

United States District Court  
District of Massachusetts

Sunrise Technologies, Inc.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No.
	)	15-11545-NMG
Cimcon Lighting, Inc.,	)	
	)	
Defendant.	)	
	)	

MEMORANDUM & ORDER

GORTON, J.

Plaintiff Sunrise Technologies, Inc. ("plaintiff") alleges defendant Cimcon Lighting, Inc. ("defendant") is liable for direct, contributory, induced and willful infringement of one of its patents for a system of communication combining devices that monitor local parameters with a mesh network of wirelessly linked communication nodes mounted on top of utility poles.

The Court held a Markman hearing on November 20, 2017, during which the parties presented tutorials on the subject technology and disputed the meaning of five groups of terms that comprise nine claim terms in one claim of the patent-in-suit.

**I. Factual and Procedural Background**

Plaintiff is the assignee of United States Patent No. 7,825,793 ("793 patent"). The '793 patent was filed in May, 2007, and issued in November, 2010.

The '793 patent, entitled "Remote Monitoring and Control System," is an invention that allows for the remote monitoring and control of household or building parameters such as home security settings, fire alarm systems and other utilities. The patent is directed toward a communication system that relays information between an end user device and a remote end user via a node mounted on a utility pole, such as a telephone pole.

In April, 2015, plaintiff filed this action for patent infringement against defendant. After this Court allowed several extensions of time to file a responsive pleading, defendant moved to dismiss the complaint in March, 2016. Plaintiff subsequently filed an amended complaint alleging patent infringement under theories of direct, contributory, induced and willful infringement, which defendant again moved to dismiss.

In November, 2016, this Court held that plaintiff stated claims for direct infringement, willful infringement and induced infringement but allowed defendant's motion to dismiss with respect to contributory infringement.

## **II. Analysis**

### **A. Principals of Claim Construction**

In analyzing a patent infringement action, a court must 1) determine the meaning and scope of the patent claims asserted to be infringed and 2) compare the properly construed claims to

the infringing device. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). The first step, known as claim construction, is an issue of law for the court to decide. Id. at 979. The second step is determined by the finder of fact. Id.

The Court's responsibility in construing claims is to determine the meaning of claim terms as they would be understood by persons of ordinary skill in the relevant art. Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). The meanings of the terms are initially discerned from three sources of intrinsic evidence: 1) the claims themselves, 2) the patent specification and 3) the prosecution history of the patent. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

The claims themselves define the scope of the patented invention. See Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). Claim terms are generally given their "ordinary and customary meaning," which is the meaning that a person skilled in the art would attribute to the claim term. See id. at 1312-13. Even if a particular term has an ordinary and customary meaning, however, a court may need to examine the patent as a whole to determine if that meaning controls. Id. at 1313 ("[A] person of ordinary skill in the art is deemed to read the claim term . . . in the context of the entire

patent . . . ."); see also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) (noting that a court cannot construe the ordinary meaning of a term "in a vacuum").

Ultimately, the correct construction will be one that

stays true to the claim language and most naturally aligns with the patent's description of the invention.

Phillips, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

The patent specification is "the single best guide to the meaning of a disputed term" because it

may reveal a special definition given to a claim term . . . that differs from the meaning it would otherwise possess . . . [such as] an intentional disclaimer, or disavowal, of claim scope by the inventor.

Id. at 1316, 1321.

The Court should also consult the prosecution history to see how the inventor and PTO understood the patent and to ensure the patentee does not argue in favor of an interpretation it has disclaimed. Id. at 1317.

In the rare event that analysis of the intrinsic evidence does not resolve an ambiguity in a disputed claim term, the Court may turn to extrinsic evidence, such as inventor and expert testimony, treatises and technical writings. Id. at 1317. Although extrinsic evidence may be helpful in construing claims, the intrinsic evidence is afforded the greatest weight in determining what a person of ordinary skill would have

understood a claim to mean. V-Formation, Inc. v. Benetton Grp. SpA, 401 F.3d 1307, 1310-11 (Fed. Cir. 2005).

**B. Patent No. 7,825,793**

**1. The Technology**

The '793 patent, entitled "Remote Monitoring and Control System," is an invention that allows for the remote monitoring and control of household and building parameters such as home security settings, fire alarm systems, air conditioning and water heating. The patent is directed toward a communication system that relays information between an end user device and a remote end user via a node mounted on a utility pole, such as a telephone pole.

The invention of the patent is a combination and interconnection of two existing technologies. The first existing technology is the end user device, installed in a target zone, that measures and controls a local parameter such as temperature, motion, or electricity usage. The second existing technology is a communication network formed of communication nodes mounted on utility poles. This network is a "mesh network", which means that one node communicates with an adjacent node. A mesh network can be contrasted with a "conventional network" where all nodes communicate with a central hub that manages network traffic.

The '793 patent is novel in that it allows the communication nodes to receive and transmit ZigBee signals to the end user devices. ZigBee is a low-cost, low-power, low data rate protocol used to create a network via radio. In prior art, an end user device would measure a parameter, such as electricity usage in a home. An employee of an electrical company could drive to the residence, and, from a vehicle, receive a reading of electricity usage via the ZigBee protocol. The '793 patent eliminates the need for this "drive-by" method. Instead, an end user device can send a ZigBee signal to a communication node directly or indirectly (such as through a Local Area Network). The communication node communicates via the mesh network to send the relevant information to a remote location.

## **2. Agreed Claim Terms**

The parties agree that the term "the wireless protocol" should be construed as "the ZigBee protocol". In addition, the parties agree that the preamble to claim 1 of the '793 patent should be construed as limiting.

## **3. Disputed Claim Terms**

The parties dispute nine terms. Each term is a limitation of claim 1 of the '793 patent.

Defendant contends that

the crux of the parties' dispute is whether the end user device has to be something other than what is mounted on the street light pole, and whether the end user device needs to communicate with a node on a street light pole via the ZigBee protocol.

Plaintiff maintains that neither requirement need apply while defendant avers that those requirements comprise the invention.

#### I. "end user device"

Plaintiff's construction:

No construction necessary

Alternatively: "a device that collects information about a local parameter"

Defendant's construction:

"a device configured to communicate with a remote end user through at least one communication node mounted on a street light pole"

Plaintiff contends that the term "end user device" needs no construction because it would be understood by a person of ordinary skill in the art ("POSA") reading the patent as much as by a lay reader. Defendant responds that its proposed construction follows from the title of the patent, other claim language, and the specification and figures.

The Court prefers plaintiff's construction.

Defendant's contention that the claim limitations "taken together", require that the end user be remote is unavailing. In some embodiments, the target zone is mobile. See '793 Patent

at 6:43-45. Where that is the case, the end user need not be at a great distance from the target zone. Because defendant's construction would read out embodiments where the end user is in close proximity to the target zone, the Court will not adopt it. See Openwave Sys., Inc. v. Apple Inc., 808 F.3d 509, 517 (Fed. Cir. 2015) (affirming district court's claim construction because it did not read out embodiments).

Defendant's proposed limitation that the end user device communicate with the end user directly through a node also conflicts with embodiments found in the patent. In some embodiments, the end user device communicates with a node indirectly, such as through a local area network ("LAN"). See id. at 5:25-32. Defendant's proposed construction would exclude such embodiments.

Claim 1 of the '793 patent specifies that the end user device comprises

[a]n actuator adapted to interact with the local parameter within the target zone, and a low-power consumption communicator that has a unique communication address and is adapted to communicate with the actuator and adapted to communicate outside of the target zone using a wireless protocol, . . .

Reading the claim term "in the context of the entire patent, including the specification," see Phillips, 415 F.3d at 1313), the Court will construe the term "end user" as "a device that collects information about a local parameter".

**II. "employs a ZigBee protocol to communicate outside the target zone"**

Plaintiff's construction:

No construction necessary

Alternatively: "use a ZigBee protocol to broadcast information for which the end user is the final intended recipient"

Defendant's construction:

"adapted to transmit a ZigBee signal to the communication node"

Plaintiff avers that the claim does not specify an intended recipient and does not require a known endpoint. Defendant contends that the structure of the claim and the specification require the end user device to communicate with a communication node.

The specification considers that the end user devices "could take several distinct forms". '793 patent at 5:21. One embodiment discussed in the specification considers that the low-power communicators (referred to as "transponders" in the specification) could be part of a LAN and that the LAN could include a gateway that would communicate with the light pole device. Id. at 5:28-32. This embodiment would be precluded under defendant's proposed construction and is therefore disfavored. See Funai Elec. Co. v. Daewoo Elecs. Corp., 616 F.3d 1357, 1371 (Fed. Cir. 2010) (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) (noting that "a

claim construction that excludes a preferred embodiment is rarely, if ever, correct").

Defendant's construction would limit the claim so as to contradict the specification. This Court declines to adopt that interpretation and finds that no construction is needed.

### **III. "actuator"**

Plaintiff's construction:

No construction necessary

Alternatively: "a device capable of detecting, monitoring, or controlling a local parameter"

Defendants' construction:

"mechanism that activates process control equipment"

Plaintiff asserts that its alternative construction is consistent with the claim and specification and that the claim attributes broader functionality than just activation of process control equipment. Defendant maintains that the plain and ordinary meaning of "actuator" requires it to "actuate" something. Defendant relies on the title of the patent, "Remote Monitoring and Control System" as well as an engineering dictionary defining actuator as "[a] mechanism to activate process control equipment by use of pneumatic, hydraulic, or electronic symbols." See McGraw-Hill Dictionary of Electrical and Computer Engineering 8 (2004).

Because the term "actuator" is unlikely to be readily understood by a layperson, the Court will construe this term. Cf. CardioFocus, Inc. v. Cardiogenesis Corp., 827 F.Supp.2d 36, 41 (D. Mass. 2011) (explaining that claim construction may be warranted where claim terms implicate "special knowledge possessed by a person in the art").

Claim 1 requires the actuator to "interact with" the local parameter in the target zone. The specification makes clear that "interact with" incorporates a broader range of functionality than monitoring and controlling. For instance, the specification discusses an "end user device, comprising an actuator adapted to monitor or control a local parameter." '793 patent at 10:16-17 (emphasis added). The patent also describes an embodiment, called "DANGER MONITORING" where

at least some of the end-user devices are capable of monitoring chemical, biological, or radiological conditions within the target zone . . .

Id. at 14:66-15:2.

Defendant's requirement that the actuator "activates" process control is inconsistent with the specification and excludes one of the patent's embodiments. It will therefore be rejected. See Kaneka Corp. v. Xiamen Kingdomway Grp. Co., 790 F.3d 1298, 1304 (Fed. Cir. 2015) (emphasizing that claim constructions should not exclude preferred embodiments).

The specification, in various places, describes the end user device as "detecting", "monitoring" or "controlling" a local parameter. See '793 patent at 6:28-29 ("detecting garage door opening"); '793 patent at 6:16-17 ("monitor or control a local parameter"). Accordingly, the Court will construe the term "actuator" to mean "a device capable of detecting, monitoring, or controlling a local parameter."

#### **IV. "interact with"**

Plaintiff's construction:

No construction necessary

Alternatively: "detect, monitor, or control"

Defendants' construction:

"monitor and control"

The parties largely restate their arguments presented in constructing "actuator" for their proposed construction of the term "interact with". Both proposed constructions add unnecessary language to a readily understandable term. The Court declines to construe the term and will give it its plain and ordinary meaning. See Harris Corp. v. IXYS Corp., 114 F.3d 1149, 1152 (Fed. Cir. 1997) (rejecting construction of a term that "contribute[d] nothing but meaningless verbiage").

#### **V. "target zone"**

Plaintiff's construction:

No construction necessary

Alternatively: "a physical area that contains a local parameter"

Defendants' construction:

"a physical area that does not include a street light pole"

Plaintiff asserts that "target zone" needs no construction because it would be understood by a POSA reading the patent and that the claim language does not purport to limit the "target zone" in any way. Defendant emphasizes that the claims require at least one end user device that is not mounted on a street light pole.

At the Markman hearing, plaintiff argued that the same light pole mounted device could, in different contexts, act as an end user device (by monitoring and controlling a street light) and a communication node (by sending a Zigbee signal to another light pole mounted communication node). Plaintiff conceded that no language in the patent contemplates this "dual-function theory" but noted that a patentee is entitled to a patent's full scope absent disavowal.

The Court finds that neither party's construction is appropriate. Plaintiff is correct that defendant's construction would mistakenly exclude a public park that had a light pole in it but defendant is correct that the target zone must be different from a light pole.

The parties agree that a public park can be a target zone. For instance, the park could contain a pond with an end user device monitoring the water level of the pond. That end user device could communicate with a communication node on a light pole within the park and that communication node could then communicate with another communication node mounted on a light pole outside the park. Defendant's construction excludes such an embodiment. At the hearing, defendant contended that the target zone in that instance would not be the park but could, instead, be the pond. That is a fair construction but, if the parameter was the electricity usage in the entire park, it would result in a strange, donut-shaped target zone that would exclude islands of light poles. Accordingly, defendant's proposed construction is unacceptable.

Plaintiff proposes an over-broad construction of the term "target zone". While the Court agrees that the term is broad, it is not unlimited. Specifically, plaintiff's "dual-function" target zone theory is unavailing. Claim language must be "read in the context of the specification." Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1312 (Fed. Cir. 2007) (citing Phillips, 415 F.3d at 1315). The patent provides a lengthy list of possible embodiments, including a residence, warehouse, business building, parking lot, storage yard, stationary or moving vehicle or "any other stationary or mobile

entity that merits monitoring or control." See '793 Patent at 6:40-45.

Plaintiff's dual function theory is not, however, compatible with the language of the claim. In plaintiff's proposal, the light pole bearing the dual-function communication node/end user device would constitute the target zone, but in that instance the end user device would not be "within the target zone". See '793 Patent at 17:33.

Furthermore, plaintiff's proposed construction may well render the claim obvious in light of the prior art of communication networks consisting of communication nodes on light poles. See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP, 616 F.3d 1249, 1255 (Fed. Cir. 2010) (quoting Whittaker Corp. v. UNR Indus., Inc., 911 F.2d 709, 712 (Fed. Cir. 1990) ("[C]laims are generally construed so as to sustain their validity, if possible.")).

The Court will adopt a construction that "stays true to the claim language and most naturally aligns with the patent's description of the invention." Medicines Co. v. Mylan, Inc., 853 F.3d 1296, 1309 (Fed. Cir. 2017) (quoting Phillips, 415 F.3d at 1312). That description does not include the dual-function theory. Accordingly, the Court will construe "target zone" to mean "a physical area that contains a local parameter, with the

exception of a street light pole on which a communication node is mounted which node also functions as an end user device."

#### **VI. "within"**

Plaintiff's construction:

No construction necessary

Alternatively: "at least partially inside"

Defendants' construction:

"completely inside of"

Both parties contend that the plain and ordinary meaning of the word "within" supports their proposed construction.

Defendants do not overcome the "presumption in favor of the ordinary meaning" as understood by a POSA. Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306 (Fed. Cir. 2003).

The term "within" requires no construction.

#### **VII. "adjacent"**

Plaintiff's construction:

No construction necessary

Alternatively: "next to or adjoining"

Defendants' construction:

"completely outside and nearby"

The analysis of the term "adjacent" follows that of the term "within". The Court declines to add unnecessary verbiage to an otherwise clear term. See Harris Corp., 114 F.3d at 1152.

### VIII. "end user"

Plaintiff's construction:

No construction necessary

Alternatively: "an entity monitoring or controlling a local parameter through a system comprising end user devices"

Defendants' construction:

"person"

Plaintiff maintains that the term "end user" need not be limited to a natural person because the term could refer to an entity, a system or a group of persons. Defendant responds that the plain meaning of "end user" is a person and that the patent includes no instances where an end user is anything other than a person.

The patent specification provides for "a remote end user, who might be an operator at a fuel delivery dispatch facility." See '793 Patent at 1:28-29. Plaintiffs contend that the operator could be an automated system. The Court agrees. Similarly, the end user could be a group of persons monitoring a parameter at a remote location. Both of these possibilities would be excluded under defendant's proposed construction, which would be unnecessarily limiting.

Defendant is correct that the patent primarily contemplates that the end user will be a human person. Nonetheless, the

Court will not limit the claims scope merely because the term has a narrower meaning in an embodiment. See SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1286 (Fed. Cir. 2005).

The Court finds that the term "end user" needs no construction.

#### **IX. "end user adapted to communicate"**

Plaintiff's construction:

No construction necessary

Alternatively: "an entity monitoring or controlling a local parameter through a system comprising end user devices capable of communicating"

Defendant's construction:

Indefinite.

Defendant, relying on its construction of "end user" as "person", contends that the term "end user adapted to communicate" is indefinite because it is not clear how to determine whether a given person is "adapted to communicate".

A patent is invalid for indefiniteness

if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.

Dow Chem. Co. v. Nova Chemicals Corp. (Canada), 803 F.3d 620, 625 (Fed. Cir. 2015), cert. denied, 136 S. Ct. 2452 (2016) (quoting Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2124 (2014)).

As an initial matter, the Court notes that indefiniteness should be resolved at the summary judgment stage rather than

upon claim construction. See Amax, Inc. v. ACCO Brands Corp., 2017 WL 4621780, at \*7 (D. Mass. Oct. 13, 2017) (citing Biosig Instruments, Inc. v. Nautilus, Inc., 783 F.3d 1374 (Fed. Cir. 2015)) (explaining that indefiniteness is inappropriate for the claim construction stage because it involves the high “clear and convincing proof” standard).

As defendant explained at the Markman hearing, its indefiniteness contention is entirely dependent on its “end user” construction. Because the Court has already declined to construe the term “end user” as “person”, there is no reason to believe that a POSA would not understand the patent with reasonable certainty. Nonetheless, the Court will postpone any indefiniteness determinations for a later stage.

The Court declines to construe the term “end user adapted to communicate”.

#### **MARKMAN ORDER**

In accordance with the foregoing,

with respect to United States Patent No. 7,825,793:

- A) the preamble to claim 1 is construed as limiting;
- B) “the wireless protocol” means:  
**“the Zigbee protocol”;**
- C) “end user device” means:  
**“a device that collects information about a local parameter”;**

- D) "employs a ZigBee protocol to communicate outside the target zone" is accorded its plain and ordinary meaning;
- E) "actuator" means:  
**"a device capable of detecting, monitoring, or controlling a local parameter";**
- F) "interact with" is accorded its plain and ordinary meaning;
- G) "target zone" means:  
**"a physical area that contains a local parameter, with the exception of a street light pole on which a communication node is mounted which node also functions as an end user device";**
- H) "within" is accorded its plain and ordinary meaning;
- I) "adjacent" is accorded its plain and ordinary meaning;
- J) "end user" is accorded its plain and ordinary meaning;
- K) "end user adapted to communicate" is accorded its plain and ordinary meaning.

**So ordered.**

/s/ Nathaniel M. Gorton  
Nathaniel M. Gorton  
United States District Judge

Dated November 22, 2017