IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CENTRAK, INC., Plaintiff, v. SONITOR TECHNOLOGIES, INC., Defendant.	Civil Action No. 14-183-RGA

MEMORANDUM OPINION

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ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent No. 8,604,909 ("the '909 patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 61). The Court heard oral argument on November 23, 2015. (D.I. 89).

I. BACKGROUND

The '909 patent relates to Real-Time Location ("RTL") systems for locating and identifying specific portable devices (sometimes referred to as "tags") within an enclosure, such as a hospital. (*See generally* '909 patent, cols. 1–2). The principal utility claimed in the '909 patent in relation to pre-existing RTL systems is the ability to decrease battery power consumption by synchronizing certain base stations and portable devices to a unified time of origin, so that battery-powered portable devices may be in sleep mode when not in a state of transmission or reception. (*See generally id.* col. 3). The '909 patent contemplates achieving such decreased battery power consumption by sending timing synchronization information ("TSI") to the various portable devices and base stations, so as to ensure these components that communicate with one another are only active when necessary. (*See id.* col. 3, ll. 54–66).

The '909 patent has several different independent claims. Claim 1 is generally representative and reads:

> 1. A system for determining a location and an identity of a portable device, the system comprising:
>
> means for transmitting timing synchronization information including a plurality of RF transceivers coupled to a backbone network and a time server generating the timing synchronization information;
>
> wherein each of the plurality of RF transceivers periodically transmits a request to the time server to receive the timing synchronization information;
>
> a plurality of stationary ultrasonic base stations, each ultrasonic base station configured to receive the timing synchronization information and to transmit a

> corresponding ultrasonic location code in a time period based on the received timing synchronization information, each ultrasonic location code representative of a location of the respective ultrasonic base station; and
>
> a plurality of portable devices, each portable device configured to 1) receive the timing synchronization information, 2) detect the ultrasonic location codes from the ultrasonic base stations and 3) transmit an output signal including a portable device ID representative of the portable device and the detected location code,
>
> wherein each portable device is synchronized to detect the ultrasonic location code in the time period based on the received timing synchronization information.

('909 patent, claim 1).

It is also worth noting that the '909 patent claims ultrasonic (US) base stations for transmitting location codes to portable devices, even though the specification largely discusses infrared (IR) base stations performing that function. Plaintiff claims an earlier priority date for the '909 patent based upon U.S. Patent No. 8,139,945, which has the same specification and claims the invention using IR technology. (D.I. 1-1 at 2). Although largely irrelevant to the claim construction issues before the Court, Defendant spends a considerable portion of its introductory briefing arguing that there is no support in the specification for the use of US technology, in an apparent effort to preview its written description and enablement defenses.[1] (D.I. 61 at pp. 1–5). Plaintiff's position is that IR and US base stations are interchangeable. Plaintiff points to a part of the specification which notes that ultrasonic base stations and portable devices are also contemplated. (D.I. 61 at pp. 3–4 & n.3 (citing '909 patent, col. 5, ll. 5–11)). Throughout this opinion, I will reference IR base stations and signals when the cited portions of the specification expressly discuss IR technology, which make up the majority of the citations to

[1] In its briefing of a discovery dispute previously before the Court, Defendant indicated that it "has raised written description and enablement defenses," specifically with regard to the above stated discrepancy regarding the disclosure of IR versus US technology. (D.I. 68 at 1–2).

the specification that are relevant in this claim construction opinion. I mention this merely to make clear that, in doing so, I do not purport to make any suggestion as to the merits of either party's argument concerning the adequacy of the specification's disclosure with regard to US technology.[2]

II. LEGAL STANDARD

"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) (internal quotation marks omitted). "'[T]here is no magic formula or catechism for conducting claim construction.' Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.'" *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the 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." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[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 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321

[2] That is an argument for another day, and I do not expect, when that day comes, that the parties will cite to the language employed by the Court in this *Markman* opinion as indicating support for their side.

(internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *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) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

1. *"detect the ultrasonic location codes"*

a. *Plaintiff's proposed construction*: "To recover the location codes from the ultrasonic signal."

b. *Defendant's proposed construction*: "Receive the ultrasonic location code with an ultrasonic detector."

c. *Court's construction*: "To recover the ultrasonic location codes from the ultrasonic signal."

The crux of the parties' disagreement as to this term is best summarized by Defendant's argument that Plaintiff's proposed construction "conflates the act of receiving the signal with any subsequent processing or recovery operation performed by that signal." (D.I. 61 at p. 14). Defendant argues that "the specification makes clear that receiving the ultrasonic signal must precede any subsequent processing that might be carried out on the output of that receipt, such as recovering the location code from the output." (*Id.*). Defendant also points to a few passages of the specification that it contends "implicitly equate 'detecting the IR location code' with 'receiving an IR signal' with an IR detector 402." (*Id.* at p. 15 (citing '909 patent col. 2, ll. 10–13; *id.* col. 7, ll. 31–33)). Defendant also suggests that a specific passage from the prosecution history of the parent '945 patent shows that the patentee intended "detect" to mean "receive." (*Id.* (citing D.I. 62-9 at 36)).[3]

Plaintiff, on the other hand, contends that the plain and ordinary meaning of "detect," citing dictionary definitions, is to "recover the information from [a] signal." (*Id.* at p. 12). Plaintiff also emphasizes that the '909 patent distinguishes between merely receiving the ultrasonic signal and detecting the base station location code included in that signal, citing claims 7 and 18 as highlighting the distinction. (*Id.*). Plaintiff further asserts that the specification

[3] Defendant also argues that Plaintiff's proposed construction improperly omits the modifier "ultrasonic" before "location code." (D.I. 61 at p. 14). Plaintiff responds by saying this issue is not central to the dispute and suggests that it "would agree to amend its proposed construction" to include the modifier "ultrasonic" before "location code." (*Id.* at p. 18). As this issue is no longer disputed, and because the word "ultrasonic" expressly precedes location code in the claim term, "ultrasonic" will be included as a modifier of "location code" in the construction.

consistently distinguishes between the mere reception of an ultrasonic signal and the detection of the base station location code included in that signal. (*Id.* at p. 13 (citing '909 patent, col. 2, ll. 6–14; *id.* col. 7, ll. 31–32; *id.* col. 1, ll. 34–37; *id.* col. 14, ll. 13–16)). Plaintiff also points to the PTAB decision declining to institute *inter partes* review of the '909 patent, which preliminarily construed the same term to mean "recover the ultrasonic location codes from the ultrasonic signal." (*Id.* (citing D.I. 62-7 at 46–47)).

As Plaintiff correctly points out, the claims of the'909 patent do distinguish between merely receiving an ultrasonic signal and actually detecting the location codes from within those signals. (*Compare* '909 patent, claim 7 (claiming "a plurality of portable devices . . . configured to . . . *detect the ultrasonic location codes from the ultrasonic signals* transmitted by the ultrasonic base stations" (emphasis added)), *with id.* claim 18 ("The system according to claim 1, wherein each of the plurality of portable devices includes an ultrasonic receiver *configured to receive ultrasonic signals* containing the ultrasonic location codes and is configured to *derive the timing synchronization information* from the received ultrasonic signals." (emphases added))).[4] Indeed, even reading the above cited language from either claim 7 or claim 18 in isolation suggests that to detect location codes from a signal means something more than just to receive the signal, as the language of each indicates that the location code is something contained within

[4] Relying upon *ArcelorMittal France v. AK Steel Corp.*, 989 F. Supp. 2d 364, 369–70 (D. Del. 2013), Defendant argues that claim 7 cannot provide guidance as to the meaning of the disputed phrase, because it was added during the prosecution of the'909 patent by way of amendment. (D.I. 61 at pp.16–17 n.13). As Plaintiff correctly points out, however, *ArcelorMittal* involved a claim added during reexamination proceedings before the PTO and the question of whether the Federal Circuit's previous claim construction should still apply to newly broadened claims issued by the PTO after the Federal Circuit's claim construction. *See ArcelorMittal*, 989 F. Supp. 2d at 366–67, 369–70. Here, all of the claims are part of the same original prosecution and, accordingly, do not establish the sort of "convoluted history" involving simultaneous judicial and administrative proceedings that were at issue in *Arcelor Mittal*. *See id.* at 366. Accordingly, I reject Defendant's argument that I should not consider claim 7 in assessing claim construction, because *ArcelorMittal* is not even remotely on point. In any event, even if I were to accept Defendant's argument, numerous other claims of the '909 patent use the word "detect" instead of "receive," as used in claim 18, rendering the argument that the patentee meant something different when using different verbs still applicable. (*See, e.g.*, '909 patent, claims 1, 3, 4).

the signal. Accordingly, "[i]n the absence of any evidence to the contrary, [the court] must presume that the use of these different terms in the claims connotes different meanings." *CAE Screenplates Inc. v. Heinrich Fiedler GMBH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000).

In the context of the patent as a whole, the portions of the specification and the prosecution history that Defendant cites do not support its argument that the patent implicitly equates detecting with receiving. The principal utility of the '909 patent in relation to pre-existing RTL systems is enabling decreased battery power consumption "[b]y synchronizing the IR base stations and the portable devices to a unified time of origin, [so that] the portable device may be in a sleep mode when it is not in a state of transmission or reception." ('909 patent, col. 3, ll. 63–66). When the portable devices are in sleep mode, they cannot receive or detect transmissions from the base stations. (*See id.*). When the specification states that after the portable device receives the TSI, it "may be controlled to begin receiving an IR signal," it explains that the portable devices leave sleep mode based on the TSI and can thereafter actively receive IR (or US) transmissions. (*Id.* at col. 7, ll. 31–33). The fact that, once activated based on the TSI, they can also "detect the IR location code" (*Id.* at col. 2, ll. 10–13) from these transmissions does not equate the receiving with the detecting.

I also find Defendant's reliance on a stray statement in the prosecution history of the parent '945 patent to be unpersuasive. Defendant points to a sentence where the applicant argues "neither Crimmins nor Kaplan disclose or suggest . . . that at least one portable device transitions to a wake-up mode and receive[s] the transmitted location ID during the same time period as required by claims 1, 16, and 22." (D.I. 62-9 at 36). Several of the contested claims at issue in this section of the prosecution history, however, explicitly differentiated between receiving and detecting. (D.I. 62-9 at 34 (claiming in claim 1 the portable devices as requiring "an infrared

(IR) detector configured to *detect* IR locations codes *received* from at least one of a plurality of IR base stations" (emphases added)); *id.* at 35 (claiming in claim 16 the portable devices as "*detecting* at least one IR location code *received* from at least one infrared (IR) base station" (emphases added))). Accordingly, Defendant's proposed construction, construing "detecting the location code" to mean receiving would be inconsistent with the way the words are used in the claims of the parent '945 patent.

I also think it is readily apparent, even to a layperson, that the plain and ordinary meaning of "detect" is different than that of "receive." *See Definition of Detect*, MERRIAM-WEBSTER, http://www.merriam-webster.com/dictionary/detect (last visited Dec. 4, 2015) (defining "detect" as "to discover the true character of" or to "demodulate"); *Detection*, ALLIANCE FOR TELCOMM. INDUS. SOLUTIONS TELECOM GLOSSARY, https://www.atis.org/glossary/definition.aspx?id=7128 (last visited Dec. 4, 2015) (defining "detection" as "[t]he recovery of information from an electrical or electromagnetic signal"). To receive has been defined as "to come into possession of" or "to permit to enter." *See Definition of Receive*, MERRIAM-WEBSTER, http://www.merriam-webster.com/dictionary/receive (last visited Dec. 4, 2015).[5] The claim language, specification, and prosecution history of the '909 patent, as discussed above, accurately reflect the distinct meanings of these two different words. Likewise, Defendant fails to point to any convincing evidence in the specification or prosecution history to suggest the patentee meant these two distinct words to mean the same thing, or for either term to depart from its plain and ordinary meaning.

Lastly, while not controlling, I find the PTAB's construction of this term in its decision not to institute *inter partes* review of '909 patent to be well-reasoned and persuasive. (D.I. 62-7

[5] I do not believe the ordinary understanding of these words has changed since 2007.

at 46–47). While the PTAB assigns claim terms their "broadest reasonable construction in light of the specification," 37 C.F.R § 42.100(b), it is difficult to conceive of how Plaintiff's proposed construction is any broader than Defendant's; the two constructions are merely different.

I therefore construe "detect the ultrasonic location codes" to mean "to recover the ultrasonic location codes from the ultrasonic signal."

2. *"means for transmitting timing synchronization information"*

a. *Plaintiff's proposed construction*: The term is subject to § 112, ¶ 6. Claimed Function: "transmitting timing synchronization information." Corresponding Structure: "one or more RF base stations coupled through a backbone network to a time server, which time server generates timing synchronization information."

b. *Defendant's proposed construction*: The term is subject to § 112, ¶ 6. Claimed Function: "transmitting timing synchronization information." Corresponding Structure: "one or more RF base stations 100/510 as shown in Figures 1, 2 and 5, arranged to transmit RF beacons at periodic intervals as shown in Figure 6A, the beacons including the timing synchronization information."

c. *Court's construction*: The term is subject to § 112, ¶ 6. Claimed Function: "transmitting timing synchronization information." Corresponding Structure: "one or more RF base stations arranged to transmit RF beacons, and connected by a backbone network when there are multiple RF base stations."

"[I]f one employs means-plus-function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language." *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005) (internal quotation marks omitted) (alteration in original). "The specification must be read as a whole to

determine the structure capable of performing the claimed function." *Id.* (internal quotation marks omitted). "A structure disclosed in the specification qualifies as 'corresponding' structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id.* "This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6." *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). "While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function." *Default Proof*, 412 F.3d at 1298.

Both parties agree that the term "means for transmitting timing synchronization information" is stated in means-plus-function format under § 112, ¶ 6 and that the claimed function is "transmitting timing synchronization information." (D.I. 61 at p. 30). Accordingly, only the corresponding structure for the claimed function is disputed. (*Id.*). At the outset, it is important to note that the specification discloses the transmission of TSI as occurring within two different communication links: 1) the communication link between the RF base stations and both the IR base stations and portable devices, and 2) the communication link between multiple RF base stations where there are more than one of such stations.[6] With regard to both

[6] It is clear from a full reading of the '909 patent that the RF base stations not only transmit TSI to the IR base stations and portable devices, but they also transmit TSI among other RF base stations within the system, at least in embodiments containing multiple RF base stations. (*See generally* '909 patent, cols. 11–12; *see also id.* col. 4, ll. 5–7 ("Each RF base station may periodically transmit a beacon to associated IR base stations, other RF base stations and any associated portable devices.")). There is nothing in the specification to suggest that the patentee meant the claimed function of "transmitting timing synchronization information" to be limited only to when the TSI is sent to IR base stations and portable devices, as the patent clearly contemplates transmitting the TSI between multiple RF base stations as well. At oral argument, Defendant suggested that—because columns 11 and 12 discuss ways for the RF base stations to be synchronized and use words other than TSI—the patentee's different word choice shows an intent to discuss something different than TSI in these columns. (D.I. 59 at 17–18). However, it is difficult to conceive how a POSITA, reading the patent as a whole, would understand these various phrases—"synchronization information," "timing information," and "synchronization timing signals"—as meaning anything other than the "timing synchronization information" discussed throughout the patent. Accordingly, it is appropriate to consider how the RF base stations transmit TSI amongst one another in determining the structure corresponding to the function of transmitting TSI. In its briefing, Defendant implicitly seems to concede as much by citing this portion of the specification in arguing for its proposed periodicity limitation. (D.I. 61 at p. 32 (citing '909 patent col. 11, ll. 17–19)).

communication links, the parties agree that the structure linked to the "transmitting" function is "one or more RF base stations." Each party disagrees, however, on other additions to the corresponding structure that it perceives the specification as requiring. (D.I. 61 at p. 30).

With regard to the first communication link, the only structure that the specification discloses for a RF base station to transmit TSI to the IR base stations and portable devices is a RF beacon. (*See, e.g.*, '909 patent, col. 5, ll. 27–30; *id.* col. 5, ll. 51–53; *id.* col. 7, ll. 11–13). Because this communication link is a critical aspect of every embodiment of the invention disclosed in the '909 patent, the ability to transmit RF beacons is a vital aspect of the corresponding structure and is undoubtedly linked to the function of transmitting TSI. Plaintiff does not seem to even contest that RF beacons are linked to performing the recited function.

With regard to the second communication link—that between multiple RF base stations—the specification does indicate that the RF base stations are connected through a backbone network and that use of the backbone network is one way that the RF base stations transmit TSI amongst themselves. The specification clearly states that "RF base stations 510 are typically connected among each other and to server 506 via an Ethernet backbone network." ('909 patent, col. 11, ll. 11–12). Furthermore, the specification states that, under the third exemplary method of synchronizing the RF base stations, "the timing signal is transmitted on the backbone network." (*Id.* col. 11, ll. 13–14; *see also id.* col. 12, ll. 6–8). Because the specification explicitly provides for a manner of transmitting TSI using the backbone network, it would be improper to construe the corresponding structure in such a way as to exclude this disclosed structure. *See Default Proof*, 412 F.3d at 1298 ("[C]orresponding structure . . . must include all structure that actually performs the recited function.").

With regard to additional disputed parts of the corresponding structure, Defendant argues that the specification only describes RF beacons being sent at periodic intervals. (D.I. 61 at p. 33). However, the inclusion of "at periodic intervals" would improperly limit the corresponding structure because the specification discloses structure that transmits RF beacons in ways other than at periodic intervals. Columns 11 and 12 of the '909 patent specification describe three exemplary methods for synchronizing the RF base stations, only the first of which states that "beacons from RF base stations are periodically transmitted." ('909 patent, col. 11, ll. 7–8). The second exemplary method, however, describes an alternative method of transmitting TSI where "RF base stations 510 actively request the timing information instead of passively listening to periodic beacons." (*Id.* col. 11, ll. 45–47). This second exemplary method, unlike the first, does not rely upon a master RF base station periodically sending beacons. Instead, it functions as a "request and reply" type of system. Thus, the corresponding structure in the specification is not limited such that the RF base stations must be arranged to send these beacons at periodic intervals.

Plaintiff argues for the inclusion of a "time server" in the corresponding structure, contending that the express reference to a time server in claim 1 and the discussion of a time server in columns 11 and 12 of the specification indicate that a time server is part of the necessary structure for performing the claimed function. (D.I. 61 at pp. 36–37). Defendant contests this inclusion, suggesting that a time server is not linked to the recited function of "transmitting timing synchronization information." (*Id.* at pp. 34–35). Even accepting for purposes of argument Plaintiff's position that the specification discloses that the time server generates the TSI,[7] Plaintiff has failed to adequately link the time server to the recited function of

[7] The only mention of a time server "generating" TSI is in claim 1. ('909 patent, claim 1 ("means for transmitting [TSI] including . . . a time server generating the [TSI]")). Moreover, the phrase "time server" is only used once in the

transmitting TSI. *See Default Proof*, 412 F.3d at 1298. In other words, generating TSI in the first place is not the same function as transmitting TSI to other components of the system, and Plaintiff has not in any way shown how the specification links a time server with the recited "transmitting" function. In fact, in every other portion of the specification describing the transmission of TSI, it is described without reference to what generated the TSI in the first place, only mentioning that the RF base stations transmit the TSI via RF beacons or on the backbone network. (*See, e.g.*, '909 patent, col. 4, ll. 19–30, *id.* col. 11, ll. 15–19; *id.* col. 11, ll. 41–45). Accordingly, I decline to include a time server in the corresponding structure because the specification does not clearly link a time server to the claimed function of "transmitting [TSI]."

Lastly, I do not think the references to specific block diagrams in the patent—that Defendant wants to include in the construction—are helpful, and would only serve to inject ambiguity and confusion into this Court's construction. More importantly, I do not think the corresponding structure disclosed by the specification is limited to RF base stations configured exactly as they are in the cited figures. As a brief example, the specification does not limit the number of RF base stations in a system, whereas Figure 5 depicts a system containing only four RF base stations. ('909 patent, col. 8, l. 46 (indicating there "may be . . . multiple RF base stations . . . ."); '909 patent, fig. 5 (depicting a system with four RF base stations)). Therefore, I will not include these references to specific figures in the construction.

Accordingly, I construe the term "means for transmitting timing synchronization information" as follows: "The term is subject to § 112, ¶ 6. Claimed Function: transmitting timing synchronization information. Corresponding Structure: one or more RF base stations

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entire specification, when discussing the third exemplary method of synchronizing RF base stations. (*Id.* col. 12, ll. 8–10 ("RF base stations 510 may periodically request a synchronization time stamp from server 506 (or from a dedicated time server.")).

arranged to transmit RF beacons, and connected by a backbone network when there are multiple RF base stations."

3. *"means for receiving the output signal from each of the portable devices"*

a. *Plaintiff's proposed construction*: The term is subject to § 112, ¶ 6. Claimed Function: "receiving output signals from portable devices." Corresponding Structure: "base station transceiver or receiver for receiving signals from portable ultrasonic devices."

b. *Defendants' proposed construction*: The term is subject to § 112, ¶ 6. Claimed Function: "receiving output signals from portable devices." Corresponding Structure: "one or more RF base stations 100/510 as shown in Figures 1, 2 and 5, arranged to transmit RF beacons at periodic intervals as shown in Figure 6A, the beacons including the timing synchronization information, and further arranged to receive RF signals 808 that include a device ID and BS-ID from portable devices 108."

c. *Court's construction*: The term is subject to § 112, ¶ 6. Claimed Function: "receiving output signals from portable devices." Corresponding Structure: "one or more RF transceivers arranged to receive RF transmissions."

Both parties agree that the term "means for receiving the output signal from each of the portable devices" is stated in means-plus-function format under § 112, ¶ 6 and that the claimed function is "receiving output signals from portable devices." (D.I. 61 at p. 42). Accordingly, only the corresponding structure for the recited function is disputed. (*Id.*).

I think the structure that the specification clearly links to the recited "receiving" function is an RF transceiver. The specification states that "RF transceiver 206 may be configured to receive RF transmissions, for example, from portable device 108 (FIG. 1) . . . ." ('909 patent, col. 5, ll. 25–26). The specification, and figure 2, clearly disclose that RF Transceiver 206 is a

component part of RF base station 110. (*Id.* col. 5, ll. 12–15; *id.* Fig. 2). The fact that the portable devices transmit their output signals "at an RF carrier frequency to RF base station" does not change the fact that the RF transceiver is the specific structure within the RF base station that is performing the receiving function. (*Id.* col. 4, ll. 63–65; *id.* col. 7, ll. 19–23). Defendant does not actually contest that the RF transceiver does the receiving function. Instead, it argues that "it is unclear how an RF transceiver or receiver can operate to receive signals without a power source," emphasizing its view that the RF base station must include all the features disclosed in the specification and exemplified by Figure 2 to receive the output signals. (D.I. 61 at p. 44). I am unconvinced by Defendant's argument that the need for a power source requires the corresponding structure to be construed as the entire RF base station, rather than the component of the RF base station that actually performs the function. *See Default Proof*, 412 F.3d at 1298 ("[C]orresponding structure need not include all things necessary to enable the claimed invention to work, [but only] all structure that actually performs the recited function.").

Defendant argues that the Court should include the fact that the received signals "include a device ID and BS-ID," by suggesting that the specification does not disclose any structure where the RF output signal that is received by the RF transceivers does not include the device ID and BS-ID. (D.I. 61 at p. 44). I find, however, that the substantive content of the output signal is irrelevant to construing the corresponding structure for the claimed function of "receiving output signals from portable devices." Were I construing the term "output signal," perhaps Defendant would have a credible argument that the specification so limits the term that it must include "a device ID and BS-ID from portable devices 108."[8] However, nothing in the specification indicates that the structure corresponding to the claimed function of "receiving output signals"

[8] I do not mean to make any representation as to how I would potentially construe the term "output signal" if it were contested.

requires that these output signals contain specific substantive content. Accordingly, I decline to unnecessarily limit the corresponding structure for the claimed function.

Plaintiff contends that Defendant's inclusion of the modifier "RF" is contrary to the '909 patent's explicit disclosure that the output signals from portable devices may be transmitted from the tags to the receiving means "by radio frequency (RF) transmission or IR Transmission." (*Id.* at p. 47 (citing '909 patent, col. 2, ll. 58–62)). Nothing in the specification, nor in the block diagram of an RF base station shown in Figure 2, however, describes an RF transceiver as being capable of receiving infrared or ultrasonic signals, as Plaintiff contends. The specification does not describe any structure that allows the portable devices and RF transceivers to communicate through any method other than RF transmissions. The single citation in the specification that Plaintiff provides to argue that this specific communication link may be performed using IR (or US) transmissions is in a paragraph generally discussing how RTL systems functioned in the prior art. ('909 patent, col. 2, ll. 56–62). Accordingly, because RF transceivers perform the claimed function and are the only disclosed structure capable of handling RF transmissions, the inclusion of RF as a descriptor of transceiver is not only clearly linked to the claimed function, but required for the claimed function.

Defendant also argues that Plaintiff's proposed construction improperly reads in the limitation that the portable devices are "ultrasonic." (D.I. 61 at pp. 45–46). Plaintiff characterizes this argument as being "of no moment" and indicated that it would be "pleased to call the tags portable devices without the ultrasonic descriptor if [Defendant] wishes." (*Id.* at p. 48 n.24). Because Plaintiff has dropped its argument for including this language, I will not include it in the construction of this term.

The remainder of Defendant's proposed construction essentially repeats its earlier claim construction argument with regard to the term "means for transmitting timing synchronization information." However, it fails to adequately link this structure to the "receiving" function at issue with this term. Additionally, as with my construction of the corresponding structure of the previous term, I think the inclusion of specific references to figures in the patent would be inappropriate, because the specification discloses structure that performs the recited function in broader terms than the exact embodiments shown in the figures.

Therefore, I construe the term "means for receiving the output signal from each of the portable devices" as follows: "The term is subject to § 112, ¶ 6. Claimed Function: receiving output signals from portable devices. Corresponding Structure: one or more RF transceivers arranged to receive RF transmissions."

4. *"Timing/Time Synchronization Information ("TSI")*

a. *Plaintiff's proposed construction*: "information used to synchronize transmission and reception by two or more devices with each other"

b. *Defendants' proposed construction*: "information included in an RF beacon which allows recipients to identify a common point in time for synchronization purposes, the information including the actual time at which the RF beacon is received and any offset to the common point in time."

c. *Court's construction*: "information which allows recipients to identify a common point in time for synchronization purposes."

Plaintiff argues that in the specification, "the TSI is consistently and repeatedly referred to as being the information used to synchronize transmission and reception between devices." (D.I. 61 at p. 50). It further argues that RF beacons need not be included in the construction of

TSI. (*Id.*). Plaintiff also points out that claims 3 and 26 separately describe TSI and time delay information as different things: "the beacons including the timing synchronization information and respective time delay information relative to a unified time of origin." (*Id.*). Likewise, Plaintiff contends, the time delay information "is clearly claimed as something in addition to, and not already part of, the TSI itself." (*Id.* at p. 51). Plaintiff's overarching contention is that Defendant essentially reads in unnecessary limitations based upon a few optional features described in one of several different embodiments disclosed in the specification. (*Id.* at pp. 50, 56). Plaintiff also argues that "[i]ncluding in the TSI a requirement for the time of receipt and any offset would [] exclude disclosed embodiments in which the TSI does not include such information." (*Id.* at p. 57).

Defendant argues that Plaintiff's construction only describes TSI in a purely functional manner, rather than giving meaning to what the TSI actually is, which leaves it so ambiguous as to be indefinite. (*Id.* at p. 52). It also argues that the only TSI described in the specification "is that transmitted by the RF beacons." (*Id.* at p. 53). Defendant next contends that the limitation it adds regarding the "actual time at which the RF beacon is received" is necessary because "the instant at which the beacon is (simultaneously) transmitted and received itself forms part of the information content of the beacon." (*Id.* at p. 54 (footnote omitted), *see also id.* at p. 58). Defendant also asserts that, because all discussions of transmitting TSI refer to it as being transmitted in a beacon, TSI must necessarily be defined as being included in a beacon. (*Id.* at pp. 53, 58).

First, it is clear that the parties do not disagree as to what the TSI actually does, although they use slightly different language to describe its function. I think Defendant's proposed language, while essentially saying the same thing as Plaintiff's, is clearer. In fact, Plaintiff has

made clear that it does not actually contest Defendant's initial characterization of TSI, rather it is the "additional, unrelated limitations such as time of receipt and a common offset" that it truly disputes. (D.I. 61 at p.56 ("Sonitor argues that '[T]he timing synchronization information must contain information about the unified time of origin that is transmitted to the IR base stations and portable devices to act as a reference point—i.e., a common point in time.' CenTrak fully agrees." (citation omitted))). Therefore, I will adopt the initial language proposed by Defendant as part of my construction: "information . . . which allows recipients to identify a common point in time for synchronization purposes." This construction finds ample support in the specification. (*See, e.g.*, '909 patent, col. 8, ll. 59–63 ("A synchronization signal may be used to maintain all of the nodes close enough to a common time of origin to allow [the] system to operate efficiently. As described above, an increase in power consumption may occur if synchronization is not used.")).

Second, where the true disagreement lies is in Defendant's effort to import additional limitations into the claim term based upon the specification. Defendant's efforts to include the language, "the information including . . . any offset to the common point in time," is not supported by the specification. I agree with Plaintiff that the language of claims 3 and 26, "[TSI] and respective time delay information relative to a unified time of origin," makes clear that the TSI and time delay information are not the same thing. In addition, the absence of language referencing a time delay or offset in other claims indicates that a time delay or offset is something claimed in addition to the TSI, which appears in every one of the twelve independent claims. Moreover, Defendant's effort to include the "offset" language essentially relies on one embodiment in the specification, and tries to read it into the claim term, even though other embodiments are described where there is no reference to an offset of a common point in time.

(D.I. 61 at pp. 53–54 (citing '909, patent col. 9, ll. 46–56)). Specifically, column 9 explains that, "According to one embodiment of the present invention," a master base station communicates with other RF base stations before transmitting the TSI to the IR base stations and portable devices, thereby requiring the subsequent RF base stations to include "an offset to the time of origin" of the original transmission from the master base station. ('909 patent, col. 9, ll. 12–56). However, other parts of the specification describe TSI being transmitted directly from an initial RF base station to the IR base stations and portable devices. (*Id.* col. 4, ll. 19–30). Defendant actually admits as much in another portion of its briefing. (D.I. 61 at p. 58 ("For example, where the TSI is transmitted from an RF base station directly to the IR base stations without going through any intermediaries . . . .")). Thus, although there are claims and separate embodiments in the specification that refer to offsets and common points in time, that only further supports my view that such references are not part of the TSI itself, but are something different.

Third, Defendant's effort to add "the information including the actual time at which the RF beacon is received" is wholly unconvincing for many of the same reasons discussed above with regard to the "offset" limitation. The fact that "the IR base stations will know when they receive each RF beacon" does not mean that the TSI, already generated and transmitted, inherently includes the time of receipt. (D.I. 61 at p. 59). If anything, the time at which an RF beacon is received would be additional information above and beyond the TSI transmitted by the RF base station.

Fourth, the fact that TSI is transmitted via an RF beacon is not relevant to what TSI actually is in the first place. Whether TSI is transmitted via RF beacon or any other method does

not alter the very nature of what TSI itself is, and the specification does not demonstrate a clear intent to limit the definition of TSI to require it to always be included in an RF beacon.[9]

"To avoid importing limitations from the specification into the claims, it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." *Philips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc). Although "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification," I do not think Defendant is even close to that line with its arguments as to this term. *Id.* (citation and internal quotation marks omitted). The majority of its construction reads additional limitations into the claim term from the specification, without showing any disclaimer or lexicography by the patentee that would justify doing so. In the context of the patent as a whole, a POSITA would see that Plaintiff's construction clearly reflects the patent's emphasis on conserving battery power. It does so by specifying that TSI is used to ensure that the portable devices are only operational and communicating at set times, so they do not waste energy when no communications are taking place. Defendant's argument that TSI must include some more complex substantive content is therefore inconsistent with the simple role of TSI described throughout the '909 patent.

Accordingly, I construe the term "timing synchronization information" to mean "information which allows recipients to identify a common point in time for synchronization purposes."

[9] Lastly, Defendant's half-hearted attempt to suggest in passing that Plaintiff's construction would render the claim term indefinite (D.I. 61 at p. 52), without any reference to legal authority, is wholly unconvincing and merits no further discussion.

5. *"time server"*

a. *Plaintiff's proposed construction*: "a server that keeps track of network time."

b. *Defendant's proposed construction*: "a device that issues time stamps in response to a request from a client."

c. *Court's construction*: "a computer (server) that keeps track of the current date and time and distributes that time to computers connected to it via a computer network."

Plaintiff argues that Defendant, in its efforts to narrow the term "time server," does not show a clear disclaimer in the specification of the ordinary meaning of the term. (D.I. 61 at pp. 59–60). Instead, Plaintiff argues, Defendant merely seeks to import limitations into the claim based on one exemplary method in the specification. (*Id.*). Defendant counters by arguing that its construction is consistent with the sole instance that the phrase "time server" is used in the specification. (*Id.* at p. 60). Plaintiff responds by pointing to numerous technical definitions, all of which do not contain any of the limitations Defendant attempts to read in from the specification. (*Id.* at p. 61 (citing D.I. 62-13 at 8–10; D.I. 62-14 at 1–6); D.I. 88 at 1–2 (citing D.I. 88-1 at 2–12)). Defendant then responds by contending that Plaintiff is proposing a dictionary-first approach and improperly ignoring the context of the patent. (D.I. 61 at p. 65).

The language Defendant relies on states: "According to the third exemplary method . . . . RF base stations 510 may periodically request a synchronization time stamp from server 506 (or from a dedicated time server)." ('909 patent, col. 12, ll. 6–10). This mention of a time server within an "exemplary method" of synchronizing RF base stations, does not in any way evince an intent to limit the term "time server" to a device which operates under a request and reply type of functioning. *See Libel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even 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." (internal quotation marks omitted)). Moreover, claims 1 and 11 expressly add language to a claim limitation involving the term "time server" indicating that the time server provides TSI in response to a request from an RF transceiver. ('909 patent, col. 14, ll. 31–33; *id.* col. 16, ll. 48–50). This additional language would be entirely superfluous if the patentee already intended the term "time server" to require it to "issue time stamps in response to a request from a client." *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1257 (Fed. Cir. 2010) ("Claims must be interpreted with an eye toward giving effect to all terms in the claim." (internal quotation marks omitted)).

While I agree that Defendant has not demonstrated any intent on the part of the patentee to depart from the plain and ordinary meaning of "time server," I do not think that Plaintiff's proposed construction provides a sufficiently helpful description of what a time server does. Plaintiff has cited numerous technical references that more or less show that "time sever" has a consistent meaning in the art. I think the most helpful definition is provided by one of Plaintiff's 2011 technical references, which defines a time server as "a computer (server) that keeps track of the current date and time and distributes that time to computers connected to it via a computer network." (D.I. 88-1 at 6). This definition provides the most clarity, reflects the plain and ordinary meaning of the term, and appears consistent with the role that the time server plays in the '909 patent as a whole.

Accordingly, I construe the term "time server" to mean "a computer (server) that keeps track of the current date and time and distributes that time to computers connected to it via a computer network."

6. *"beacon"*

a. *Plaintiff's proposed construction*: "a transmission of a signal for reception by one or more recipients."

b. *Defendants' proposed construction*: "transmitted RF signals suitable for reception by multiple recipients."

c. *Court's construction*: "a signal transmission capable of being received by multiple recipients."

The parties' constructions of "beacon" are very similar and differ only in their interpretations of the potential ramifications of each construction. First, although the parties' briefing contested whether "RF" should be included in the Court's claim construction, Defendant indicated its willingness to drop this contention at oral argument. (D.I. 89 at 79). The crux of the parties' remaining dispute as to the term "beacon" therefore centers on Plaintiff's concerns that, if a beacon is not actually received by multiple recipients—such as if some transceivers are turned off—then it will no longer be considered a beacon under Defendant's construction. (D.I. 61 at p. 71). Plaintiff contends that there is nothing in the specification to indicate that the signal actually needs to be received by multiple recipients in order to be a beacon. (*Id.* at p. 66). Defendant responds to these arguments by arguing that Plaintiff's fears are unfounded, because "whether a beacon is actually received by one or more recipients is wholly irrelevant to the construction of this term." (*Id.* at p. 73). Defendant argues that the specification states that the beacon "may be received by both the IR base stations and the portable devices," i.e., multiple recipients. (*Id.* at p. 67 (citing '909 patent, col. 3, ll. 50–53)). It also cites several other similar examples contemplating multiple recipients. (*Id.* at pp. 67–68). Defendant, citing dictionary definitions, also asserts that Plaintiff's construction is inconsistent with the plain and ordinary

meaning of beacon as a signal that is broadcast indiscriminately and can be picked up by anyone listening on an appropriate frequency. (*Id.* at 68).

I think that Plaintiff's fear—that if a beacon is not actually received by multiple recipients, it is no longer a beacon—is unfounded. If a beacon is broadcast such that it can be received by anyone listening on an appropriate frequency, it would still be a beacon even if all of the listeners are tuned into other frequencies. Likewise, a unicast signal, sent only to one recipient and incapable of being picked up by other recipients (were they to exist), would not be a beacon. To the extent the accused products do not fall neatly within those two generalizations, it will merely create factual disputes for a jury to decide. Moreover, given Defendant's position that "whether a beacon is actually received by one or more recipients is wholly irrelevant to the construction of this term," I fully expect that I will not see it argue down the line that something is not a beacon merely because it was not actually received by multiple recipients. (D.I. 61 at p. 73). I will, however, for the sake of clarity, use the word "capable" rather than "suitable," to further reflect the fact that the signal need not actually be received in order to still be a beacon.

Accordingly, I construe the term beacon to mean "a signal transmission capable of being received by multiple recipients."

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.