

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

In re: Mobile Telecommunications Technologies, LLC	:	C.A. No. 16-md-2722-LPS-CJB
ARRIS GROUP, INC.,	:	
Plaintiff,	:	C.A. No. 16-259-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	
UBEE INTERACTIVE INC.,	:	
Plaintiff,	:	C.A. No. 16-260-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Plaintiff,	:	C.A. No. 16-692-LPS-CJB
v.	:	
TIME WARNER CABLE, INC., ET AL.,	:	
Defendants.	:	
BRIGHT HOUSE NETWORKS, LLC,	:	
Plaintiff,	:	C.A. No. 16-277-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	

MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-694-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
CHARTER COMMUNICATIONS INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
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	:	C.A. No. 16-696-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
ARUBA NETWORKS, INC., ET AL.,	:	
	:	
Defendants.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-697-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
BROCADE COMMUNICATIONS SYSTEMS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-698-LPS-CJB
Plaintiff,	:	
v.	:	
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JUNIPER NETWORKS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-699-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
RUCKUS WIRELESS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-700-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
AEROHIVE NETWORKS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-701-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
XIRRUS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 17-657-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS,	:	
	:	
Defendant.	:	

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#### **MEMORANDUM OPINION**

September 19, 2017  
Wilmington, Delaware

  
STARK, U.S. District Judge:

Mobile Telecommunications Technologies, LLC (“MTel”) alleges infringement of U.S. Patent Nos. 5,590,403 (“the ’403 patent”); 5,915,210 (“the ’210 patent”); and 5,659,891 (“the ’891 patent,” and collectively with the ’403 and ’210 patents, the “asserted patents”). The asserted patents relate to a wireless messaging network.

In a separate but recently-transferred and consolidated case, MTel alleges that Celco Partnership d/b/a Verizon Wireless (“Verizon”) infringed U.S. Patent No. 5,581,804 (“the ’804 patent”), a divisional of the ’403 patent.<sup>1</sup>

Presently before the Court is the issue of claim construction. The parties – the patentee, MTel, and the accused infringers (hereinafter referred to as “Defendants”) – submitted technology tutorials (*see* C.A. No. 16-md-2722-LPS-CJB D.I. 257, 259<sup>2</sup>) and briefs (*see* D.I. 258, 261, 283, 284, 305, 397, 398, 417, 418). The Court held a first claim construction hearing on June 26, 2017 (*see* D.I. 437 (“Tr.”)) in *In re MTel* and a second claim construction hearing on August 28, 2017 in *MTel v. Verizon* (*see* D.I. 486 (“Verizon Tr.”)).

## I. LEGAL STANDARDS

The ultimate question of the proper construction of a patent is a question of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388-91 (1996)). “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.”

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<sup>1</sup>For ease of reference, in discussing the original case, the Court will refer to “*In re MTel*,” and in discussing the recently-consolidated case, the Court will refer to “*MTel v. Verizon*.”

<sup>2</sup>All references to the docket index (D.I.) are to Case No. 16-md-2722-LPS-CJB, unless otherwise noted.

*Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted).

“[T]here is no magic formula or catechism for conducting claim construction.” *Id.* at 1324.

Instead, the court is free to attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.*

“[T]he words of a claim are generally given their ordinary and customary meaning . . . [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312-13 (internal citations and quotation marks omitted). “[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted). The patent 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.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

While “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim also must be considered. *Phillips*, 415 F.3d at 1314. Furthermore, “[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment . . . [b]ecause claim terms are normally used consistently throughout the patent . . . .” *Id.* (internal citation omitted).

It is likewise true that “[d]ifferences among claims can also be a useful guide . . . . For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 1314-15 (internal citation omitted). This “presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one

party is urging that the limitation in the dependent claim should be read into the independent claim.” *SunRace Roots Enter. Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. It bears emphasis that “[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)) (internal quotation marks omitted).

In addition to the specification, a court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence,” “consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

In some cases, “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.” *Teva*, 135 S. Ct. at

841. Extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. For instance, technical dictionaries can assist the court in determining the meaning of a term to those of skill in the relevant art because such dictionaries “endeavor to collect the accepted meanings of terms used in various fields of science and technology.” *Phillips*, 415 F.3d at 1318. In addition, expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Id.* Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, while extrinsic evidence “may be useful” to the court, it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

Finally, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that “a claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.” *Osram GmbH v. Int’l Trade Comm’n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007)



(quoting *Modine Mfg. Co. v. U.S. Int'l Trade Comm'n*, 75 F.3d 1545, 1550 (Fed. Cir. 1996)).

## II. CONSTRUCTION OF DISPUTED TERMS<sup>3</sup>

### A. The '891 Patent

#### 1. “paging carriers”/ “paging system”/ “modulated carriers”<sup>4</sup>

<b>MTel</b> “transmission signal that can be modulated to carry paging information” / preamble, not limiting, plain meaning / “transmission signals that are modulated to carry information”
<b>Defendants</b> “carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use” / “a system operating within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use” / “modulated carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use”
<b>Court</b> “carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use” / “a system operating within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use” / “modulated carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use”

The parties agree that a “carrier” is a “radio frequency signal that is capable of being modulated to carry information.” (D.I. 210 Ex. A at 2) MTel contends that it must necessarily follow that a “modulated carrier” is a radio frequency transmission signal modulated to carry

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<sup>3</sup>The parties in *In re MTel* agreed to certain constructions prior to the claim construction hearing, all of which the Court will adopt. (See generally D.I. 210 Ex. A) During the hearing, the parties notified the Court of an additional term on which they had since reached agreement, “operating [a plurality / at least two] paging carriers,” which appears in claims 1 and 3 of the '891 patent. (Tr. at 6) The parties agreed to give the term its plain and ordinary meaning. (*Id.* at 6-7) The Court will adopt that construction. Similarly, the parties in *MTel v. Verizon* agreed to certain constructions prior to the claim construction hearing, all of which the Court will adopt. (See generally D.I. 382 Ex. A)

<sup>4</sup>The term “paging carriers” appears in claims 1 and 3 of the '891 patent. The terms “modulated carriers” and “paging system” appear in claim 5 of the '891 patent.

information, and that a “paging carrier” is a radio frequency transmission signal modulated to carry paging information. (D.I. 284 at 13) Further, according to MTel, “paging information” “is just digital data.” (Tr. at 29) For support, MTel explains that its construction is the construction adopted by another court on two prior occasions.<sup>5</sup>

Defendants counter that, because the ’891 patent is directed to challenges encountered in sending carrier signals within the FCC-allocated channels for mobile paging use, the “paging carriers” term must be read as coming within those FCC-allocated channels – i.e., the channels assigned by the FCC to mobile paging use. (D.I. 258 at 11-12) Defendants point to the patent’s abstract and specification, both of which describe the invention “with repeated reference” to the saturation problem caused by the narrow FCC-designated channels for mobile paging. (*Id.* at 12)<sup>6</sup>

The Court agrees with Defendants. While the claims do not specifically mention the FCC

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<sup>5</sup>MTel points to *MTel, LLC v. T-Mobile USA, Inc.*, No 2:13-cv-886 (E.D. Tex. Jan. 23, 2015) (D.I. 262 Ex. D (“*T-Mobile*”)) and *MTel, LLC v. Leap Wireless Int’l Inc.*, No. 2:13-cv-885 (E.D. Tex. May 13, 2015) (D.I. 262 Ex. E (“*Leap Wireless*”)). During oral argument, Defendants drew the Court’s attention to another case, *MTel, LLC v. Sprint Nextel Corp., et al.*, No. 2:12-cv-832 (E.D. Tex. May 2, 2014) (D.I. 262 Ex. C (“*Sprint*”)).

<sup>6</sup>MTel also contends that the preamble of claim 5, “paging system,” is not limiting and should be given its plain and ordinary meaning. (D.I. 284 at 13, 29; Tr. at 23) Defendants respond that “paging system” is “clearly the antecedent basis for further elements” in claim 5 – including “modulated carrier” – and, therefore, “it is a positive limitation.” (Tr. at 34; D.I. 258 at 11 & n.11) The Court agrees with Defendants and the prior Texas cases that the preambles are limiting. (*See T-Mobile* at 47 (parties agreed to preliminary construction that preambles of claims 1, 3, and 5 of ’891 patent were limiting); *see also Leap Wireless* at 23-25 (finding preamble limiting based on both Field of Invention and Summary of Invention limiting claimed invention to paging use, as well as “the extensive use of the[] preambles to provide antecedent basis for terms used in the bodies of the claims”); *see also* D.I. 258 Ex. 13 at 14 (*MTel v. AT&T* Joint Claim Construction Chart, in which MTel agrees that preamble for claims 1, 3, and 5 of the ’891 patent is limiting))

requirements, the claims “must be read in view of the specification, of which they are a part,” *Phillips*, 415 F.3d at 1315, and, contrary to MTel’s contention, the specification does not support broadly construing the claims as applying to all “digital data.” Instead, the abstract and specification limit the carriers to those within the FCC-allocated mobile paging channels. *See* ’891 patent at Abstract (“The present invention relates generally to multicarrier modulation techniques, and more particularly, to a method of multicarrier modulation using co-located transmitters to achieve higher transmission capacity *for mobile paging* and two-way digital communication *in a manner consistent with FCC emission mask limits*”) (emphasis added); *see also id.* at 1:6-9 (describing invention as “a method for operating more than one carrier in a single mask-defined, bandlimited channel *assigned to mobile paging use*”) (emphasis added); *id.* at 2:15-17 (“It is an object of this invention to achieve higher capacity over a bandlimited channel *for paging* without the need for stringent subchannel interference protection.”) (emphasis added); *id.* at 5:10-15 (“Thus, according to the present invention, increased transmission capacity is achieved by operating more than one carrier in a standard bandlimited channel *assigned for mobile paging use*.”) (emphasis added); *see also* Tr. at 45 (MTel counsel: “[P]aging . . . is a type of technology that was developed . . . for the narrowband PCS spectrum [defined for two-way paging by the FCC]”).

The specification also supports the conclusion that the carriers were intended only to comply with FCC-designated mobile paging channels, not the broader spectrum now sought by MTel (*see* Tr. at 28). “The written description’s detailed discussion of the prior art problem addressed by the patented invention” – here, transmission saturation of the “finite range of air space dedicated to mobile paging use” by the FCC (*see, e.g.*, ’891 patent at 1:10-15, 19-21, 36-

42) – further supports the conclusion that the carrier, as claimed, does not apply to all digital data, but instead, is limited to the paging channels allocated by the FCC. *See Honeywell Intern., Inc. V. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006).

While the earlier cases relied on by MTel concluded the specification is not so limiting (*see, e.g., T-Mobile* at 28), those cases decided different issues.<sup>7</sup> While the Court has considered these analyses and conclusions, the Court declines to adopt their constructions. In this Court’s view, as explained above, the specification defines the invention as related to the FCC-allocated channels for mobile paging use and these restrictions must be reflected in the Court’s claim constructions.<sup>8</sup>

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<sup>7</sup>In the Texas cases, the courts considered the FCC requirements only as related to the claim term “single mask-defined, bandlimited channel,” and not “paging carrier.” (Tr. at 19) When the *T-Mobile* court considered the term “paging carrier” or “modulated carrier,” the dispute centered on whether to add the phrase “and are not orthogonally multiplexed.” (*T-Mobile* at 34) The *Leap Wireless* court only considered “paging carrier” as part of the preambles of the ’891 patent, finding that the preamble limited the invention to channels assigned to mobile paging use. (*See Leap Wireless* at 23-24) In *Sprint*, Defendants’ proposed construction was “transmission signal modulated to carry paging information to one or more pages,” and the court ultimately adopted a similar construction (which it provided to the parties as a preliminary construction before the claim construction hearing, and which the parties agreed to adopt): “transmission signal that can be modulated to carry paging information.” (*Sprint* at 16-17) The court provided no analysis on whether the FCC limitations should be part of the construction. (*See id.* at 18-19)

<sup>8</sup>At oral argument, MTel argued that Defendants’ construction improperly results in a moving target of patent coverage by allowing the scope of the claims to change whenever the FCC changes the amount of spectrum allocated to paging. (Tr. at 26) The Court is not persuaded that this argument should cause it to adopt MTel’s constructions. First, it is arguable whether the claim scope would change due to a subsequent change by the FCC. *See generally Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004) (“A court construing a patent claim seeks to accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention.”). Second, it appears to be undisputed that, in reality, the prospect of the FCC changing its paging allocation “is so unlikely to happen because once you define [the channel], everyone relies on those channels as they have been defined” and changing the channel “would require you to throw out every single device that currently exists.” (Tr. at 22)

## 2. “mask”<sup>9</sup>

<b>MTel</b> “emission limitation within a channel to prevent interference caused by signals straying or spilling into adjacent channels”
<b>Defendants</b> “emission limitation, imposed by the FCC, both within a channel and in the adjacent spectrum to prevent interference caused by signals straying or spilling into adjacent channels”
<b>Court</b> “emission limitation, imposed by the FCC, both within a channel and in the adjacent spectrum to prevent interference caused by signals straying or spilling into adjacent channels”

## “mask-defined, bandlimited channel”<sup>10</sup>

<b>MTel</b> “a limited frequency range, that is defined by a mask”
<b>Defendants</b> “a channel in a frequency band allocated by the FCC for mobile paging use and to which the mask applies”
<b>Court</b> “a channel in a frequency band allocated by the FCC for mobile paging use and to which the mask applies”

Two disputes surround the construction of “mask” terms: (1) whether the mask is required by the FCC; and (2) whether the mask applies only to the channel itself or also to the adjacent spectrum.

Consistent with the Court’s construction of “paging carrier” and “modulated carrier,” the Court finds that “mask” and “mask-defined, bandlimited channel” must be construed as being defined by FCC requirements. *See* ’891 patent at Abstract (“A method of multicarrier

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<sup>9</sup>This term appears in claims 1, 3, and 5 of the ’891 patent.

<sup>10</sup>This term appears in claims 1, 3, and 5 of the ’891 patent.

modulation using co-located transmitters to achieve higher transmission capacity for mobile paging and two-way digital communication ***in a manner consistent with FCC emission mask limits.***) (emphasis added); *see also id.* at 4:41-46 (“In accordance with the present invention, these and other parameters can be adjusted so that the carriers generated and transmitted according to the present invention will remain ***within the FCC emission limits*** while providing optimal transmission performance.”) (emphasis added); *id.* at 5:11-19 (“In the modulation technique of the present invention, carriers operating at different frequencies are ***fit within a single bandwidth allocation in a manner consistent with FCC mask requirements.***”) (emphasis added).

It follows that the Court also agrees with Defendants that the mask must apply both to the channel and the adjacent spectrum. (*See* D.I. 258 Ex. 12 (FCC Regulations) at 123 (§ 22.99, defining “Emission mask” as “[t]he design limits imposed, as a condition or type acceptance, on the mean power of emissions as a function of frequency ***both within the authorized bandwidth and in the adjacent spectrum***”) (emphasis added))

Turning to the term “mask-defined, bandlimited channel,” the Court again construes the term as limited by FCC requirements. The “bandlimited channel” to which the invention refers is “a channel in a frequency band allocated by the FCC for mobile paging use.” (D.I. 258 at 15-16 (citing ’891 patent at 5:11-16 (“Thus, according to the present invention, increased transmission capacity is achieved by operating more than one carrier in a standard bandlimited channel assigned for mobile paging use, ***such as in the Narrowband Personal Communications***”

*Service or the Part 22 Service* [which is defined by the FCC].”))<sup>11</sup>

3. “the band edge of [the / said] mask defining said channel”<sup>12</sup>

<b>MTel</b> “the edge of the mask nearest to the outermost carrier”
<b>Defendants</b> Indefinite
<b>Court</b> Indefinite

Defendants contend that the term “the band edge of the mask” is indefinite. While masks contain multiple points that could be understood to be “*a* band edge,” Defendants assert that the patent provides no objective boundary by which to discern which edge is “*the* band edge.” (*Id.* at 23-24) Defendants also contend that “previous courts have struggled mightily with figuring out what this term means.”<sup>13</sup> (Tr. at 50) As Defendants view it, not only does MTel rely here on a

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<sup>11</sup>In *Sprint*, the parties agreed to construe “single mask-defined, bandlimited channel” as “a channel confined to a frequency range.” (*Sprint* at 76) Subsequent cases to address this term adopted that same construction. (See *T-Mobile* at 25; *Leap Wireless* at 21) Defendants argue that the Texas construction is incorrect because a channel by itself has a limited frequency range and “a ‘mask’ is an *additional* requirement applied to the channel.” (D.I. 258 at 15) Therefore, Defendants assert that the Texas cases read the limitations “mask-defined” and “bandlimited” out of the phrase. (D.I. 283 at 11) The Court agrees and has, therefore, adopted different constructions than the Texas cases.

<sup>12</sup>This term appears in claims 1, 3, and 5 of the ’891 patent.

<sup>13</sup>The term was first addressed by *Leap Wireless*, where the court *sua sponte* provided the construction “the innermost frequencies at which the mask requires attenuation of the signal.” (*Leap Wireless* at 35) That construction, according to Defendants, is not only “demonstrably incorrect” (Tr. at 51), as it excludes the only three embodiments of the claimed carrier signals disclosed in the specification (Figs. 5A, 6A, and 7A), but was also questioned in a later case before the same judge (*MTel v. AT&T*). (D.I. 258 Ex. 14 at 4-5 (*AT&T* court explaining it was “on the fence” about term’s prior construction)) The *AT&T* case settled before the court could resolve the issue. (D.I. 258 at 24)

previous construction questioned by the court that had adopted it, but it changes that construction from “the innermost frequencies at which the mask requires attenuation of the signal” to “the edge of the mask nearest to the outermost carrier.” In addition, Defendants contend that MTel’s construction improperly bases “the band edge” for a given mask on where the carrier is located, making the term a moving target. (Tr. at 58)

MTel responds that, for any given mask, there are multiple “band edges” and therefore, the term “band edge” does not refer to a single frequency but, rather, can refer to multiple relevant frequency differences. (D.I. 284 at 24) MTel asserts that the specification provides an “exemplary mask” in Figure 4 (which was not meant to apply to Figures 5-7 (Tr. at 67)) and “specifies exactly where the measurement [for the band edge] should be taken using Fig. 3,” as an example: “the frequency difference between the center frequency of each carrier and the nearest band edge of the mask is greater than half the frequency difference between the center frequencies of the two carriers.” (*Id.* at 25-26) According to MTel, “[i]f the resulting measurement” based on the nearest point of the mask in relation to the outermost carrier “satisfies the claimed spacing relationship, . . . then *all* points on the band edge of the mask would satisfy the spacing relationship.” (*Id.* at 26) Finally, MTel insists that its proposed construction is “conceptually the same” as that adopted by the court in *Leap Wireless*. (*Id.*)<sup>14</sup>

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<sup>14</sup>MTel also attempts to rely on an expert declaration submitted by Dr. Jay Kesan in *AT&T*. (D.I. 284 at 25) Defendants argue that Dr. Kesan’s declaration only supported the prior incorrect *Leap Wireless* construction, not MTel’s new construction asserted here. (Tr. at 58-59) Furthermore, because Dr. Kesan’s report was submitted in a prior action, Defendants assert that it must be excluded as inadmissible hearsay. (*Id.*) (citing *Arrowood Indemn. Co. v. Hartford Fire Ins. Co.*, 774 F. Supp. 2d 636, 648-49 (D. Del. 2011)) Defendants contend that MTel’s reliance on an expert report by Dr. Paul Min from *MTel v. Samsung* (D.I. 262 Ex. O) is inadmissible hearsay for the same reasons.



The Court agrees with Defendants. MTel's construction results in a moving target dependent on where the outermost carrier is located, a result explicitly rejected by the Texas court. (*Leap Wireless* at 35 ("Plaintiff's reliance on the amplitude of the carrier signals, however, is amorphous and is not supported by the specification. Moreover, such an interpretation would fail to give adequate notice to the public regarding the scope of the claims.))) The specification and "exemplary" figures provide no objective bounds to delineate which edge of the mask is "the band edge." A person of ordinary skill in the art would not know with reasonable certainty which band edge is *the* band edge of the mask. Furthermore, Dr. Kesan's and Dr. Min's expert declarations do not opine on MTel's current proposed construction, instead adopting the *Leap Wireless* construction, which was subsequently questioned by the court that adopted it. Moreover, Dr. Kesan's declaration contains nearly no analysis in reaching its conclusion that the bounds of the patent would be understood by a person having ordinary skill in the art (*see* D.I. 285 Ex. A at 3; *see also id.* Ex. H at 6), and Dr. Min testified that the term "band edge of the mask" is indefinite (*see* D.I. 262 Ex. O at 10-15).

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The Court disagrees. Even assuming the expert reports from the other cases are hearsay, it is not improper for the Court to consider them as extrinsic evidence that may impact a determination of the proper construction. *See Sterisil, Inc. v. ProEdge Dental Products, Inc.*, 2015 WL 13091166, at n.2 (D. Colo. Aug. 7, 2015) ("As a general matter, courts and commentators have recommended an approach to claim construction hearings and technology tutorials where the Federal Rules of Evidence are applied 'loosely' without demanding all of the requirements for admissibility to be satisfied as would be the case for presentation of evidence to a jury of lay persons."); *Neev v. Abbott Medical Optics, Inc.*, 2012 WL 1066797 (D. Del. Mar. 26, 2012) (overruling hearsay objection to portions of claim construction brief).

In any event, even considering Dr. Kesan's and Dr. Min's expert reports in connection with this claim construction dispute, the Court finds that the claims are indefinite.

4. “adjacent [carriers / subchannels] overlap with each other”<sup>15</sup>

<b>MTel</b> “each [carrier / subchannel] overlaps with each [carrier / subchannel] adjacent to it”
<b>Defendants</b> Plain and ordinary meaning
<b>Court</b> “each [carrier / subchannel] overlaps with each [carrier / subchannel] adjacent to it”

Defendants contend that this term requires no construction and should be given its plain and ordinary meaning. According to Defendants, if a channel contains three adjacent carriers, only two need overlap. Under MTel’s construction, however, *each* carrier or subchannel must overlap. Because the Court finds that the term has more than one ordinary meaning, and the parties present a genuine dispute, a construction other than an unspecified plain and ordinary meaning is required. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008).

The claim language states simply that “adjacent carriers overlap with each other” and “adjacent subchannels overlap with each other.” ’891 patent at cl. 2, 4. It is true, as Defendants emphasize, that the patent contains figures showing only two carriers overlapping, but it is also true that each of these figures shows only two carriers. Hence, in each figure, each carrier overlaps with each carrier adjacent to it. Nothing in the claims or specification teach that adjacent carriers (or subchannels) would not overlap.

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<sup>15</sup>This term appears in claims 2 and 4 of the ’891 patent.

5. “plurality of mobile receiving units independently receiving one of said plurality of carriers”<sup>16</sup>

<b>MTel</b> Plain and ordinary meaning
<b>Defendants</b> “two or more mobile units, each tuning to one of the plurality of carriers”
<b>Court</b> “two or more mobile receiving units capable of independently receiving a particular carrier”

Defendants contend that the patent “describes one-to-one correspondence between a carrier transmitted at a particular frequency and a mobile receiving unit.” (D.I. 258 at 16)

Defendants also assert that MTel’s proposal is contrary to the position advocated by the patentee during prosecution, which was that “receiving the entire frequency spectrum of all the channels was ‘directly contrary to the requirements of claim 5.’” (*Id.* at 17)

Contrary to Defendants’ argument, the prosecution history is consistent with MTel’s position here. Claim 5 does not require simultaneous receipt of “the entire frequency spectrum of all channels” in order to receive any one channel (as was required by the prior art), but instead, requires only that “independent receiving units are capable of receiving one of said plurality of carriers.” (D.I. 284 at 21; Tr. at 81) As MTel puts it, “[w]hether or not the plurality of mobile units also receive additional subcarriers is irrelevant.” (D.I. 284 at 21)<sup>17</sup>

The Court agrees with the substance of MTel’s position, but finds a construction of the

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<sup>16</sup>This term appears in claim 5 of the ’891 patent.

<sup>17</sup>The *T-Mobile* court construed the term “independently receiving one of said plurality of carriers” to have its plain meaning, specifically rejecting T-Mobile’s argument that the claim should be limited to receiving one **and only one** channel. (*See T-Mobile* at 33) Defendants have not raised any argument here that the *T-Mobile* Court did not address.

term will be helpful to the jury.

Accordingly, the Court will construe the term as “two or more mobile receiving units capable of independently receiving a particular carrier.”

**B. The '403 and '210 Patents**

**1. “set of” / “set of [base] transmitters”<sup>18</sup>**

<b>MTel</b> “one or more” / “one or more [base] transmitters”
<b>Defendants</b> Construe only as part of the phrase “set of [base] transmitters” / “a set of at least two [base] transmitters”
<b>Court</b> Construe only as part of the phrase “set of [base] transmitters” / “a set of at least two [base] transmitters”

**“second set of [base] transmitters”<sup>19</sup>**

<b>MTel</b> “a set of one or more [base] transmitters that is not identical to the first set of [base] transmitters”
<b>Defendants</b> “at least two [base] transmitters that are distinct from the [base] transmitters included in the first set of [base] transmitters”
<b>Court</b> “a set of at least two [base] transmitters that are distinct from the [base] transmitters included in the first set of [base] transmitters”

Defendants contend that the word “set” as applied to a plural noun (“transmitters”) must be construed as requiring at least two transmitters. (D.I. 258 at 4) In support, Defendants state

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<sup>18</sup>These terms appear in claims 1 and 10 of the '403 patent.

<sup>19</sup>This term appears in claims 1 and 10 of the '403 patent.

that nowhere does the patent refer to a “set” of transmitters as only a single transmitter. (Tr. at 97 (explaining that in each instance where MTel asserts patent references “set” of transmitters, it is instead “merely describing what certain *transmitters* are doing at certain times. It’s not saying what certain *sets* of transmitters are doing at certain times.”) (emphasis added)) Defendants argue that MTel misreads Figures 6 and 7. (*Id.*) While MTel asserts that only one transmitter is shown in Figure 6 (and referred to by Figure 7), Defendants contend that the patent makes clear that more transmitters are necessary, and that showing only one transmitter is merely exemplary. *See* ’403 patent at 11:17-26 (“It should be understood that the exemplary system shown in FIG. 6 includes a modest number of elements for ease of explanation. It is envisioned that the system of the present invention include a large number of base transmitters . . . .”). Finally, Defendants contend that MTel disclaimed the possibility that “set” equals “one or more” in IPR proceedings. (Tr. at 93-94 (describing MTel’s Patent Owner Preliminary Response, in which MTel states that it has “adopted the construction found by the Board . . . that ‘the ‘set’ must include a group (i.e., more than one), consistent with the plain and ordinary meaning”)); *see also Asylus Networks, Inc. v. Apple, Inc.*, 856 F.3d 1353, 1361 (Fed. Cir. 2017) (“[S]tatements made by a patent owner during an IPR proceeding can be considered during claim construction and relied upon to support a finding of prosecution disclaimer.”).

MTel responds that construing set as “at least two” would exclude a preferred embodiment as shown in pre-amended Figures 6 and 7 of the ’403 patent, which only had one transmitter in each set. MTel contends that while Figure 6 was amended during prosecution to include additional transmitters, the description of the preferred embodiment in Figure 7 was not amended and includes only one transmitter in each set. Furthermore, MTel asserts that claim 10

requires at least two transmitters because it deals with “intraset simulcasting [(i.e., simulcasting within each set of base transmitters)]” (Tr. at 84), while claim 1 only requires one transmitter in each set because it deals with “inter-set simulcasting [(i.e., simulcasting between two different sets of transmitters)]” (Tr. at 84-85). According to MTel, then, construing “set” as “at least two” transmitters would read out the preferred embodiment of claim 1.

The Court agrees with Defendants. Not only does the “plural form of ‘transmitters’ demonstrate[] that a ‘set of transmitters’ requires two or more transmitters” (*see Sprint* at 14), but the patent’s explanation of the only instance of a “set” referring to a single transmitter – which was effectively eliminated upon the amendment of Figure 6 – as an “exemplary system . . . with a modest number of elements for ease of explanation,” further supports construing “set” as “at least two.” ’403 patent at 11:17-26.<sup>20</sup> Furthermore, while MTel attempts to differentiate between claims 1 and 10 on the basis of “inter-set” versus “intraset” simulcasting, respectively, MTel also alleged that “[e]lements (d) and (e) [of claim 1, which each recite only one “set” of transmitters] do not require simulcast transmission, so . . . because they don’t require simulcasting, you only need one transmitter in each set.” (Tr. at 83-84) However, MTel has taken the opposite position in ongoing IPR proceedings, where it argued that elements (d) and (e) of claim 1 both require transmitting in simulcast, and therefore, would require at least two transmitters in each “set.” (Tr. at 94; D.I. 283-3 (Patent Owner Preliminary Response in IPR2017-00642) at 37)

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<sup>20</sup>In addition, this term was previously construed in *MTel v. Clearwire* (D.I. 262 Ex. B (“*Clearwire*”) at 7-8), as “a set of at least two [base] transmitters.” (*See also Sprint* at 14 (following *Clearwire* construction); *T-Mobile* at 16-17 (same); *Leap Wireless* at 11-12 (same)) The *Clearwire* court specifically rejected MTel’s contention that a set of transmitters could be a single transmitter due to the plural nature of “transmitters” and the fact that the method and system as disclosed in claim 10 would be “incapable of functioning in the manner recited” if a “set” contained just one transmitter. (*Id.* at 8)

Accordingly, the Court will construe “set of” / “set of [base] transmitters” in accordance with Defendants’ construction.

Regarding the proposed term “second set of [base] transmitters,” the Court adopts Defendants’ proposal of “at least two,” for the same reasons given above. However, the Court will add the introductory language “a set of,” consistent with the construction of “set of [base] transmitters.”

Next, MTel contends that the first and second sets need not be identical because “transmitters may be in more than one zone, [and therefore,] transmitters may be in more than one set.” (D.I. 284 at 6) Defendants respond that the transmitters in the first set must be distinct from transmitters in the second set (rather than non-identical) because overlapping transmitters would result in signal interference, a problem the patent is meant to overcome. (D.I. 258 at 6)

The Court agrees with Defendants. While MTel is correct that the patent discloses transmitters dynamically shifting from one *zone* to another, when one “*set*” of transmitters is transmitting a signal, the second “*set*” of transmitters is transmitting a different signal at the same time. (D.I. 258-1 Ex. 8 at 6-7 (explaining that two transmissions occur at same time)); *see also* ’403 patent at cl. 1(d), (e) (disclosing “a second block of information” being transmitted by the first set of transmitters “*during the same time period*” that “a third block of information” is transmitted by second set of transmitters). The two sets, therefore, must include distinct transmitters, in order to avoid interference; one transmitter cannot form the basis of two different sets simultaneously. This is further supported by the language of claim 10, which explains that when a transmitter from the first set is dynamically *reassigned* to a second set, an “updated first set” and “updated second set” of transmitters is created – i.e., rather than allowing the transmitter

to operate in both the first and second set of transmitters, the reassigned transmitter is now solely part of the “updated” set and is no longer part of its original set.

2. “plurality of [base] transmitters”/ “a second transmitter”<sup>21</sup>

<b>Mtel</b> “at least two [base] transmitters” / plain and ordinary meaning
<b>Defendants</b> “at least two [base] transmitters that are at least two separate structural units” / “a transmitter that is a separate structural unit from the first transmitter”
<b>Court</b> “at least two [base] transmitters that are at least two separate pieces of equipment” / “a transmitter that is a separate piece of equipment from the first transmitter”

The parties agree that a “plurality of transmitters” must be at least two base transmitters. Defendants contend that the “at least two” transmitters must constitute separate structural units.<sup>22</sup> According to Defendants, “a singularly located access point with multiple antennas cannot be multiple transmitters” because the patent makes clear that, central to its invention, is providing a communication system with wide area coverage. Defendants thus assert that a “plurality of transmitters” or “a second transmitter” must encompass multiple structural units across a relatively large area, rather than one structural unit with multiple antennas.

MTel responds that Defendants’ “separate structural units” language is too confusing to

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<sup>21</sup>The term “plurality of [base] transmitters” appears in claims 1 and 10 of the ’403 patent. The term “a second transmitter” appears in claims 1, 7, and 10 of the ’210 patent.

<sup>22</sup>This dispute has been raised in four prior *Markman* decisions construing the terms “transmitter[s]” and “base transmitter[s].” (*Clearwire* at 5-6; *Sprint* at 9-10; *T-Mobile* at 7-8, 11; *Leap Wireless* at 8-10) In each case, the court construed the terms as having their plain meaning, but specifically rejected MTel’s argument that “transmitting multiple signals or outputs from *a single structural* unit can suffice as multiple transmitters.” (See, e.g., *Clearwire* at 6) (emphasis added)



the jury and finds no basis in the patent. (Tr. at 103) MTel contends that because the parties have agreed to the constituent parts making up each term (e.g., construing “plurality” as “at least two” and agreeing that no construction of “transmitter” or “base transmitter” is necessary), the terms should be given their plain and ordinary meaning. (*Id.* at 105)

Because the terms at issue do not appear to have a single “ordinary meaning,” a decision by the Court that no construction is necessary or that the term has its “plain and ordinary meaning” would be inadequate here. *See O2 Micro*, 521 F.3d at 1361.

While MTel is correct that the patent nowhere recites “separate structural unit,” the patent is clear that the transmitters are intended to be separate devices. *See* ‘403 patent at 8:65-67, Fig. 6 (describing “an overview of the major elements of a preferred communication system according to the present invention,” and identifying two “*spatially separated* base transmitters 612 and 614”) (emphasis added); *see also* ’210 patent at 5:39-35, Fig. 6 (describing embodiment of invention comprising “a first transmitter means . . . , and a second transmitter means, *spatially separated* from the first transmitter”) (emphasis added). Furthermore, the specification makes clear that each transmitter has only one antenna and that the antenna is something separate from the transmitter. *See id.* at 8:67-9:2 (“Base transmitter 612 is connected to antenna 620, and base transmitter 614 is connected to antenna 622”). The specification also refers to each base transmitter as a transmitter station, consistent with Defendants’ construction that each transmitter is a separate structural unit. *Id.* at 9:5-7 (“Each zone preferably includes multiple transmitter stations, shown as, for example, base transmitters 613 and 615 in FIG. 6 . . .”).

Accordingly, the Court will adopt Defendants’ construction. However, to avoid potential juror confusion about the term “structural unit,” the Court will substitute into Defendants’

construction the term “pieces of equipment.”

3. “transmit / transmitting / transmitted . . . in simulcast”<sup>23</sup>

<b>MTel</b> “transmit / transmitting / transmitted the same information at the same time”
<b>Defendants</b> “transmit / transmitting / transmitted the same information/information signal at the same time by transmitters positioned to cover different geographic areas”
<b>Court</b> “transmit / transmitting / transmitted the same information at the same time”

The parties agree that simulcasting requires transmission of the same information at the same time. Defendants, however, propose that the transmitters must also cover different geographic areas. According to Defendants, because “simulcast” is “the combination of the two words ‘simultaneous’ and ‘broadcast,’” the construction must account for both. (Tr. at 114-15) Construing “simulcast” as transmitting at the same time only accounts for “simultaneous,” and the “different geographic areas” requirement is necessary to account for “broadcast.” (*Id.*) Defendants assert that the point of the invention is that “simulcast technology provides multiple transmitters, transmitting the same information, positioned to cover extended areas.” (*Id.* at 115) MTel responds that while simulcasting *may* be used by transmitters positioned to cover separate geographic areas, no such requirement exists in the claims. Instead, the claims contain their own geographical limitations by division into zones.

The Court agrees with MTel.<sup>24</sup> While the patent explains that transmitters are positioned

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<sup>23</sup>This term appears in claims 1 and 10 of the ’403 patent and claims 1, 10, and 19 of the ’210 patent.

<sup>24</sup>Each of the Texas cases to have construed the ’403 or ’210 patent likewise found that no such geographical limitation exists. (See *Clearwire* at 6; *Sprint* at 9-10; *T-Mobile* at 11; *Leap*

to cover extended areas, *see, e.g.*, '403 patent at 1:50-53, the patent does not require those extended areas always to be geographically distinct from one another. Instead, the patent discloses a system network that “controls the base transmitters to broadcast in simulcast during both systemwide and zonal time intervals.” '403 patent at Abstract. Further, the patent explains that the systemwide time interval is best utilized when the transmitter signals overlap or interfere. *Id.* at 12:19-22 (describing “systemwide time interval” in areas of overlap where “mobile units [are] located near the boundaries between zones where interference is likely”). The patent also acknowledges that, “[i]n some cases, the coverage area of a first transmitter may be entirely enclosed within the coverage area of another transmitter,” *id.* at 1:57-63, and “an overlap of transmitter coverage may occur,” *id.* at 9:59-60.

4. “updated [first / second] set of base transmitters”<sup>25</sup>

<p><b>MTel</b>  “a set of base transmitters that is not identical to the original [first / second] set of base transmitters”</p>
<p><b>Defendants</b>  “a set of base transmitters that contain at least one of the transmitters assigned to the original [first / second] set of base transmitters”</p>
<p><b>Court</b>  “a set of base transmitters that contain at least one of the transmitters assigned to the original [first / second] set of base transmitters”</p>

Defendants assert that the updated set of base transmitters must include at least one transmitter from the original set. If all of the transmitters in the first set were reassigned to the second set, Defendants contend, there would be no transmitters left in the first set to form the

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*Wireless* at 9-10)

<sup>25</sup>This term appears in claim 10 of the '403 patent.

basis for an **updated** first set. MTel’s proposed construction, Defendants contend, allows for a “set swap,” in which all of the transmitters from one set become transmitters of the other set – an embodiment not disclosed in the claims or specification. (Tr. at 119-20)

MTel responds that the claims only require the updated set to be distinct from the original set. (D.I. 284 at 6) MTel points to claim 10, which describes “dynamically reassigning **one or more** of the base transmitters in the first set . . . to the second set,” and asserts there is no requirement in the claims that one transmitter from the original set must remain in the updated set. (*Id.* at 7)

The Court agrees with Defendants. The patent teaches a technique of dynamic zone allocation, or “zonal dithering,” in which base transmitters are “dynamically reassign[ed] . . . to new zones,” thereby creating an updated first and second set of base transmitters. ’403 patent at 23:47-48, 24:53-58; *id.* at cl. 10; *id.* at Figs. 25, 26. In each example the patent provides, the only transmitters that are ever reassigned are those “near the boundary” of the adjacent zone or located within an overlap area between two zones; at least one transmitter is always depicted as remaining in the original set. Not only is a complete “set swap” not disclosed or described, but it is also in tension with the claim language being construed, which requires an update – i.e., some modification – of a first set, not a wholesale replacement of such first set.

**5. “substantially” as used in the phrases “substantially not represented” and “substantially the same information”<sup>26</sup>**

<b>MTel</b> Not Indefinite
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<sup>26</sup>This term appears in claims 1, 10, and 19 of the ’210 patent.

<b>Defendants</b> Indefinite
<b>Court</b> Indefinite

Defendants assert that the term of degree “substantially,” used as a modifier in two phrases of the ’210 patent (“substantially not represented” and “substantially the same information”), is indefinite because the patent specification fails to provide any standard or objective boundary for measuring that degree. (D.I. 258 at 19-20) Defendants submit the expert declaration of Dr. Kevin Negus and further argue that MTel confirmed during a 2016 IPR that “substantially” finds no support in the specification. (D.I. 210 Ex. I at 307 (“[MTel’s] Dr. Kesan . . . found that the term ‘substantially’ . . . [is] not found in the specification[, and]. . . [a]s a result, he determines that the specification fails to provide a definition of ‘substantially’ in relation to portions of an information signal or in relation to multi-carrier modulation.”); *see id.* at 309-11 (Dr. Kesan explaining that use of error correction codes is not related to multi-carrier modulation and “a POSA would *not* interpret the term [‘substantially’] to mean deliberately modulating a carrier with redundant information according to an error correction code”))

MTel responds that “substantially” is “commonly used in many patents” and, here, is used in accordance with its plain and ordinary meaning to account for small technical variations and imperfections. (D.I. 284 at 10-11) MTel cites the expert opinion of Dr. Kesan, who explained that “‘errors in information modulation and transmission are common and expected’ and ‘could cause slight differences between the information represented by corresponding carrier signals.’”

(*Id.* at 11)<sup>27</sup> According to MTel, “substantially,” as a term of degree, accounts for these transmission errors.

While the term “substantially” is used with reasonable certainty elsewhere in the ’210 patent – as part of the phrase “substantially simultaneously,” for instance – it is not used with the same success in the terms being construed by the Court. Because “substantially” is a term of degree, “the patent must provide ‘some standard of measuring that degree’ such that the claim language provides ‘enough certainty to one of skill in the art when read in context of the invention.’” *GE Lighting Solutions, LLC v. Lights of Am., Inc.*, 663 Fed. App’x. 938, 940 (Fed. Cir. 2016). Here, however, as Defendants point out (and as MTel has elsewhere conceded), the specification provides no such guidance with respect to delineating the bounds of “substantially the same information” or “substantially not represented.”

Accordingly, the identified “substantially” phrases are indefinite.<sup>28</sup>

**C. In re MTel Preambles<sup>29</sup>**

<b>MTel</b> Not limiting
<b>Defendants</b> Limiting

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<sup>27</sup>At the *Markman* hearing, Defendants asserted that Dr. Kesan “has absolutely no credibility.” (Tr. at 132-33) The Court is not persuaded by this allegation. Hence, Defendants’ credibility attacks have not impacted the Court’s indefiniteness determination.

<sup>28</sup>While “substantially” was found to be not indefinite in *Leap Wireless* (at 28-29), the court there found it important that Defendants had failed to submit any supporting expert opinion. Here, Defendants have provided such an opinion.

<sup>29</sup>The disputed preambles appear in claims 1, 10, and 11 of the ’403 patent; claims 1, 10, and 19 of the ’210 patent; and claims 1, 3, and 5 of the ’891 patent.

<b>Court</b> Limiting
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A preamble may be construed as limiting when, for instance, the claim limitations in the body of the asserted claim “rely upon and derive antecedent basis from the preamble.” *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003). Each of the identified preambles of the asserted patents provide the necessary antecedent basis for limitations in the body of the asserted claims. MTel conceded during IPR proceedings and prior litigation that the preambles of the ’891 patent are limiting (*see e.g.* D.I. 258 Ex. 13 at 14), and that the preambles of the ’403 patent provide antecedent basis for the claim body limitations (D.I. 283 Ex. 3 at 14).<sup>30</sup> MTel fails to provide any persuasive reason why the preambles should not be construed as limiting here.

**D. The ’804 Patent**

**1. Preambles<sup>31</sup>**

<b>MTel</b> Not limiting with exception of specific terms providing antecedent basis for body of claims
<b>Verizon</b> Limiting
<b>Court</b> Limiting

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<sup>30</sup>The identified preambles of the ’891 patent were also found to be limiting in the prior Texas cases. (*See T-Mobile* at 47-48; *Leap Wireless* at 23-25)

<sup>31</sup>The disputed preambles appear in claims 5 and 10 of the ’804 patent.

Verizon contends, in line with prior construction of the '804 patent,<sup>32</sup> that the preambles of claims 5 and 10 are limiting because they provide antecedent bases for multiple terms in the body of the claims. (D.I. 397 at 3) In addition, according to Verizon, the preambles provide essential context for the limitations and terms in the claim bodies. (*Id.* at 5) As Verizon points out, claim 5 consists of 17 lines of preamble followed by 13 lines of claim language. (*Id.*)

MTel agrees that certain terms in the body of claims 5 and 10 derive antecedent basis from the preambles, but contends nonetheless that the entirety of the preamble need not be construed, as in its view “the remainder of the preamble is used only to state the intended use of the invention.” (D.I. 398 at 3) The “novel part” of the claimed method, according to MTel, relates to disabling unnecessary registration signals. (*Id.* at 4) Therefore, because the preamble more generally describes the intended use for this method, i.e., “that this invention is useful in a communication network controlled by a computer that is capable of determining which base transmitter(s) to use for transmissions to a mobile transceiver based on the location of the base receiver(s) that received acknowledgment signals from that mobile transceiver,” the entire preamble is not limiting. (*Id.*)

The Court agrees with Verizon. During the claim construction hearing, the parties agreed that the following terms all find antecedent bases in the preamble: mobile transceiver, communication network, base transmitters, messages, base receivers, and registration signals. (*See Verizon* Tr. at 21) Therefore, it is agreed that each of these terms is limiting. Beyond

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<sup>32</sup>The preambles were previously construed as limiting in *MTel v. Google, Inc.*, Case No. 2:16-cv-2-JRG-RSP (D.I. 397 Ex.1 (“*Google*”)). The court there based its finding on the fact that the preambles provided antecedent bases for multiple terms in the bodies of the claims. However, the *Google* court did not decide the disputed issue before this Court, namely, whether the preambles may be construed as partially limiting. (*See Verizon* Tr. at 25)



providing antecedent bases however, the preambles also provide essential structure of the communication network that is part of the claimed methods, as well as context necessary to give meaning to the remainder of the claims. Even MTel’s stated “novel part” of the invention – use of registration signals – finds both antecedent basis and context from the preamble. *See* ’804 patent at cl. 5 (describing that “the mobile transceiver . . . is capable of sending registration signals to be received by a base receiver in the network” and that “the network us[es] received registration signals to determine a set of base transmitters to be operated to transmit a message to the mobile transceiver”). The preamble, therefore, does more than provide antecedent basis for the registration signals; it describes the network in which the registration signals are sent, how they are sent and received, and what the signals are used to determine.

Finally, the Court agrees with Verizon that the terms for which the preambles provide antecedent basis are inextricably intertwined with the remainder of the preamble, making any separation of limiting and non-limiting portions of the preamble impractical. (D.I. 418 at 3-4)

## 2. “base receiver(s)”<sup>33</sup>

<b>MTel</b> “a receiver that operates in a fixed location”
<b>Verizon</b> “a receiver that operates in a fixed location and that is a separate structural unit from a base transmitter”
<b>Court</b> “a receiver that operates in a fixed location and that is a separate piece of equipment from a base transmitter”

The parties agree that a base receiver operates in a fixed location. Verizon additionally

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<sup>33</sup>This term appears in claims 5-8 and 10 of the ’804 patent.

contends that the base receiver must be a separate structural unit from a base transmitter. (D.I. 397 at 7) According to Verizon, the patent repeatedly refers to the structures “base receiver” and “base transmitter” as separate structures, and “[w]here a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct components’ of the patented invention.” (*Id.*) (quoting *Becton Dickinson and Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010)). When the patentee wanted to claim a structure with both transmitting and receiving capability, Verizon contends, the patentee used the term “transceiver.” (*Id.* at 7-8) For example, the patent repeatedly refers to a “mobile transceiver” as a device that is capable of both receiving and transmitting. Had the patentee meant to allow the base transmitter and base receiver to form part of the same structure, Verizon continues, “the patentee would have simply claimed a base transceiver.” (*Id.* at 8)

MTel contends that the term “structural unit” is not found in the patent and would tend to confuse rather than clarify the scope of the claim. (D.I. 398 at 8) Moreover, MTel asserts that “a transmitter could be ‘co-located’ with a receiver” and the patent does not teach otherwise, thus, any such limitation should not be read into the claims. (*Id.*) While Figure 6 features base receivers and base transmitters separately, MTel contends that this figure is only exemplary and its features should not be imported into the claims. (*Id.* at 9) Finally, MTel asserts that the District Court in *Google* and *T-Mobile* rejected similar arguments by Verizon regarding “a separate structural unit” requirement. (*Id.* at 8-9)

The Court agrees with Verizon. The patent repeatedly references base transmitters and base receivers as separate structures. *See* ’804 patent at Abstract (“The system includes a plurality of base transmitters and base receivers.”); *see id.* at Figs. 6, 8 (describing exemplary

system and differentiating between base transmitters and base receivers); *id.* at 5:45-50 (describing embodiment of invention in which “each zone [is] serviced by at least one base transmitter and at least one base receiver”). The patent even details a preferred ratio for the number of base receivers to base transmitters present in a given system. *Id.* at 9:27-31 (“Due to the difference in output power between base transmitters and mobile units, an overall ratio of 10 base receivers to 1 base transmitter may be appropriate, and the 2 to 1 ratio shown in Fig. 6 is merely shown for ease of illustration.”).

While the patentee clearly defined the mobile unit as having both receiver and transmitter functions, deeming it a “mobile transceiver,” *see id.* at 9:11-13 (“[T]he mobile unit has both receive and transmit capability.”), the patent makes no similar reference to base receivers or base transmitters being capable of “transceiving.” *See, e.g., id.* at 16:19-23 (“[T]he mobile transceiver . . . includes a receiver section for receiving signals from the base transmitters of the system, and a transmitter section for transmitting replies, or other messages, to the base receivers of the system.”).<sup>34</sup>

Accordingly, the Court will adopt Verizon’s construction. However, because the Court

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<sup>34</sup>The Court’s construction departs from those adopted in *Google* and *T-Mobile*. In both of those cases, the court rejected a requirement of **geographic** separation between the base transmitters and base receivers. (*See Google* at 17 (“[T]he disclosure of base receivers that are **geographically** separated from base transmitters is a feature of specific embodiments that should not be imported into the claims.”) (emphasis added); *see also T-Mobile* at 11 (“Defendants’ proposal of requiring **geographic** separation is therefore rejected.”) (emphasis added)). Whether geographic separations is required, in the context of the ’804 patent, is not before this Court. Instead, the Court here is deciding whether base transmitters and base receivers may make up the same **physical structure**. The Court finds ample evidence in the patent that base transmitters and base receivers are separate units and, therefore, declines to adopt the constructions of the prior courts. *See Linear Tech. Corp. v. Monolithic Power Sys., Inc.*, 2007 WL 6126455, at \*2 (D. Del. Nov. 20, 2007).

agrees that confusion could result from the term “structural unit,” the Court will substitute into Verizon’s construction the phrase “pieces of equipment.”

### **III. CONCLUSION**

The Court construes the disputed terms as explained above. An appropriate Order follows.

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

In re: Mobile Telecommunications Technologies, LLC	:	C.A. No. 16-md-2722-LPS-CJB
ARRIS GROUP, INC.,	:	
Plaintiff,	:	C.A. No. 16-259-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	
UBEE INTERACTIVE INC.,	:	
Plaintiff,	:	C.A. No. 16-260-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Plaintiff,	:	C.A. No. 16-692-LPS-CJB
v.	:	
TIME WARNER CABLE, INC., ET AL.,	:	
Defendants.	:	
BRIGHT HOUSE NETWORKS, LLC,	:	
Plaintiff,	:	C.A. No. 16-277-LPS-CJB
v.	:	
MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
Defendant.	:	

MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-694-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
CHARTER COMMUNICATIONS INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-696-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
ARUBA NETWORKS, INC., ET AL.,	:	
	:	
Defendants.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-697-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
BROCADE COMMUNICATIONS SYSTEMS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS TECHNOLOGIES, LLC,	:	
	:	
	:	C.A. No. 16-698-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
JUNIPER NETWORKS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS	:	
TECHNOLOGIES, LLC,	:	
	:	C.A. No. 16-699-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
RUCKUS WIRELESS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS	:	
TECHNOLOGIES, LLC,	:	
	:	C.A. No. 16-700-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
AEROHIVE NETWORKS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS	:	
TECHNOLOGIES, LLC,	:	
	:	C.A. No. 16-701-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
XIRRUS, INC.,	:	
	:	
Defendant.	:	

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MOBILE TELECOMMUNICATIONS	:	
TECHNOLOGIES, LLC,	:	
	:	C.A. No. 17-657-LPS-CJB
Plaintiff,	:	
v.	:	
	:	
CELLCO PARTNERSHIP D/B/A	:	
VERIZON WIRELESS,	:	
	:	
Defendant.	:	

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**ORDER**

At Wilmington, this **19th** day of **September, 2017**:

For the reasons set forth in the Memorandum Opinion issued this date,

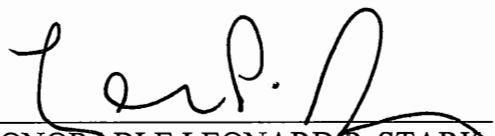
**IT IS HEREBY ORDERED** that the disputed claim terms of U.S. Patent Nos. 5,590,403; 5,915,210; 5,659,891; and 5,581,804 are construed as follows:

<b>Claim Term</b>	<b>Court's Construction</b>
<b>paging carriers / paging system &amp; modulated carriers</b>  [claims 1 and 3 of the '891 patent] / [claim 5 of the '891 patent]	carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use / a system operating within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use / modulated carriers within a radio-frequency channel allocated by the Federal Communications Commission (FCC) for mobile paging use
<b>mask</b>  [claims 1, 3, and 5 of the '891 patent]	emission limitation, imposed by the FCC, both within a channel and in the adjacent spectrum to prevent interference caused by signals straying or spilling into adjacent channels
<b>mask-defined, bandlimited channel</b>  [claims 1, 3, and 5 of the '891 patent]	a channel in a frequency band allocated by the FCC for mobile paging use and to which the mask applies
<b>the band edge of [the / said] mask defining said channel</b>  [claims 1, 3, and 5 of the '891 patent]	Indefinite
<b>adjacent [carriers / subchannels] overlap with each other</b>  [claims 2 and 4 of the '891 patent]	each [carrier / subchannel] overlaps with each [carrier / subchannel] adjacent to it



<b>plurality of mobile receiving units independently receiving one of said plurality of carriers</b>  [claim 5 of the '891 patent]	two or more mobile receiving units capable of independently receiving a particular carrier
<b>set of / set of [base] transmitters</b>  [claims 1 and 10 of the '403 patent]	Construe only as part of the phrase set of [base] transmitters / a set of at least two [base] transmitters
<b>second set of [base] transmitters</b>  [claims 1 and 10 of the '403 patent]	a set of at least two [base] transmitters that are distinct from the [base] transmitters included in the first set of [base] transmitters
<b>plurality of [base] transmitters / a second transmitter</b>  [claims 1 and 10 of the '403 patent] / [claims 1, 7, and 10 of the '210 patent]	at least two [base] transmitters that are at least two separate pieces of equipment / a transmitter that is a separate piece of equipment from the first transmitter
<b>transmit / transmitting / transmitted . . . in simulcast</b>  [claims 1 and 10 of the '403 patent; claims 1, 10, and 19 of the '210 patent]	transmit / transmitting / transmitted the same information at the same time
<b>updated [first / second] set of base transmitters</b>  [claim 10 of the '403 patent]	a set of base transmitters that contain at least one of the transmitters assigned to the original [first / second] set of base transmitters
<b>substantially</b>  [claims 1, 10, and 19 of the '210 patent]	Indefinite

<b>Preambles</b>  [claims 1, 10, and 11 of the '403 patent; claims 1, 10, and 19 of the '210 patent; claims 1, 3, and 5 of the '891 patent]	Limiting
<b>Preambles</b>  [claims 5 and 10 of the '804 patent]	Limiting
<b>base receiver(s)</b>  [claims 5-8 and 10 of the '804 patent]	a receiver that operates in a fixed location and that is a separate piece of equipment from a base transmitter

  
HONORABLE LEONARD P. STARK  
UNITED STATES DISTRICT JUDGE