have understood that a "Create Default Bearer Request Message" is "a message sent to the PDN GW address requesting the network to initiate a bearer creation process," and not that the actual message must include a title of "Create Default Bearer Request." Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

c) **Court's Construction**

The Court construes the term **"Create Default Bearer Request Message"** to mean **"a message sent to the PDN GW address requesting the network to initiate a bearer creation process."**

5. **"A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non-3GPP network occurs, comprising:"**

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non- 3GPP network occurs, comprising:"	Not a limitation.	The preamble is limiting.

a) The Parties' Positions

The parties dispute whether the preamble is limiting in claim 1 of the 677 Patent. Plaintiff contends that the preamble of claim 1 does not need to be construed because it is not actually a limitation of the asserted claims. (Dkt. No. 124 at 24). Plaintiff argues that the preamble does not affect the claim language. (*Id.* at 25). Plaintiff contends that the body of claim 1 explicitly sets forth specific and detailed process steps associated with the claimed invention. *Id.* According to Plaintiff, the preamble's limitations are already reflected into the body of the claim itself, and the preamble does not provide any additional definitional or structural components necessary to give the claim "life, meaning, [or] vitality." *Id.*

Defendants respond that the preamble states that the method for detaching occurs "when a handover from a 3GPP network to a non-3GPP network occurs." (Dkt. No. 130 at 28). Defendants contend that this limitation gives life to the claim because it explains the context in which the invention is used. (*Id.* at 29) (Dkt. No. 130-1 at ¶ 70.). Defendants further point to the title of the '677 Patent, and argue that the patent describes the "present invention" as relating "to the network communication technology and more particularly to a method, system, and device for user detachment when a handover or change occurs in a heterogeneous network." (Dkt. No. 130 at 29) (citing '677 Patent at [54], 1:21–24). Defendants further argue that it is clear that the inventors sought to solve an alleged problem arising when a handover occurs. (Dkt. No. 130 at 29) (citing '677 Patent at 3:49–52).

Defendants also contend that the claim language cited by Plaintiff does not provide the necessary context to ensure that detaching takes place "when a handover occurs from a 3GPP network to a non-3GPP network." (Dkt. No. 130 at 30). According to Defendants, the preamble is limiting because it contains the fundamental characteristic of detaching when a handover occurs. *Id.* Defendants also argue that the preamble serves as antecedent basis for numerous terms, including "user equipment (UE)," "3GPP network," and "non-3GPP network." *Id.*

Plaintiff replies that the preamble of the '677 Patent is not a limitation on the claims because it does not recite essential steps, structure, or affect the remaining claim language. (Dkt. No. 139 at 12). Plaintiff contends that the body of the claims already includes a requirement that detaching take place during a handover. *Id.* Plaintiff also argues that the preamble providing antecedent basis does not automatically mean that the preamble is limiting. *Id.*

For the following reasons, the Court finds that the preamble **"A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non- 3GPP network occurs, comprising:"** in claim 1 of the '677 Patent is limiting.

b) Analysis

The phrase "A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non- 3GPP network occurs, comprising:" appears in claim 1 of the '677 Patent. The Court finds that the preamble is limiting because it is necessary to give life, meaning, and vitality to the claim, and provides antecedent basis for a number of claim terms. *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1357 (Fed. Cir. 2012). Specifically, the preamble states that the method for detaching occurs "*when a handover from a 3GPP network to a non-3GPP network occurs*." '677 Patent at Claim 1 (emphasis added). The Court agrees with Defendants that this limitation gives life to the claim because it explains the

context in which the invention is implemented.

The title of the '677 Patent is a "Method, System, and Device for User Detachment *when a Handover or Change Occurs in Heterogeneous Network*," and the patent describes the "present invention" as relating "to the network communication technology and more particularly to a method, system, and device for user detachment *when a handover or change occurs in a heterogeneous network.*" '677 Patent at 1:21–24 (emphasis added). The specification also indicates that problems with the prior art arose when a handover occurs. The specification states, "To sum up, . . . the inventor(s) of the present invention finds that the prior art has at least the following problems: the prior art [does not] provide[] a specific solution for user detachment *when a handover or change occurs in a heterogeneous network* . . . ." *Id.* at 3:49–52 (emphasis added). Moreover, the preamble provides antecedent basis for the terms "user equipment (UE)," "3GPP network," and "non-3GPP network." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) ("[D]ependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention."). Accordingly, the Court finds that the preamble is limiting because it is necessary to give life, meaning, and vitality to the claim, and provides antecedent basis for a number of claim terms. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

c) Court's Construction

The preamble **"A method for detaching a user equipment (UE) when a handover from a 3rd generation partnership project (3GPP) network to a non- 3GPP network occurs, comprising:"** in claim 1 of the '677 Patent is limiting.

6. "detaching, by the MME, the UE from the 3GPP network" / "detach the UE from the 3GPP network"

Disputed Term	Plaintiff's Proposal	Defendants' Proposal
"detaching, by the MME, the UE from the 3GPP network"	"delete an MM context of the UE by the MME"	"delete the MM context of the UE by the MME"
"detach the UE from the 3GPP network"	"delete an MM context of the UE, by the MME"	"delete the MM context of the UE, by the MME"

a) The Parties' Positions

The parties agree that "detaching" relates to a deletion of context information associated with a UE, but disagree as to what amount of "deleting" is required by the claims. Plaintiff contends that "detaching" refers to deleting any information field within the MM context. Defendants contend that "detaching" refers to deleting the entire MM context stored in the MME, not just one of the fields. Plaintiff argues that the parties true dispute is what an "MM Context" is, and what is meant by "deleting" an "MM Context." (Dkt. No. 124 at 26).

Plaintiff argues that a person of ordinary skill in the art at the time of the invention would have recognized that there are numerous different "MM contexts." (*Id.* at 25) (citing Dkt. No. 124-4 at 2-3). Plaintiff contends that a person of ordinary skill would understand the phrase "detaching" as referring to deleting at least one such context from the MME. (Dkt. No. 124 at 26). Plaintiff argues that the '677 Patent repeatedly and consistently defines "detaching" as a deletion of MM context information of the UE by the MME. (*Id.* at 27) (citing '677 Patent at 13:27–30). Plaintiff further argues that Defendants' proposal unreasonably constricts the scope of the claims to require a deletion of all of the MM contexts in the MME. (Dkt. No. 124 at 26). According to Plaintiff, nowhere do the claims, specification, or file history evidence any statement that "detach" or "detaching" is restricted only to situations where every MM context attribute must be deleted. (*Id.* at 27).

Plaintiff also contends that the problem faced by the inventors at the time of the '677 Patent

was that the prior art did not delete any context information during a handover. *Id.* ('677 Patent at

3:10–16). Plaintiff argues that a person of ordinary skill would recognize that this drawback of the

prior art is overcome even if detachment means that only a subset of eligible resources are deleted.

(Dkt. No. 124 at 27). Plaintiff further contends that a person of skill would recognize that in certain

situations, it may be beneficial to delete, some, but not all, MM context attributes. (*Id.* at 27-28).

Plaintiff also argues that at the time of the invention, MMEs could not effectively manage

their resources because they retained all of a UE's context information. (*Id.* at 28). Plaintiff

contends that Defendants' construction would ignore the knowledge and skill of the ordinary

artisan and interject an entirely new inefficiency by forcing the MME to delete all of a UE's

context information. *Id.* According to Plaintiff, a person of skill would not understand the

invention to be so binary and would recognize that the stated goal of the invention is captured in

Plaintiff's construction. *Id.*

Defendants respond that the '677 Patent refers to one mobility management context (MM

context) stored in the mobility management entity (MME) corresponding to each UE. (Dkt. No.

130 at 31). Defendants argue that the '677 Patent proposes saving network resources by deleting

the mobility management context. (*Id.*) (citing '677 Patent at 2:65–3:5). According to Defendants,

this stated goal is simply not achieved if the MME deletes only one *field* of the MM context as

Plaintiff proposes. (Dkt. No. 130 at 31). Defendants further argue that Plaintiff incorrectly suggest

that each field of the MM context is itself a separate MM context. *Id.* Defendants contend that the

information contained in the MM context is stored in data fields, but these fields are not themselves

separate MM contexts. *Id.* (citing Dkt. No. 130-1 at ¶ 61).

Defendants further argue that every reference in the '677 Patent to the deletion of the MM

context requires deleting the entire context stored in the MME. (Dkt. No. 130 at 32) (citing '677

Patent, at 2:65–3:8, 15:33–34, 17:31–32, 18:47–49). Defendants contend that the '677 Patent does not refer to multiple MM contexts stored in the MME for a single UE, or suggest that some portion of the MM context can, or should, be deleted. (Dkt. No. 130 at 32). Defendants further argue that the table cited by Plaintiff does not support its contention that there must be a "multitude" of MM contexts. (*Id.* at 33). Defendants contend that the use of the plural "contexts" refers to two different contexts, and does not imply that there are multiple MM contexts for a single UE, as Plaintiff suggest. *Id.* (Dkt. No. 130-1 at ¶ 65). Defendants further contend that the next tables in the same specification clarify that a given "context" refers to the record of all the fields (*e.g.*, IMSI, MSISDN, etc.), not a single field. (Dkt. No. 130 at 33) (Dkt. No. 130-4 at 14-18). Defendants argue that each of these tables is titled to reflect a single context, and each singular context contains multiple fields within it. *Id.*

Plaintiff replies that nothing about the phrase deleting "the MM context" suggests that each and every MM context must be deleted, or suggests that a POSITA would not consider deleting a field of MM context information to be deleting "the MM context." (Dkt. No. 139 at 11) (citing Dkt. No. 139-1 at ¶¶ 54-55). Plaintiff also argues that the phrase "an" MM context appears in the description of one of the preferred embodiments. (Dkt. No. 139 at 11) (citing '677 Patent at 13:25–32). Plaintiff further argues that the specification never states that the "entire" or "whole" or "all of" the MM context must be deleted. (Dkt. No. 139 at 11).

Plaintiff also argues that the stated goal of the '677 Patent is "to save network resources," and a person of ordinary skill in the art would have understood that network resources are saved so long as at least some information is deleted from the MME. *Id.* (citing Dkt. No. 139-1 at ¶ 56). Plaintiff contends that the problem in the art at the time of the '677 Patent was that the MME did not delete any context information. (Dkt. No. 139 at 11). Plaintiff also argues that the section of

the 3GPP standard cited by Defendants discusses the "charging information" that is collected by an SGSN (a 3G network component), and does not state that an MME (the LTE network component recited in the '677 Patent) can only have one MM context per UE at a time. (*Id.* at 12). Plaintiff further contends that Defendants' cite to context information stored in other network components does not show that the "MM context" of the '677 Patent must refer to every field in the "MM and EPS bearer contexts" table. *Id.*

For the following reasons, the Court finds that the phrase **"detaching, by the MME, the UE from the 3GPP network,"** and the phrase **"detach the UE from the 3GPP network"** should be construed to mean **"delete the MM context of the UE by the MME."**

b) Analysis

The phrase "detaching, by the MME, the UE from the 3GPP network" appears in claim 1 of the '677 Patent. The phrase "detach the UE from the 3GPP network" appears in claim 8 of the '677 Patent. The parties agree that "detaching" relates to a deletion of context information associated with a UE, but disagree as to what amount of "deleting" is required by the claims. The Court finds that "detaching" means deleting the entire context stored in the MME. The specification refers to a mobility management context ("MM context") stored in the mobility management entity ("MME") corresponding to each user equipment ("UE").[3] '677 Patent at 2:60–63 ("Once the UE accesses a 3GPP network, the 3GPP network creates bearer resources of the UE and a mobility management context of the UE. The mobility management context of the UE exists in the MME."). The specification further states that the mobility management entity (MME) provides "mobility management of a control plane, including management of a user context and a

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[3] The parties appear to agree that "each UE only has a single table of context information stored in the MME." (Dkt. No. 139-1 at ¶ 54).

mobility state and allocation of temporary user identities." *Id.* at 1:35–38. The specification adds

that "when the UE is handed over or switched from a 3GPP network to a non-3GPP network, user

detachment needs to be performed to save network resources." *Id.* at 2:65–3:1. The specification

indicates that a problem with the prior art is that "when the UE is handed over or switched from a

3GPP network to a non-3GPP network, the 3GPP network merely deletes the bearer resources of

the UE, but does not delete the mobility management context of the UE . . . ." *Id.* at 3:10–14.[4]

The specification states that the solution to the problem is to delete both the bearer

resources of the UE and the mobility management context as a way to save resources. *Id.* at 3:3–

5 ("The detachment of the 3GPP network indicates that the 3GPP network deletes the bearer

resources of the UE *and the mobility management context of the UE*.") (emphasis added). The

specification repeats deleting "*the* MM context" seventy times. *See, e.g.*, *id.* at 15:33–34 ("If [the

UE should be detached], the bearer resources and *the* MM context used by the UE in the 3GPP

network are deleted.") (emphasis added), 17:31–32 ("the MME deletes *the* MM context and the

bearer resources.") (emphasis added), 18:47–49 ("if the MME finds that the default bearer of the

UE is deleted, the MME deletes *the* MM context of the UE (that is, the MME detaches the UE

from the 3GPP network).)" (emphasis added). Accordingly, the Court finds that "detaching"

means deleting the MM context of the UE by the MME.

Plaintiff argues that there are numerous different "MM contexts," and "detaching" refers

to deleting at least one context from the MME. (Dkt. No. 124 at 25-26). In other words, Plaintiff

contends that "detaching" requires a deletion of one or more of the entries from the MM context

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[4] The specification indicates that there is also an MM context stored at the UE. '677 Patent at 2:64–65 ("Furthermore, bearer resources of a 3GPP network and a mobility management context of a 3GPP network are also created in the UE."). The parties appear to agree that the claims do not require deleting the MM context stored at the UE. (Dkt. No. 130 at 31 n.7).

table, with each entry understood as an "MM Context." (*Id.* at 26). Plaintiff further argues that "the '677 Patent repeatedly and consistently defines 'detaching' as a deletion of MM context information of the UE by the MME." (*Id.* at 27). Plaintiff points to the only instance in the specification that states "[i]f the MM finds that all bearer resources of the UE are deleted, the MME further determines whether to delete *an* MM context (i.e., detaching the UE from the 3GPP network)." *Id.* (citing '677 Patent at 13:27–30) (emphasis added).

The Court disagrees with Plaintiff's characterization of the intrinsic evidence. Contrary to Plaintiff's suggestion, the specification does not "repeatedly and consistently" mention "MM context *information*." Indeed, the specification does not state that "information" from the MM context is deleted. Likewise, the specification does not state that a "field" is deleted. Instead, the specification "repeatedly and consistently" states that "the MM context" is deleted. Accordingly, the Court reject Plaintiff's construction because it is inconsistent with the weight of the intrinsic evidence. *Demarini Sports v. Worth*, 239 F.3d 1314, 1327 (Fed. Cir. 2001) ("We note that claim terms are not construed in a vacuum. Rather, to interpret claim terms we look to all of the intrinsic evidence as it pertains to the terms in question.").

Moreover, Plaintiff's argument regarding the extrinsic evidence is not persuasive. The table from the 3GPP standards does not show a "multitude" of MM contexts.

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5.7.2   MME

The MME maintains MM context and EPS bearer context information for UEs in the ECM-IDLE, ECM-CONNECTED and EMM-DEREGISTERED states. Table 5.7.2-1 shows the context fields for one UE.

Table 5.7.2-1: MME MM and EPS bearer Contexts

Field	Description	Status
IMSI	IMSI (International Mobile Subscriber Identity) is the subscribers permanent identity.	
MSISDN	The basic MSISDN of the UE. The presence is dictated by its storage in the HSS.	
MM State	Mobility management state ECM-IDLE, ECM-CONNECTED, EMM-DEREGISTERED.	

(Dkt. No. 124-4 at 2) (highlighting added). Instead, the table is titled "MM and EPS Bearer Contexts" because the table contains the fields present in two different contexts, an MM context and an EPS bearer context. *Id.* In other words, the use of the plural "contexts" refers to these two different contexts, and does not imply that there are multiple MM contexts for a single UE, as Plaintiff suggests. Indeed, the introduction sentence states that the table "shows the context *fields* for one UE." *Id.* (emphasis added). For example, the table shows an "IMSI" field and an "MM State" field. *Id.* Similarly, the other tables in the specification confirm that a given "context" refers to the record of all the fields (*e.g.*, IMSI, MSISDN, etc.), and not a single field.

Table 5.7.3-1: S-GW EPS bearer context

Field	Description	E-UTRAN	UTRAN/GERAN
IMSI	IMSI (International Mobile Subscriber Identity) is the subscriber permanent identity.	X	X
MSISDN	The basic MSISDN of the UE. The presence is dictated by its storage in the HSS.	X	X
Selected CN operator id	Selected core network operator identity (to support network sharing as defined in TS 23.251 [24]).	X	X

Table 5.7.4-1: P-GW context

Field	Description	E-UTRAN	UTRAN/GERAN
IMSI	IMSI (International Mobile Subscriber Identity) is the subscriber permanent identity.	X	X
MSISDN	The basic MSISDN of the UE. The presence is dictated by its storage in the HSS.	X	X
Selected CN operator id	Selected core network operator identity (to support network sharing as defined in TS 23.251 [24]).	X	X
RAT type	Current RAT	X	X

Table 5.7.5-1: UE context

Field	Description
IMSI	IMSI (International Mobile Subscriber Identity) is the subscribers permanent identity.
EMM State	Mobility management state EMM-REGISTERED, EMM-DEREGISTERED.
GUTI	Globally Unique Temporary Identity.
ME Identity	Mobile Equipment Identity – (e.g. IMEI/IMEISV) Software Version Number.

(Dkt. No. 130-4 at 14-18). Each of the tables above is titled to reflect a single context, and each singular context contains multiple fields within it. Accordingly, the Court rejects Plaintiff's construction. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

      c) **Court's Construction**

The Court construes the phrase **"detaching, by the MME, the UE from the 3GPP network,"** and the phrase **"detach the UE from the 3GPP network"** to mean **"delete the MM context of the UE by the MME."**

V. CONCLUSION

The Court adopts the constructions above for the disputed and agreed terms of the Asserted Patents. Furthermore, the parties should ensure that all testimony that relates to the terms addressed in this Order is constrained by the Court's reasoning. However, in the presence of the jury the parties should not expressly or implicitly refer to each other's claim construction positions and should not expressly refer to any portion of this Order that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

SIGNED this 24th day of May, 2017.
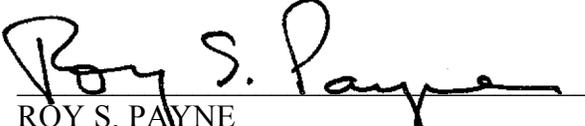
ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE