

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ALARM.COM INC.,
Petitioner,

v.

VIVINT, INC.,
Patent Owner.

Case IPR2016-00173
Patent 6,535,123 B2

Before MICHAEL R. ZECHER, JAMES B. ARPIN, and
CHARLES J. BOUDREAU, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Petitioner, Alarm.com Inc. (“Alarm.com”), filed a Petition requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 6,535,123 B2 (Ex. 1101, “the ’123 patent”). Paper 1 (“Pet.”).¹ Patent Owner, Vivint, Inc. (“Vivint”), filed a Preliminary Response. Paper 12. Taking into account the arguments presented in Vivint’s Preliminary Response, we determined that the information presented in the Petition established that there was a reasonable likelihood that Alarm.com would prevail in challenging claims 1–20 of the ’123 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on May 10, 2016, as to all of the challenged claims. Paper 14 (“Dec. on Inst.”).

During the course of trial, Vivint filed a Patent Owner Response (Paper 20, “PO Resp.”), and Alarm.com filed a Reply to the Patent Owner Response (Paper 27, “Pet. Reply”). Vivint also filed a Motion for Observation regarding certain cross-examination testimony of Alarm.com’s reply declarant, Arthur Zatarain, PE. (Paper 33, “Obs.”), and Alarm.com

¹ On December 17, 2015, after Alarm.com’s filing of the Petition, Vivint filed a Request for Certificate of Correction with respect to the ’123 patent, seeking to correct alleged mistakes in dependent claims 3, 4, 8, 14, 15, and 19. Ex. 2002 (“Request”), 3–4. By Order dated January 28, 2016, we stayed the Request, pursuant to 37 C.F.R. § 42.3, pending our decision on the Petition and the related petition filed in Case IPR2015-01995, and we also authorized Alarm.com to file a Brief limited to addressing certain issues related to the requested Certificate of Correction. See Paper 9 (“Order”). Alarm.com filed its Brief shortly before Vivint filed a Preliminary Response in this case. Paper 11 (“Pet. Brief”). On June 1, 2016, we lifted the stay of the Request (Paper 16), and the Certificate of Corrections Branch of the Office subsequently denied the Request (Ex. 3001).

filed a Response to Vivint's Motion for Observation (Paper 35, "Obs. Resp."). A consolidated oral hearing with Cases IPR2016-00116 and IPR2016-00161 was held on January 31, 2017, and a transcript of the hearing is included in the record. Paper 39 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–20 of the '123 patent. For the reasons discussed below, we hold that Alarm.com has demonstrated by a preponderance of the evidence that claims 1, 2, 4–6, 10, 13, and 15–17 are unpatentable under § 103(a). We, however, hold that Alarm.com has not demonstrated by a preponderance of the evidence that claims 3, 7–9, 11, 12, 14, and 18–20 are unpatentable under § 103(a).

A. Related Matters

The '123 patent is involved in a district court case captioned *Vivint, Inc. v. Alarm.com Inc.*, No. 2:15-cv-00392-CW-BCW (D. Utah 2015). Pet. 1; Paper 7, 2. In addition to this Petition, Alarm.com filed another petition challenging claims 1–20 of the '123 patent. *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2015-01995 (PTAB Sept. 28, 2015) (Paper 1). In that case, after taking into account the arguments presented in the Preliminary Response filed by Vivint, we concluded that the information presented in the Petition did not establish that there was a reasonable likelihood that Alarm.com would prevail in challenging any of claims 1–20 of the '123 patent as unpatentable under 35 U.S.C. §§ 102(b) and 103(a). *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2015-01995, slip op. at 23 (PTAB Apr. 4, 2016) (Paper 14). Shortly thereafter, Alarm.com filed another petition challenging dependent claims 3–5, 7–12, 14–16, and 18–20 of the '123 patent.

Alarm.com Inc. v. Vivint, Inc., Case IPR2016-01126 (PTAB June 2, 2016) (Paper 1). In that case, we exercised our discretion under 35 U.S.C. § 325(d) and denied that subsequent petition. *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2016-01126, slip op. at 12 (PTAB Dec. 6, 2016) (Paper 17).

Alarm.com also filed other petitions challenging the patentability of certain subsets of claims in the following patents owned by Vivint: (1) U.S. Patent No. 6,147,601 (Cases IPR2015-02004, IPR2016-00116, IPR2016-00155, and IPR2016-01080); (2) U.S. Patent No. 6,462,654 B1 (“the ’654 patent”) (Cases IPR2015-02003, IPR2016-00161, IPR2016-01110, and IPR2016-01124); (3) U.S. Patent No. 6,717,513 B1 (Cases IPR2015-01997, IPR2016-00129, and IPR2016-01091); (4) U.S. Patent No. 6,924,727 B2 (“the ’727 patent”) (Cases IPR2015-01977 and IPR2015-02008); and (5) U.S. Patent No. 7,884,713 B1 (“the ’713 patent”) (Cases IPR2015-01965 and IPR2015-01967). Paper 17, 1–2; Paper 18, 1–2. To date, we have issued Final Written Decisions in Cases IPR2015-01965 and IPR2015-01977 holding that Alarm.com has demonstrated by a preponderance of the evidence that (1) claims 1–54 of the ’713 patent are unpatentable under §§ 102(b) and 103(a); and (2) claims 1–9, 14–18, and 22–38 of the ’727 patent are unpatentable under § 103(a). *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2015-01965, slip op. at 53 (PTAB Mar. 29, 2017) (Paper 36); *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2015-01977, slip op. at 71 (PTAB Mar. 22, 2017) (Paper 44).

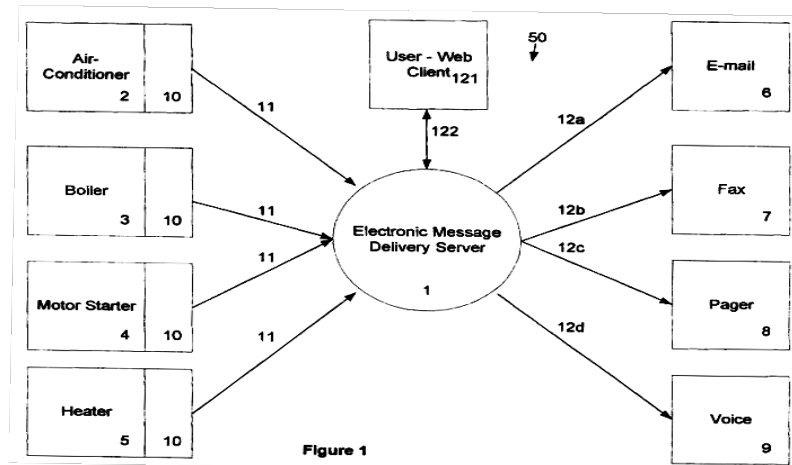
B. The ’123 Patent

The ’123 patent, titled “Electronic Message Delivery System,” issued March 18, 2003, from U.S. Patent Application No. 10/093,589, filed on March 8, 2002. Ex. 1101, at [54], [45], [21], [22]. The ’123 patent has an

extensive chain of priority that ultimately results in it claiming the benefit of U.S. Provisional Patent Application No. 60/115,305, filed on January 9, 1999. *Id.* at [63], [60], 1:6–16.

The '123 patent generally relates to monitoring systems and, in particular, to networks for remotely monitoring the condition of devices, such as those employed in heating, ventilating, and air conditioning (“HVAC”) systems. Ex. 1101, 1:20–23. In the Background of Invention section, the '123 patent describes how conventional HVAC systems are limited in their capabilities because they do not allow for sufficient flexibility in routing fault messages to a variety of different potential recipients via a variety of different media. *Id.* at 2:19–23. These conventional HVAC systems also do not enable customers and contractors to enter or modify such information. *Id.* at 2:23–25.

The '123 patent purportedly solves these problems because it describes a system for remotely monitoring electrical or mechanical equipment that delivers fault notification messages to different individuals for a variety of different fault conditions via a variety of different electronic media. Ex. 1101, 2:58–62. Figure 1 of the '123 patent, reproduced below, illustrates a schematic diagram of the preferred embodiment of this system. *Id.* at 4:21–22, 7:24–25.



As shown in Figure 1, system 50 monitors existing pieces of electronic equipment, such as air-conditioner 2, boiler 3, motor starter 4, heater 5, or any other equipment that a prospective user desires to monitor. Ex. 1101, 7:24–28. Each piece of equipment is fitted with interface 10 that periodically sends a status signal to electronic message delivery server 1 indicating whether the piece of equipment and its corresponding interface are functioning correctly. *Id.* at 7:29–33. When a predetermined “exception” condition (e.g., a fault condition) occurs in a piece of equipment being monitored, interface unit 10 sends a message to electronic message delivery server 1. *Id.* at 7:33–37. Electronic message delivery server 1 then routes the message to the appropriate user interface, such as email 6, fax 7, pager 8, voice 9, etc., according to a message profile configured by the user via user-web client 121 connected to Internet 122. *Id.* at 7:37–41, Fig. 1. The ’123 patent further describes an alternative embodiment in which each piece of equipment that the user desires to monitor is fitted with a sensor and a radio frequency transmitter. *Id.* at 8:53–65, Fig. 6 (items 600, 601).

C. Illustrative Claim

Of the challenged claims, claims 1 and 13 are independent. Independent claims 1 and 13 are directed to systems for routing messages electronically. Claims 2–12 directly or indirectly depend from independent claim 1; and claims 14–20 directly or indirectly depend from independent claim 13. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for routing messages electronically, comprising:

at least one sensor detecting a state of at least one parameter; and

a computer server in remote communication with said sensor, said computer server having a user interface, a user being capable of remotely accessing said computer server via said user interface to remotely configure a user-defined message profile containing outgoing message routing instructions, said routing instructions being of a number of types of information,

wherein when said sensor detects a condition or an event, said server forwards at least one outgoing message to at least one predetermined user-defined remote communication device as specified in said user-defined message profile.

Ex. 1101, 16:26–42.

D. Prior Art Relied Upon

Alarm.com relies upon the following prior art references:

Inventor²	U.S. Patent No.	Relevant Dates	Exhibit No.
Shetty	5,808,907	issued Sept. 15, 1998, filed Dec. 5, 1996	1103
Levac	6,034,970	issued Mar. 7, 2000, filed July 2, 1997	1105
Britton	6,040,770	issued Mar. 21, 2000, filed Sept. 4, 1998	1104

E. Instituted Grounds of Unpatentability

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 39.

Reference(s)	Basis	Claims Challenged
Shetty	§ 103(a)	1–4, 6, 10, 13–15, and 7
Shetty and Levac	§ 103(a)	5 and 16
Shetty, Levac, and Britton	§ 103(a)	7–9, 11, 13, and 18–20

II. ANALYSIS

A. Claim Construction

In an *inter partes* review proceeding, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016) (upholding the use of the broadest reasonable interpretation standard as the claim construction standard to be applied in an *inter partes* review proceeding). Under the broadest reasonable interpretation standard, claim

² For clarity and ease of reference, we only list the first named inventor.

terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). The U.S. Court of Appeals for the Federal Circuit has “recognized ‘only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.’” *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (citing *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)). Any special definition for a claim term must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read from the specification into the claims. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

During the course of trial, the parties dispute the constructions of the following claim terms or phrases: (1) “message profile containing outgoing message routing instructions,” as recited in each of independent claims 1 and 13; and (2) “communication device identification codes,” as recited in each of dependent claims 3 and 14. *See* Pet. 7–9; PO Resp. 31–34, 36–37; Pet. Reply 1–3, 16–23. We address each of these claim terms or phrases in turn.

1. “*message profile containing outgoing message routing instructions*”
(*claims 1 and 13*)

In the Decision on Institution, we determined that the broadest reasonable interpretation of “message profile containing outgoing message routing instructions,” as recited in each of independent claims 1 and 13, is “data record including instructions specifying at least one communication

device to which an outgoing message can be routed in response to an incoming exception message.” Dec. on Inst. 7–11. In its Patent Owner Response, Vivint contends that our construction of the claim phrase “message profile containing outgoing message routing instructions” in the Decision on Institution “overlooks a key aspect of the claimed message profile,” and that this claim phrase instead “should be construed to mean a ‘data record including instructions specifying **which** communication device **associated with which individuals** an outgoing message can be routed in response to an incoming exception message.’” PO Resp. 3, 31.

Referring to a sentence in the ’123 patent stating that “a list of who to contact via what means depending on which fault has occurred may be referred to as a ‘message profile’” (Ex. 1101, 2:34–36), Vivint contends:

In the [Patent Owner’s Preliminary Response (Paper 12)], Vivint argued that the construction of the term “message profile” should include “a list of who to contact” based on a definition in the Specification that included this limitation. (Paper 12, pp. 8–11.) The Institution Decision rejected this argument in part because the cited language from the Specification used “the permissive word ‘may.’” (Paper 14, p. 110.) But the “may” in the cited portion of the ’123 Patent states “[s]uch a list of who to contact via what means depending on which fault has occurred **may be referred to as** a ‘message profile.’” (Ex. 1101, 2:34–36, emphasis added.) So, “may” in this passage is used as part of a larger clause, “may be referred to as.” (*Id.*) This clause describes how the preceding language can be named, meaning this is one of many names, one of which is a message profile. (Ex. 2010, ¶ 50.) But there is no uncertainty as to what constitutes the message profile, as it is the inventor’s chosen name in this patent for the “list of who to contact via what means depending on which fault has occurred.” (*Id.*)

PO Resp. 32; *see also id.* at 3 (presenting essentially the same argument).

Vivint further contends:

This understanding is corroborated by another portion of the Specification, which serves as separate evidence as to the accuracy of Vivint’s proposed construction herein. Specifically, the ’123 Patent describes how a contractor configures his message delivery:

The contractor is provided with an account on the message delivery system that he can access via the Internet. The contractor sets up the specific parameters of which exception conditions ***are reported to which individuals***. The contractor also sets up by which media (fax, e-mail, PCS) these individuals are to be notified. Multiple individuals may be alerted as to an exception condition. ***All of this data constitutes the contractor’s message profile.***

PO Resp. 33 (quoting Ex. 1101, 5:66–6:8, emphases added by Vivint). According to Vivint, “[t]his passage is explicit as to the contents of the message profile requiring that the message profile includes ‘the specific parameters of which exception conditions are reported to which individuals,’ and the ‘media [by which] these individuals are to be notified.’” *Id.* (citing Ex. 2010 ¶ 51). Vivint contends that the intrinsic record “describes the ‘message profile’ as unwaveringly requiring not only an indication of which devices to contact, but also which individuals associated with those devices should be contacted.” *Id.* (citing Ex. 1101, 2:14–16, 4:39–47; Ex. 2010 ¶ 52).

In addition, Vivint contends that, “[e]ven aside from the intrinsic evidence, under the law a proper definition must take into consideration the problem the inventor was trying to solve,” and “[t]he ’123 Patent makes it clear that the inventor’s intent was to allow for the system to send different fault messages to different individuals depending on the fault that occurs.”

PO Resp. 33–34 (citing Ex. 1101, 2:19–33 (“All of the above systems and the prior art are limited in scope because they do not allow for sufficient flexibility in routing fault messages to ***a variety of different potential recipients*** of such messages via a variety of different media, depending on the urgency or nature of the fault.” (emphasis added))).

In its Reply, Alarm.com counters that, “[b]ecause the Board’s construction ‘take[s] into consideration’ the problem the ’123 Patent was directed at and is the Broadest Reasonable Interpretation of the term, it is correct.” Pet. Reply 1. Alarm.com contends that “Vivint largely rehashes arguments the Board previously rejected,” and “[t]hose arguments should be rejected once again for the same reasons the Board previously articulated.” *Id.* at 1–2 (citing PO Resp. 32–34). Referring to the statement in the Specification of the ’123 patent that “[s]uch a list of who to contact via what means . . . may be referred to as a ‘message profile,’” cited by Vivint in support of its construction (see PO Resp. 33 (citing Ex. 1101, 2:34–36)), Alarm.com contends that “[s]uch a list indeed fits within the Board’s construction, but adds no support for a limitation *requiring* that a message profile identify individuals.” Pet. Reply 2 (citing Dec. on Inst. 9–11). Alarm.com further contends “[l]ines 5:66–6:8 of the ’123 Patent likewise do not support Vivint’s narrower construction of ‘message profile.’” *Id.* (citing PO Resp. 33). “That passage identifies several implementation details of the preferred embodiment that are not limitations of the independent claims of the ’123 Patent: a user account; accessing a server via the internet; specifying types of communication devices and the specification of multiple individuals. To make such details part of the term construction improperly imports the specification into the claims.” *Id.* (citing Pet. 7–9).

Based on our review of the claims and specification of the '123 patent, we discern no reason to modify the construction of the claim phrase “message profile containing outgoing message routing instructions” set forth in the Decision on Institution. As we explained in that Decision, we interpret the statement in the '123 patent that “a list of who to contact via what means depending on which fault has occurred *may* be referred to as a ‘message profile’” (Ex. 1101, 2:34–36 (emphasis added)), at most, reflects that “a list of who to contact via what means depending on which fault has occurred” *could* be an example of a message profile, and does not necessarily require “a list of who to contact.” Dec. on Inst. 10. Although we acknowledge Vivint’s interpretation of the phrase “may be referred to as a ‘message profile’” as indicating that “message profile” simply is one of “many” names that could be given to “a list of who to contact via what means depending on which fault has occurred” (see PO Resp. 3, 31), we do not agree with Vivint that its proposed construction of “message profile” represents the broadest reasonable interpretation in light of the Specification of the '123 patent. As we pointed out in the Decision on Institution, the '123 patent includes embodiments, in which, for example, multiple messages are sent to multiple recipients via differing media for the same exception condition (Ex. 1101, 4:8–11), or the same person is contacted by different means (e.g., fax or personal communication service) at different times (*id.* at 6:17–18). Dec. on Inst. 10–11. Vivint’s proposed construction, requiring the message profile to specify “**which** communication device **associated with which individuals**” (PO Resp. 31), would exclude such embodiments.

In view of the full record developed during trial, we remain unpersuaded by Vivint’s argument that the statement in the specification of

the '123 patent that “a list of who to contact via what means depending on which fault has occurred may be referred to as a ‘message profile’” (Ex. 1101, 2:34–36) provides the requisite “clarity, deliberateness, and precision” to indicate that the patentees intended to act as their own lexicographer and disclaim the embodiments identified above. *See* Dec. on Inst. 10–11; *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004) (“We have cautioned against reading limitations into a claim from the preferred embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification.”); *Paulsen*, 30 F.3d at 1480 (an inventor may define specific terms used to describe invention, but must do so “with reasonable clarity, deliberateness, and precision” and, if done, must “‘set out his uncommon definition in some manner within the patent disclosure’ so as to give one of ordinary skill in the art notice of the change” in meaning).

Accordingly, we again conclude that the broadest reasonable interpretation of “message profile containing outgoing message routing instructions” is a “data record including instructions specifying at least one communication device to which an outgoing message can be routed in response to an incoming exception message.” This construction is consistent with the ordinary and customary meaning of this claim phrase, as would be understood by one with ordinary skill in the art, in light of the claims and specification of the '123 patent. *See* Ex. 1101, 2:34–36, 4:8–11, 6:17–18.

2. “communication device identification codes” (claims 3 and 14)³

In its Petition, Alarm.com does not present a construction for the claim term “communication device identification codes.” *See generally* Pet. 6–9, 20–22. Instead, Alarm.com merely argues that Shetty’s user profile database 106 stores user profiles, each of which may trigger a different mode of communication, such as a page, email, fax, etc. Pet. 20–21 (relying on claim chart for claim 1[c] (citing Ex. 1103, 1:21–22, 2:18–21, 2:43–61, Fig. 1)); *see also id.* at 22 (arguing the same). We, therefore, understand Alarm.com to argue that telephone numbers and email addresses are “communication device identification codes,” as that phrase is used in dependent claims 3 and 14.

In its Patent Owner Response, Vivint directs us to co-pending Case IPR2016-00161, in which we determined at the institution stage that Shetty’s disclosure of sending a notification to a user, at most, identifies telephone numbers or email addresses, which do not amount to the “communication device identification codes” recited in dependent claim 11 of the ’654 patent. PO Resp. 37 (citing *Alarm.com Inc. v. Vivint, Inc.*, Case IPR2016-00161, slip op. 40–41 (PTAB May 12, 2016) (Paper 16)). For instance, Vivint argues that an email address is not associated with a specific communication device because a user could use any computing device with Internet access to access his/her email. *Id.* (citing Ex. 2012 (Deposition Transcript of Mr. Zatarain), 89:15–90:11).

³ The parties did not present their claim construction positions regarding the claim term “communication device identification codes” separate and apart from their arguments regarding whether Shetty teaches or suggests this claim term.

In its Reply, Alarm.com counters that, outside of dependent claims 3 and 14, the specification of the '123 patent does not use the term “communication device identification code.” Pet. Reply 17. Alarm.com argues that the specification and, in particular, the description of the preferred embodiment repeatedly indicates that each individual message profile stores information sufficient to identify the method of communication preferred by each individual when notifying him/her of an exception condition, and specifically discloses an individual inputting pager, phone, and facsimile numbers for this purpose. *Id.* (citing Ex. 1101, 6:5–6, 11:48–60; Ex. 1131 (Reply Declaration of Mr. Zatarain) ¶¶ 136–139).

Alarm.com also argues that other portions of the specification refer to message tables 722A–725A illustrated in Figure 13 of the '123 patent that disclose various delivery methods, such as pager delivery. Pet. Reply 18 (citing Ex. 1101, 13:61–14:3, Fig. 13). Alarm.com asserts that the specification makes clear that these tables contain data concerning user communication devices. *Id.* at 18–19 (citing Ex. 1101, 14:25–61; Ex. 1131 ¶ 134). Alarm.com argues that, by contrast, the overwhelming majority of references to “devices” in the specification concern the sensors that generate a message, remote equipment, interface units or components of the server that route the message according to the message profile—not “communication devices” or identification of those devices. *Id.* at 19 (citing Ex. 1131 ¶¶ 135, 140, 143–149). Alarm.com then asserts that the '123 patent is silent with respect to storing any “communication device identification code” more specific than a telephone number or email address and, therefore, the broadest reasonable interpretation of this claim term must encompass these types of identifiers. *See id.*

Alarm.com further contends that any interpretation of a “communication device identification code” that excludes telephone numbers and email addresses cannot constitute the broadest reasonable interpretation because it would impermissibly exclude the preferred embodiment. Pet. Reply 20. Alarm.com reiterates that the disclosure in the specification of the ’123 patent of storing telephone numbers and email addresses is the only disclosure of storing any data about communications devices. *Id.* (citing Ex. 1131 ¶¶ 131–135, 160–164). Alarm.com further asserts that, although certain portions of the specification disclose fixed and unique identifiers, such as electronic serial numbers (“ESNs”) and mobile identification numbers (“MINs”), those ESNs and MINs only identify interface units—not user-defined communication devices. *Id.* at 21–22 (citing Ex. 1101, 5:51–57; Ex. 1131 ¶¶ 142–151).

Based on our review of the claims and specification of the ’123 patent, we agree with Alarm.com that the claim term “communication device identification codes” does not appear in the specification outside of dependent claims 3 and 14. See Pet. Reply 17. We, however, do not agree with Alarm.com’s assertions that the specification is silent with respect to storing “communication device identification codes” more specific than telephone numbers or email addresses. See *id.* at 19–20. Figure 12 of the ’123 patent, reproduced below, illustrates a Device Message Delivery Table and a Device Location Table, each of which is stored in relational database 21 depicted in Figure 4. Ex. 1101, 4:50–51.

Device Message Delivery				720A
Key	Message Delivery Id	Int	nnnn	
	Message Id	Int	nnnn	
	Device Id	Int	nnnn	
	In Service	Char	\$	
	Delivery Attempts	Int	nnnn	
	Delivery Method	Char	\$\$\$.\$	
	Retry Interval	Int	nnnn	
	Wait Time	Int	nnnn	
	Start Time	Datetime	DD	
	End Time	Datetime	DD	

Device Location				721A
Key	Device Location Id	Int	nnnn	
	Notifactor User Id	Int	nnnn	
	Device Id	Int	nnnn	
	Installation Date	Datetime	TT:TT	
	Retirement Date	Datetime	TT:TT	
	Device Location Name	Char	\$\$\$.\$	
	Gmt Offset	Int	nnnn	
	Daylight Savings Time	Char	\$\$\$.\$	
	Salutation	Char	\$\$\$.\$	
	First Name	Char	\$\$\$.\$	
	Middle Initial	Char	\$\$\$.\$	
	Last Name	Char	\$\$\$.\$	
	Gender	Char	\$\$\$.\$	
	Phone	Char	\$\$\$.\$	
	Extension	Char	\$\$\$.\$	
	Address 1	Char	\$\$\$.\$	
	Address 2	Char	\$\$\$.\$	
	City	Char	\$\$\$.\$	
	State	Char	\$\$\$.\$	
	Zip	Char	\$\$\$.\$	
	Manufacturer	Char	\$\$\$.\$	
	Model	Char	\$\$\$.\$	
	Serial Number	Char	\$\$\$.\$	
	Name	Char	\$\$\$.\$	

Figure 12

As shown in Figure 12 reproduced above, Device Message Delivery Table 720A, includes, among other things, “Device Id,” and Device Location Table 721A includes, among other things, “Device Id” and “Serial Number.” *Id.* at 13:59–61, 14:50–51. According to the specification of the ’123 patent, Device Message Delivery Table 720A and Device Location Table 721A are just two of several tables included in a message profile that are used in conjunction with message tables 722A–725A illustrated in Figure 13 to deliver an exception message. *See id.* at 13:55–14:63. Based on these cited disclosures, and contrary to Alarm.com’s assertions, the ’123 patent discloses storing both a device identifier (“ID”) and serial number of a device, and using these unique identifiers to initiate communication with a specific device.

We do not agree with Alarm.com’s argument that any reference to “devices” in the specification of the ’123 patent is limited to sensors, remote

equipment, interfaces units, or components of the server. *See* Pet. Reply. 19. Alarm.com’s argument in this regard is belied by the plain language of the challenged claims, which identify the “sensor,” “computer server,” “user interface,” “equipment,” and “communication device” as separate elements. *See Becton, Dickinson & Co. v. Typco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘clear implication of the claim language’ is that those elements are ‘distinct components’ of the patented invention.” (citation omitted)).

That is, independent claim 1 clearly draws a distinction between “at least one *sensor*” and “a *computer server* having a *user interface*,” on the one hand, and a “user-defined remote *communication device*,” on the other hand. Ex. 1101, 16:24–42 (emphases added). Claim 3 depends from independent claim 1, and further draws a distinction between identification codes associated with “*equipment*” and those associated with the “remote user-defined *communication device*.” *Id.* at 16:53–57 (emphases added). Given that these challenged claims list the “sensor,” “computer server,” “user interface,” and “equipment” as separate elements from the “communication device,” we consider these elements as distinct components of the claimed invention. Based on this distinction in the challenged claims, it is our view that the references to “devices” in the specification of the ’123 patent, particularly to the device ID and serial number of a device stored in Device Message Delivery Table 720A and the Device Location Table 721A, are referring to the “communication device” recited in the challenged claims—not sensors, remote equipment, interfaces units or components of the server, as asserted by Alarm.com.

We also do not agree with Alarm.com's argument that any interpretation of "communication device identification codes" that excludes phone numbers and email addresses cannot constitute the broadest reasonable interpretation because it would impermissibly exclude the preferred embodiment. *See* Pet. Reply 20. Alarm.com's argument in this regard is predicated on the notion that the '123 patent does not disclose anything more specific than using telephone numbers or email addresses to identify the destination of an exception message and, therefore, these types of identifiers constitute the preferred embodiment. As we explain above, the Device Message Delivery Table 720A and the Device Location Table 721A illustrated in Figure 12 of the '123 patent store a device ID and serial number of a device, and the corresponding description of these figures discloses using these unique identifiers to initiate communication with a specific device. *See* Ex. 1101, 13:55–14:63, Fig. 12. Given these figures and their corresponding descriptions, we decline Alarm.com's invitation to characterize the preferred embodiment as only including telephone phone numbers or email addresses—neither of which, in our view, is capable of uniquely identifying a specific device.

In summary, we conclude that the broadest reasonable interpretation of the claim term "communication device identification codes" includes either a device ID (e.g., a MIN) or a serial number of a device (e.g., an ESN). This construction is consistent with the ordinary and customary meaning of this claim term, as would be understood by one with ordinary skill in the art, in light of the claims and specification of the '123 patent. *See* Ex. 1101, 13:55–14:63, Fig. 12.

B. Obviousness Based on Shetty

Alarm.com contends that 1–4, 6, 10, 13–15, and 17 of the ’123 patent are unpatentable under § 103(a) Shetty. Pet. 9–23. Alarm.com explains how Shetty purportedly teaches the subject matter of each challenged claim. *Id.* Alarm.com relies upon the Declaration of Mr. Zatarain to support its positions. Ex. 1106 ¶¶ 61–84. In its Patent Owner Response, Vivint presents a number of arguments with respect to these challenged claims. PO Resp. 4–37. Vivint relies upon the Declaration of Mr. Denning to support its positions. Ex. 2010 ¶¶ 56–131.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by a brief overview of Shetty, and then we address the parties’ contentions with respect to the challenged claims.

1. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–

18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

2. Level of Skill in the Art

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Alarm.com's declarant, Mr. Zatarain, testifies that a person of ordinary skill in the art as of January 1999 would be an individual who possesses (1) at least a bachelor's degree in computer science, electrical engineering, computer engineering, or equivalent coursework; and (2) at least two years of experience in remote monitoring and control systems. Ex. 1106 ¶ 11; Pet. 7 (stating the same). Vivint's declarant, Mr. Denning, testifies that a person of ordinary skill in the art as of January 1999 would be an individual who possesses (1) at least a bachelor's degree in electrical engineering or computer science; and (2) at least four years of experience in remote monitoring and control systems. Ex. 2010 ¶ 15.

We do not discern a material difference between the assessments advanced by the declarants, nor does either party premise its arguments exclusively on its assessment of the level of skill in the art. Moreover, each party's declarant appears to meet or exceed both parties' assessments (see Ex. 1106 ¶¶ 2–4, Attachment A; Ex. 2011), and either assessment of the level of skill in the art is consistent with the '123 patent and the asserted prior art. We, therefore, adopt Mr. Zatarain's assessment and apply it to our obviousness evaluation below, but note that our conclusions would be the same under Mr. Denning's assessment.

3. Shetty Overview

Shetty discloses a “method for providing information relating to a machine to a user.” Ex. 1103, Abstract. The method includes the steps of sensing predetermined events relating to the machine, producing corresponding event signals, delivering the event signals to a remote site, comparing the event signals to a profile of events corresponding to the user, and delivering a notification signal to the user if the event signals match the profile. *Id.* Shetty explains that “[c]omputers and electronics are becoming increasingly common on many machines.” *Id.* at 1:12–13. Shetty provides, as an example, that earthmoving machines now include many on-board sensors for recording parameter data during operation, and that on-board controllers also may calculate parameters of the machine based on sensor data. *Id.* at 1:13–17. Shetty further explains that, “with the large increase in the number of sensors and data being collected, the amount of data to be analyzed becomes unmanageable,” and “[a]dditionally, different persons, for example, the operator, the owner, etc. . . . , may have need for different information.” *Id.* at 1:18–24.

Figure 1 of Shetty is reproduced below.

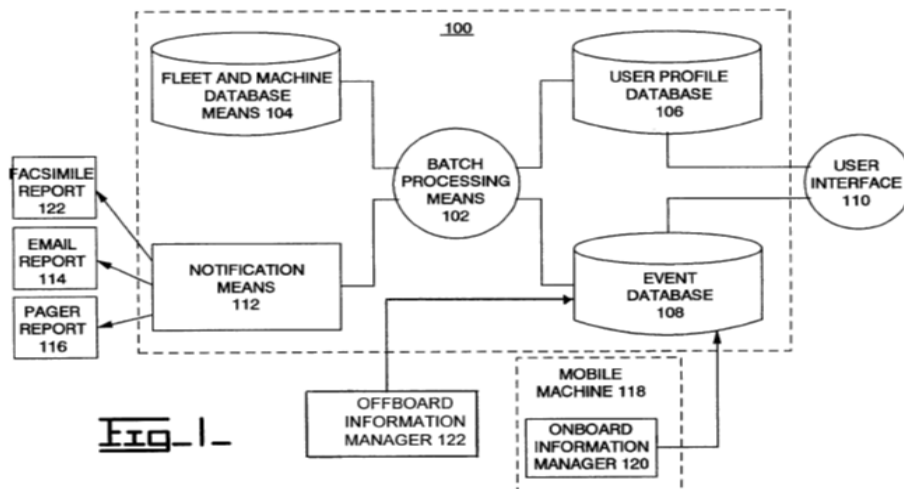


Figure 1 is a block diagram of an apparatus adapted for performing the method provided by Shetty. Ex. 1103, 1:39–40. With reference to Figure 1, warning manager 100 provides a method for providing information relating to a mobile machine in a fleet of mobile machines 118. *Id.* at 1:52–55. Shetty discloses that each of mobile machines 118 includes a plurality of on-board sensors for measuring machine parameters. *Id.* at 1:56–58. Each mobile machine 118 may also include a microprocessor-based controller or information manager 120 for receiving signals from the sensors, storing data when an event occurs, and calculating other machine parameters based on the sensor data. *Id.* at 1:58–62. Shetty explains that an “event” is a predetermined condition or set of conditions of the machine parameters. *Id.* at 1:63–65, 3:5–6. Shetty discloses that one event may be defined when a parameter, such as engine oil temperature exceeds a predetermined threshold, while other events may be tied to two or more parameters, such as when engine oil temperature exceeds another threshold and a sensor for detecting particles in the oil is triggered. *Id.* at 1:65–2:2, 3:6–9. Warning manager 100, which is preferably implemented on a computer workstation, includes batch processing means 102 for receiving and analyzing the events, fleet and machine database 104, user profile database 106, and event database 108 containing information relating to all triggered events received from the machines. *Id.* at 2:7–23.

Shetty further discloses that user profile database 106 contains information relating to all users, including a user profile that defines which events require that the user be notified. Ex. 1103, 2:18–21. The user profile defines the events which trigger the notification and the method of notification (e.g., by e-mail, pager, or facsimile). *Id.* at 2:43–48. User

interface 110 allows a user to access user profile database 106 and input information. *Id.* at 2:34–37. Shetty discloses that each user may have multiple profiles each having a different list of events that trigger notification. *Id.* at 2:49–51. Each profile can be predefined for a different event or different set of events, and each profile also may trigger a different mode or modes of communication. *Id.* at 2:58–61. In operation, the events stored in event data may be received from on-board information manager 120 in any of a number of methods, including by radio data link, satellite datalink, or similar methods. *Id.* at 2:23–27. Batch processing means 102 retrieves a list of events from event database 108 and the user profiles from user profile database 106, compares the list of events with the profile of each user, and, if all the conditions of a user profile are met, the user then is notified via notification means 112. *Id.* at 2:38–43.

4. Claims 1 and 13

In its Petition, Alarm.com contends that a person of ordinary skill in the art would have understood that Shetty disclosed all of the limitations of independent claims 1 and 13. Pet. 10–20, 22. With respect to remote user configuration of the message profile, as required by both of those claims, Alarm.com contends that users would access user profiles stored in Shetty’s user profile database 106 via user interface 110 and that a person of ordinary skill in the art would have recognized that, in Shetty’s customizable system, the purpose of user access to user profile database 106 would at least have been to configure or modify the user profiles stored therein. Pet. 14 (citing Ex. 1103, 2:34–35; Ex. 1106 ¶ 75).

Alternatively, Alarm.com contends it would have been obvious to one of ordinary skill in the art to extend Shetty’s disclosure of user access to user

profile database 106 to provide for user configuration of the user profiles stored therein. Pet. 15 (citing Ex. 1106 ¶¶ 76–78). Alarm.com argues that, because Figure 4 of Shetty discloses that users could access a third work station functioning as a data manager computer from a remote location, Shetty discloses remote user access via a user interface to configure user profiles stored in its user profile database. *Id.* at 15 (citing Ex. 1103, 3:58–67, 4:1–4, 4:8–10, 4:13–15, Fig. 4).

At a minimum, Alarm.com contends that, given Shetty’s emphasis on customizable user profiles and its disclosures regarding remote access, one of ordinary skill in the art would have been motivated to allow for remote configuration of the user profiles stored in user profile database 106. Pet. 16. According to Alarm.com, implementing this remote configuration in Shetty’s system would have required nothing more than the routine application of known techniques. *Id.* (citing Ex. 1106 ¶¶ 76–78). In the claim chart for its asserted ground based on obviousness over Shetty, Alarm.com reiterates its arguments as to how Shetty teaches or renders obvious remote configuration of the user profiles stored in user profile database 106. *Id.* at 18–19, 22.

In its Patent Owner Response, Vivint presents the following two arguments: (1) Shetty’s disclosure of accessing user profiles stored in user profile database 106 does not teach or suggest enabling a user to “remotely configure a user-defined message profile,” as recited in each of independent claims 1 and 13; and (2) Shetty’s user profile does not amount to “a user-defined message profile containing outgoing message routing instructions,” as recited in each of independent claims 1 and 13. PO Resp. 4–36. We address each argument in turn.

a. Shetty teaches or suggests “remotely configur[ing] a user-defined message profile,” as recited in each of independent claims 1 and 13

Each of independent claims 1 and 13 recites, in relevant part, “remotely configur[ing] a user-defined message profile.” Ex. 1101, 16:34–36, 17:43–45.

As we explain above in the introduction of the ground based on obviousness over Shetty, Alarm.com presents alternative theories as to how Shetty teaches or suggests the aforementioned claim limitation. *See supra* Section II.B.4. For the sake of expediency, we need not reiterate those same arguments again. In response, Vivint contends that Alarm.com’s positions as to how Shetty teaches or suggests the aforementioned claim limitation are untenable because Shetty is silent as to what level of access the user has been granted to user profile database 106. PO Resp. 6. Vivint argues that Shetty does not teach whether access is local or remote, nor does it disclose whether access is read-only or allows for user modification. *Id.* Relying upon the supporting testimony of its declarant, Mr. Denning, Vivint argues that the access taught by Shetty is likely read-only and local. *Id.* Vivint then addresses the claim terms “configure” and “remotely” separately and, finally, argues that Alarm.com’s reading of Shetty is tainted with hindsight bias. *Id.*

i. “configure”

Turning first to the “configure” feature recited in each of independent claims 1 and 13, Vivint contends that Shetty’s access does not teach explicitly or inherently configuration of its user profiles. PO Resp. 8. In particular, Vivint disagrees with Alarm.com’s argument that a person of ordinary skill in the art would have recognized that, in Shetty’s customizable

system, the purpose of user access to user profile database 106 would at least have been to configure or modify the user profiles stored therein. *Id.* Vivint argues that Alarm.com’s position in this regard is predicated on Shetty’s system being customizable, but Vivint asserts that Shetty does not teach a customizable system nor do its claims require such a system. *Id.* at 8. Vivint recognizes that Shetty’s user interface 110 allows the user to input information relating to fleets or machines, but Vivint argues that data concerning fleets or machines are stored in a separate database than the user profiles. *Id.* (citing Ex. 1103, 2:13–17, 2:33–36, Fig. 1).

Vivint further contends that the terms “configure” and “access” are not synonymous. PO Resp. 9. Relying on dictionary definitions, Vivint argues that these terms have different meanings in the art. *Id.* (citing Ex. 2014, 12, 111). Vivint also argues that, because the terms “configure” and “access” are used differently in the claims and in the specification of the ’123 patent, we must presume that these terms have different meanings in the art. *Id.* at 9–10 (citing *CAE Screenplates, Inc. v. Heinrich Fiedler GmbH*, 224 F.3d 1308, 1317 (Fed. Cir. 2000); Ex. 1101, 4:16–18, 5:67–6:2). Lastly, Vivint argues that the ’123 patent does not indicate that the terms “configure” and “access” are coextensive. *Id.* at 10–11 (citing *In re Magna Elecs., Inc.*, 611 F. App’x 969, 974 (Fed. Cir. 2015)).

In its Reply, Alarm.com counters that, contrary to Vivint’s assertion that Shetty’s system is not customizable, the description of Shetty’s system indicates that it *must* be customized and configured for each particular installation and user. Pet. Reply 4 (citing Ex. 1103, 1:52–2:61; Ex. 1131 ¶¶ 41–46; Ex. 1118 (Deposition Transcript of Mr. Denning), 48:9–18). Alarm.com maintains that Shetty’s teaching of a user accessing its user

profile stored in user profile database 106 via user interface 110 to specify when and how he/she will receive notifications teaches the configuration required by independent claims 1 and 13. *Id.* at 4–5 (citing Ex. 1103, 2:18–21, 2:33–36, 2:41–45, Fig. 1). To support this argument, Alarm.com asserts that Shetty does not teach or suggest any limitation or restriction on the operation of users accessing their user profiles stored in user profile database 106 via user interface 110, nor does Shetty teach or suggest any other means to configure the user profiles. *Id.* at 5 (Ex. 1131 ¶¶ 69, 70).

Alarm.com further argues that Shetty’s recitation of “access” immediately adjacent to its recitation of “*also* allowing the user to input information,” would have conveyed to one of ordinary skill in the art that a user is able to perform the function of inputting information into all three databases, including user profile database 106. Pet. Reply 6 (citing Ex. 1103, 2:34–37, Ex. 1131 ¶¶ 47–51, 63–67, 105). Lastly, Alarm.com argues that its position in this regard, as well as the supporting testimony of Mr. Zatarain, is informed and supported by four technical dictionaries, each of which confirms that one of ordinary skill in the art would have understood that “access” encompasses both reading and writing data. *Id.* at 6–7 (citing Exs. 1126–29).

We begin our analysis by noting that Shetty includes numerous disclosures teaching or fairly suggesting that its system is customizable. For instance, Shetty discloses that “different persons, for example, the operator, the owner, etc. . . . , *may have need for different information.*” Ex. 1103, 1:22–23 (emphasis added). Shetty also teaches how each user may have multiple, predefined aliases or profiles, each of which may trigger notification for different events and via different modes of communication.

Id. at 2:49–61. In addition, when describing the first industrial application or embodiment of Shetty’s invention illustrated in Figure 3, Shetty teaches that this first embodiment is “solely for illustration purposes,” and “the present invention may be *adapted* for a variety of such systems.” *Id.* at 3:46–48 (emphasis added); *see also id.* at 1:39–40 (explaining that Figure 1 illustrates “an apparatus *adapted* for performing the [invention described by Shetty]” (emphasis added)). Based on these teachings, we find that Shetty’s system, including user profile database 106, may be customized in a manner suitable for each particular installation and its corresponding users.

We also agree with Alarm.com that there is sufficient evidence of record demonstrating that Shetty’s customizable system and, in particular, its accessing of user profile database 106, allows for both reading and modifying data. The parties’ arguments regarding access to user profile database 106 focus on the following disclosure in Shetty: “[a] user interface 110 allows a user to *access* both the user profile database 106 and the event database 108. The user interface 110 also allows the user to *input* information relating to the fleet and machine data.” Ex. 1103, 2:34–37 (emphases added). In our view, Shetty’s teaching of allowing a user to “access . . . user profile database 106” immediately adjacent to its teaching of “also allow[ing] the user to input formation relating to fleet and machine data,” would have conveyed to one of ordinary skill in the art that user interface 110 allows a user to input information, such as fleet and machine data, into user profile database 106. Neither party directs us to, nor do we find, a disclosure in Shetty that teaches or suggests inputting information relating to fleet and machine data is restricted to inputting such data to fleet and machine database means 104. For instance, in order to ensure proper

notification of an exception message, Shetty's system associates a mobile machine (i.e., fleet and machine data) with a specific user profile stored in user profile database 106. That way, if an on-board sensor connected to mobile machine 118 detects an event (e.g., the engine oil temperature exceeds a predetermined threshold), Shetty's system consults the user profiles stored in user profile database 106, identifies the user profile associated with mobile machine 118, and determines how the corresponding user should be notified.

Alarm.com's position in this regard is reinforced further by the background knowledge one of ordinary skill in the art may consider in an obviousness evaluation. The Federal Circuit has recognized that evidence submitted during the course of a trial may be considered to demonstrate the knowledge that one of skill in the art "would bring to bear in reading the prior art identified as producing obviousness." *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015); *see also Randall Mfg. v. Rea*, 733 F.3d 1355, 1362–63 (Fed. Cir. 2013) (emphasizing that additional prior art references or evidence are not for the purpose of changing the prior art combination that forms the basis of the asserted ground, but rather are merely for the purpose of providing evidence of the state of the art, including the background knowledge of one of ordinary skill in this art). Here, we view the introduction of technical dictionaries defining the word "access" as including both reading and writing data as falling within the purview of permissible evidence we may consider in this obviousness evaluation. Upon considering this evidence, we agree with Alarm.com that these dictionary definitions of "access" would have informed one of ordinary skill in the art that, unless Shetty explicitly

indicates otherwise (which it does not), its disclosure of accessing user profile database 106 encompasses both reading and writing data. See Exs. 1126–29.

We do not agree with Vivint’s argument that the ’123 patent clearly differentiates between the terms “configure” and “access.” See PO Resp. 9–11. Rather, we view this as the unusual circumstance where the claims and Specification of the ’123 patent essentially treat these two terms as coextensive because they provide no reason for “access” other than to “configure,” “modify,” “create,” or “edit.” For instance, independent claims 1 and 13 each recite “a user being capable of remotely *accessing* said computer server via said user interface to remotely *configure* a user defined message profile.” Ex. 1101, 16:32–35, 17:42–43 (emphases added). With the exception of interchanging the words “configure” and “modify,” the following disclosures in the Specification use essentially the same language: (1) “[t]he user can remotely *configure or modify* the user-defined message profile by remotely *accessing* the computer server” (*id.* at 3:40–42) (emphases added); (2) “a user can remotely *access* the computer server via the user interface to remotely *configure* a user defined message profile” (*id.* at 3:51–53) (emphases added); and (3) “the contractor or consumer can *access* the centralized message server via the Internet and *modify* the message profile through software on the device” (*id.* at 4:16–18 (emphases added)). In addition, when describing the details of message delivery server 1 in conjunction with Figures 4 and 8–15, the specification further discloses a hardware device included in server 1 that enables “user 121 to *access* server 1 and *create or edit* his message profile residing in relational [database] 21.” *Id.* at 10:15–27 (emphases added). Put simply, the claims

and specification of the '123 patent merely require accessing the computer server via the user interface to configure or modify user profiles stored therein—no other intervening operations or steps are required between accessing and configuring/modifying.

In support of its argument that the '123 patent differentiates between the claim terms “configure” and “access,” Vivint attempts to distinguish the Federal Circuit’s discussion regarding coextensive terms in *Magna Electronics*. See PO Resp. 10–11. Contrary to Vivint’s assertion, we do not view the Federal Circuit’s discussion of coextensive terms in that case as distinguishable from the circumstances presented here. In that case, the appellant argued that there was a distinction between the terms “a positional relationship” and “an indication of a distance.” *Magna Elecs.*, 611 F. App’x at 974. The Federal Circuit explained that, even if it were to presume that such a distinction exists, the patent at issue in that case (i.e., U.S. Patent No. 5,949,331 (“the ’331 patent”)) essentially treats these two terms as coextensive. *Id.* After discussing certain disclosures in the specification of the '331 patent, the Federal Circuit determined that all that was required by the '331 patent was “a graphic overlay to indicate the distance, i.e., relative position, of objects behind a vehicle,” and this was precisely what the Board found was taught by the prior art. *Id.*

Similarly, all that is required by the '123 patent is accessing the computer server via a user interface to configure or modify user profiles stored therein—no other intervening operations or steps are required between accessing and configuring/modifying. We agree with Alarm.com that Shetty teaches or suggests the configuration of user profiles required by independent claims 1 and 13 because (1) Shetty’s system may be customized

in a manner suitable for each particular installation and its corresponding users; and (2) there is sufficient evidence of record to support a finding that one of ordinary skill in the art would have understood that Shetty's disclosure of accessing user profile database 106 encompasses both reading and writing data. *See* Pet. 14–15; Pet. Reply 4–7.

Lastly, we do not agree with Vivint that the general presumption that different words in a claim should have different meanings applies to the terms “configure” and “access.” *See* PO Resp. 9–10 (citing *CAE Screenplates*, 224 F.3d at 1317). This presumption may be rebutted if there is sufficient evidence to the contrary. *See CAE Screenplates*, 224 F.3d at 1317 (“In the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings.”). In our view, the record before us includes sufficient evidence to the contrary because the claims and specification of the '123 patent merely disclose accessing the computer server via a user interface to configure or modify user profiles stored therein—no other intervening operations or steps are required between accessing and configuring/modifying. *See* Ex. 1101, 3:40–42, 3:51–53, 4:16–18, 16:32–35, 17:42–43. As we explain above, Alarm.com presents sufficient argument and evidence demonstrating that Shetty's access to user profile database 106 allows for the configuration of profiles stored therein, as required by independent claims 1 and 13.

ii. “remotely”

Turning now to the “remotely” feature recited in each of independent claims 1 and 13, Vivint contends that neither Shetty's disclosure of remote notification illustrated in Figure 4, nor Shetty's limited discussion of the Hewlett-Packard HP-UX operating system (the “HP-UX system”), teaches

or suggests remotely accessing user profile database 106. PO Resp. 16. In particular, Vivint argues that Shetty does not disclose explicitly or inherently that user interface 110 allows remote access to user profile database 106. *Id.* at 17 (citing Ex. 2010 ¶ 90). To cure this purported deficiency, Vivint argues that Alarm.com directs us to Figure 4 of Shetty and its corresponding description that “[u]sers can also access the data stored on the third work station 406 and *receive electronic mail* via first and second *remote* work station 420, 422.” *Id.* (quoting Ex. 1103, 4:8–10) (citing Pet. 19).

According to Vivint, this cited disclosure in Shetty indicates that remote access only applies to email notification—not to accessing user profiles. *Id.* at 17–18 (citing Ex. 2010 ¶ 91). Vivint then asserts that Shetty is silent as to whether a user may access user profile database 106 from the remote work stations via user interface 110. *Id.* at 18 (citing Ex. 2010 ¶ 94).

Vivint further contends that a single sentence in Shetty stating that “warning manager 100 is implemented on a computer workstation operating the Hewlett-Packard HP-UX operating system” is not enough to demonstrate that warning manager 100 may be accessed remotely via user interface 110. PO Resp. 18–19 (quoting Ex. 1103, 2:8–10). Vivint argues that, at the very least, a certain amount of programming is required in order to enable remote access of a user interface program on an HP-UX system. *Id.* at 21 (citing Ex. 2010 ¶ 104). Vivint argues that neither Alarm.com nor its declarant, Mr. Zatarain, provide any details of the programming required to run under the HP-UX system that would be necessary to take advantage of the remote capabilities the HP-UX system has to offer. *See id.* at 19–20 (Ex. 2010 ¶¶ 98, 101–103, 109, 110).

In addition, Vivint contends that Alarm.com relies upon three conclusory paragraphs of Mr. Zatarain's Declaration to support its argument that Shetty teaches remote access. PO Resp. 22 (citing Pet. 17; Ex. 1107 ¶¶ 83–85). Vivint argues, however, that none of these paragraphs in Mr. Zatarain's Declaration provide or rely upon corroborating evidence to support his positions. *See id.* at 22–24, 27–28. Vivint further argues that, even in paragraphs of Mr. Zatarain's Declaration that were not presented and developed in the Petition that provide or rely upon corroborating evidence to support his position, that evidence neither qualifies as prior art to the '123 patent nor does it prove the point that Mr. Zatarain was trying to make. *See id.* at 25–26.

In its Reply, Alarm.com counters that Shetty explicitly discloses that users may access data on a data manager via remote work stations, which are illustrated in Figure 4 as communicating with the data manager by a modem-type connection. Pet. Reply 8 (citing Pet. 15; Ex. 1103, 4:8–10; Ex. 1131 ¶¶ 71, 72; Ex. 1118, 74:2–75:16). According to Alarm.com, this type of remote access allows a user to configure profiles stored in Shetty's user profile database 106. *See id.* Alarm.com further disagrees with Vivint's assertion that the remoteness illustrated in Figure 4 of Shetty and its corresponding description is limited to retrieval of email. *Id.* Alarm.com argues that Vivint's argument in this regard is contradicted by Shetty's explicit statement that users may “*access the data stored on the third workstation [410] and receive electronic mail.*” *Id.* (quoting Ex. 1103, 4:8–10) (citing Ex. 1131 ¶¶ 71, 72).

Alarm.com further argues that Vivint misses the point with its argument that the HP-UX system by itself does not teach remote access to a

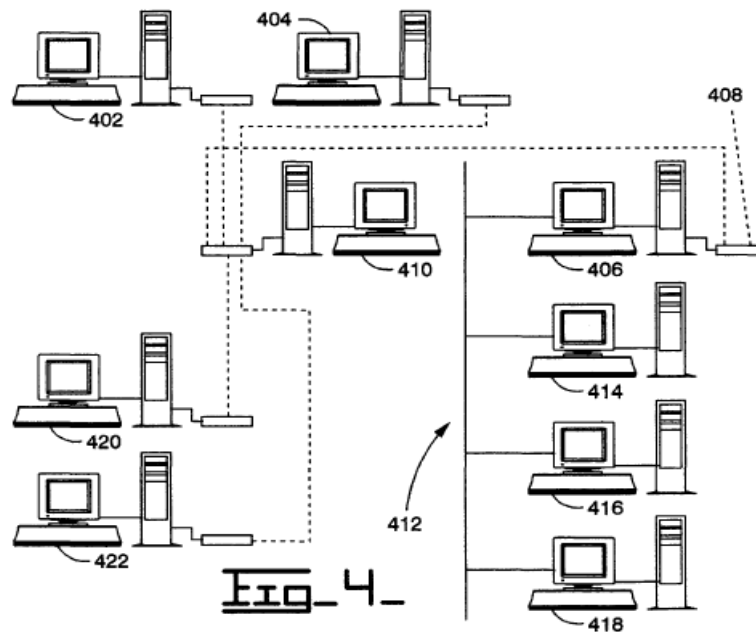
message profile. Pet. Reply 8. Alarm.com argues that it never contended that the HP-UX system itself discloses remote configuration. *Id.* Rather, relying upon the supporting testimony of Mr. Zatarain, Alarm.com advocates that the HP-UX system is a multi-user network operation system specifically designed to support software and network operations that would allow a user to interact with software remotely. *Id.* According to Alarm.com, a person of ordinary skill in the art would have understood that the use of the HP-UX system in Shetty's preferred embodiment is consistent with, and confirms, the network-based implementation illustrated in Figure 4 of Shetty and the remote access capability associated therewith. *Id.* at 8–9 (citing Ex. 1106 ¶ 75; Ex. 1131 ¶¶ 81–84).

In addition, Alarm.com contends that Vivint's arguments regarding alleged deficiencies in three paragraphs in Mr. Zatarain's Declaration are without merit because, as Vivint purportedly admits in a footnote, each of these paragraphs provides or relies upon various disclosures in Shetty. Pet. Reply 15 (citing PO Resp. 22 n.5). Alarm.com then reiterates its position that it would have been obvious to combine Shetty's teaching of a user remotely accessing data stored on either a database server or remote work station, with its teaching of a user accessing user profile database 106 via user interface 110, to teach or suggest remote user access to user profile database 106 via user interface 110. *Id.* (citing Ex. 1103, 2:34–35, 4:5–15; Pet. 14–16, 18–19).

As an initial matter, although Shetty does not disclose explicitly whether user interface 110 is local to, or remote from, warning manager 100, Figure 1 of Shetty (*see supra* Section II.B.3) clearly illustrates that user interface 110 is separate from and, therefore, remote from warning manager

100. *See In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972) (explaining that “things patent drawings show clearly are [not] to be disregarded,” and that “the teachings of patent drawings, even to features unexplained by the specification, [may] prove[] dispositive”). Indeed, Figure 1 of Shetty illustrates warning manager 100 using a dotted line that surrounds batch processing means 102, fleet and machine database means 104, user profile database 106, event database 108, and notification means 112. Ex. 1103, 2:11–31, Fig. 1. Off-board information manager 122 and mobile machine 118, which includes onboard information manager 120, both are located outside the dotted line that delineates warning manager 100. *Id.* at 1:56–62, 2:3–6, 2:22–32, Fig. 1. Similarly, user interface 110 is located outside the dotted line that delineates warning manager 100. *Id.* at 2:34–37, Fig. 1. Based on the orientation of elements illustrated in Figure 1 of Shetty, we find that user interface 110 is remote from warning manager 110 because this is consistent with how both off-board information manager 122 and mobile machine 118 are shown as being remote from warning manager 100.

Our finding in this regard is further reinforced by Alarm.com’s position as to how Figure 4 of Shetty and its corresponding description of a user remotely accessing data stored on either a database server or remote work station, together with Figure 1 of Shetty and its corresponding description of a user accessing user profile database 106 via user interface 110, teaches or suggests remote user access to user profile database 106 via user interface 110. *See* Pet. 14–16, 18–19; Pet. Reply 8–9, 15. Figure 4 of Shetty, reproduced below, illustrates a second industrial application or embodiment of the invention described in Shetty. Ex. 1103, 1:46–47.



As shown in Figure 4 reproduced above, Shetty discloses that first work station 402 and second work station 404 each collect data, which, in turn, are delivered to remote third workstation 410 for storage. Ex. 1103, 3:59–61, 3:65–67. Shetty further teaches that another remote site collects data that are delivered to remote database server work station 406 for storage. *Id.* at 3:61–64. Shetty then states that “[u]sers can access data stored on database server work station 406 and receive electronic mail via the first, second, and third network computers 414, 416, and 418.” *Id.* at 4:5–7 (emphasis added). Shetty further states that “[u]sers can also access data stored on the third work station [410] and receive electronic mail via first and second remote work stations 420 and 422.” *Id.* at 4:8–10 (emphasis added).

Based on Figure 4 and its corresponding description, we find that Shetty teaches at least one embodiment that allows a user to access data stored on either a database server or work station via one or more additional remote work stations. It is our view that, at a fundamental level, access of this type is nothing more than remote access. Applying this teaching of

remote access in one embodiment of Shetty to its explicit disclosure of a user accessing user profile database 106 via user interface 110 (*id.* at 2:34–36, Fig. 1), we agree with Alarm.com that it presents sufficient argument and evidence demonstrating that a user may remotely access user profile database 106 via user interface 110, as required by independent claims 1 and 13.

We do not agree with Vivint that remote access taught by Figure 4 of Shetty and its corresponding description is limited to remote email notification. *See* PO Resp. 17–18. Although Shetty states that “[u]sers can . . . receive electronic mail via first and second remote work stations 420, 422” (Ex. 1103, 4:8–10), Vivint’s position overlooks the first part of this sentence, which states that “[u]sers can also access the data stored on the third work station [410] and receive electronic mail via first and second remote work stations 420, 422” (*id.* (emphases added)). Shetty further explains how this type of remote access to data stored on a work station parallels the access to data stored on a database server via network computers. *Id.* at 4:5–7 (“Users can access the data stored on the database server work station 406 and receive electronic mail via the first, second, and third network computers 414, 416, 418.”). Contrary to Vivint’s argument, access of this type is not limited to remote email notification, but rather involves accessing data stored in either a database server or work station via one or more additional remote work stations.

As Shetty explains, events may be stored on both third work station 410 and database server work station 406. Ex. 1103, 4:11–12. In our view, there is no discernable reason as to why remotely accessing the event data stored on these work stations would not apply to accessing the user profile

data stored in user profile database 106 contained within warning manager 100, especially considering that the embodiment illustrated in Figure 4 is one of two industrial applications of the invention described in Shetty. That is, we understand Figure 4 of Shetty to be a particular application of the apparatus disclosed in Figure 1 of Shetty. *See id.* at 1:39–40 (“FIG. 1 is a block diagram of an apparatus adapted for performing the present invention.”), 3:54–55 (“With reference to FIG. 4, a second application of the present invention is illustrated.”). In Figure 1 of Shetty, event database 108, in which the events are stored, is accessed through the same user interface 110 that allows for access to user profile database 106. *See id.* at 2:34–35, Fig. 1.

We recognize that the parties present arguments as to whether Shetty’s disclosure of implementing warning manager 100 on a computer work station operating the HP-UX system does, indeed, support Alarm.com’s position that a user may remotely access user profile database 106 via user interface 110. *See* PO Resp. 16, 22–26; Pet. Reply 8–10, 13. We also recognize that the parties present arguments as to the weight we should accord Mr. Zatarain’s testimony that, for numerous reasons, it would have been obvious to one of ordinary skill in the art to provide remote access to Shetty’s user profile database 106. *See* Pet. 14–16; PO Resp. 26–32; Pet. Reply 13, 15. We, however, need not assess the merits of those arguments because, as we explain above, Alarm.com directs us to Figures 1 and 4 of Shetty and their corresponding descriptions that, when considered together, sufficiently demonstrate that a user may remotely access user profile database 106 via user interface 110, as required by independent claims 1 and 13.

iii. Alarm.com does not engage in impermissible hindsight reconstruction

Vivint contends that, to the extent Alarm.com demonstrates that Shetty teaches allowing a user to remotely access user profile database 106 to configure profiles stored therein, Alarm.com's arguments in this regard are the product of impermissible hindsight reconstruction. PO Resp. 28–30. According to Vivint, Alarm.com has not proven that a person of ordinary skill in the art at the time of the invention described in the '123 patent would have recognized the same problem recognized by the inventors of this patent. *Id.* at 30 (citing *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed Cir. 2012)). Vivint argues that Alarm.com does not provide or rely upon evidence indicating that one of ordinary skill in the art would have understood that it was “obvious and technically straightforward” to extend the meaning of database access into database configuration, much less extend the meaning of remote email notification into remote configuration of user profiles. *Id.* (citing Pet. 16–17; Ex. 2010 ¶¶ 117–119). Vivint further argues that the testimony of Alarm.com's declarant, Mr. Zatarain, fails to cure these deficiencies in the Petition because Mr. Zatarain makes only conclusory statements that are not supported by underlying facts or data. *Id.*

To the extent Vivint relies upon the Federal Circuit's decision in *Mintz* to support its argument that Alarm.com must look to the problem solved by the '123 patent in its obviousness evaluation, we do not agree. In *KSR*, the Supreme Court made clear that it is error to “hold[] that courts and [petitioners] should look only to the problem the patentee was trying to solve.” *KSR*, 550 U.S. at 420 (citation omitted). The Supreme Court explained that:

[t]he question is not whether the combination was obvious to the patentee but whether the combination was obvious to a person with ordinary skill in the art. Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.

Id.

Here, as we explain above, Alarm.com provides sufficient reasoning as to why one of ordinary skill in the art would have understood that Shetty allows a user to remotely access user profile database 106 via user interface 110 to configure profiles stored therein. See Pet. 14–16, 18–19; Pet. Reply 10–15. Alarm.com’s reasoning in this regard is directed specifically to the subject matter at issue in independent claims 1 and 13, and Alarm.com provides a sufficient basis in the record to support its reasoning. As a result, instead of presenting reasoning that is based on impermissible hindsight reconstruction, as asserted by Vivint, Alarm.com has articulated sufficient reasoning as to why one of ordinary skill in the art would have had reason to extend Shetty’s teaching of user access to user profile database 106 via user interface 110 to provide for remote configuration of the profiles stored therein.

iv. Summary

In summary, Alarm.com has presented sufficient argument and supporting evidence demonstrating that Shetty teaches or suggests “remotely configur[ing] a user-defined message profile,” as recited in independent claims 1 and 13.

- b. Shetty's user profile teaches or suggests "a user-defined message profile containing outgoing message routing instructions," as recited in each of independent claims 1 and 13*

Each of independent claims 1 and 13 recites, in relevant part, "a user-defined message profile containing outgoing message routing instructions." Ex. 1101, 16:34–36, 17:43–45.

In its Petition, Alarm.com contends that Shetty discloses a user profile that defines events that trigger notification via different modes of communication. Pet 13. (citing Ex. 1103, 2:43–48); *see also id.* at 19 (arguing the same). According to Alarm.com, Shetty's system allows for multiple users with multiple user profiles. *Id.* (citing Ex. 1103, 2:49–61). Alarm.com further argues that these profiles are stored in user profile database 106 included within warning manager 100. *Id.* (citing Ex. 1103, 2:18–21, 3:13–15, Fig. 1); *see also id.* at 18–19 (arguing the same). Alarm.com explains that, after receiving an event from mobile machine 118's onboard information manager 120, batch processing means 102 compares the event to each user profile stored in user profile database 106, and, once a match is found, notification means 112 sends a notification to the appropriate user devices. *Id.* (citing Ex. 1103, 2:39–42). Alarm.com further explains that Shetty refers to notifications sent to user devices as "notification signals" or "messages," and that these notification signals/messages may be sent to different types of devices. *Id.* at 14 (citing Ex. 1103, 3:18–20, 4:26–27, 4:51–52). Alarm.com asserts that, because Shetty discloses a user profile that specifies the destination of notification signals, including different categories of devices (e.g., email, pager, fax) for different detected events, Shetty teaches "user-defined message profile

containing outgoing message routing instructions,” as recited in independent claims 1 and 13. *Id.*

In its Patent Owner Response, Vivint contends that Shetty’s user profile do not include “any information relating to ‘which individuals an outgoing message can be routed.’” PO Resp. 35 (citing Ex. 2010 ¶ 123). Rather, Vivint argues that Shetty’s user profile includes routing instructions for notifying only a single user. *Id.* (citing Ex. 1103, 2:18–21, 2:42–43; Ex. 2010 ¶ 124). According to Vivint, Shetty confirms this understanding in another disclosure in which it describes, as an example, how two users are capable of being notified. *Id.* (citing Ex. 1103, 2:53–56; Ex. 2010 ¶ 125). Vivint asserts that, because Shetty’s user profile is specific to a particular user, and does not include, nor has reason to include, information relating to “which individuals an outgoing message can be routed,” Shetty does not teach a “user-defined message profile containing outgoing message routing instructions,” as recited in independent claims 1 and 13. *Id.* at 35–36 (citing Ex. 2010 ¶ 126).

In our claim construction section above, we maintain that the broadest reasonable construction of this claim term is “data record including instructions specifying at least one communication device to which an outgoing message can be routed in response to an incoming exception message.” *See supra* Section II.A.1. Shetty’s user profile is consistent with this construction because it specifies at least one communication device (e.g., device capable of receiving email, pager, fax, etc.) to which an outgoing message is routed in response to batch processing means 102 determining that an event received from mobile machine 118 matches the criteria of a user profile stored in user profile database 106. *See* Ex. 1103,

2:18–21, 3:13–15, 3:18–20, Fig. 1. We, therefore, agree with Alarm.com that Shetty teaches or suggests the claimed “user-defined message profile containing outgoing message routing instructions.” *See* Pet. 12–14, 18–19.

c. Remaining limitations

In its Patent Owner Response, Vivint does not address separately Alarm.com’s explanations and supporting evidence as to how Shetty teaches or suggests the remaining limitations recited in independent claims 1 and 13. *See generally* PO Resp. 4–36. We have reviewed Alarm.com’s explanations and supporting evidence in this regard, and we are persuaded that Shetty teaches or suggests each such limitation. *See* Pet. 10–12, 17–20, 22, and evidence cited therein.

d. Conclusion

Based on the record developed during trial, we conclude that Alarm.com has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 13 would have been obvious over Shetty.

5. Claims 2, 4, 6, 10, 15, and 17

Vivint does not address separately Alarm.com’s arguments and supporting evidence with respect to dependent claims 2, 4, 6, 10, 15, and 17. *See generally* PO Resp. 4–17. We have reviewed Alarm.com’s arguments and supporting evidence with respect to each of those claims presented in the Petition, and we agree with and adopt Alarm.com’s analysis. Pet. 9–16, 20–22, and evidence cited therein. Based on the record developed during trial with respect to independent claims 1 and 13, and the arguments and evidence presented in the Petition with respect to dependent claims 2, 4, 6,

10, 15, and 17, we conclude that Alarm.com has demonstrated by a preponderance of the evidence that the subject matter of those dependent claims would have been obvious over Shetty.

6. *Claims 3 and 14*

Each of dependent claims 3 and 14 recites, in relevant part, storing “communication device identification codes of all of said remote user-defined communication devices . . . , said communication device identification codes being configured in a plurality of said user-defined message profiles.” Ex. 1011, 16:53–57, 18:3–7. Although we have outlined the parties’ arguments regarding the claim term “communication device identification codes” in our claim construction above (*see supra* Section II.A.2), we nonetheless highlight these arguments below for convenience.

In its Petition, Alarm.com contends that Shetty’s user profile database 106 stores user profiles, each of which may trigger a different mode of communication, such as a page, email, fax, etc. Pet. 20–21 (relying on claim chart for claim 1[c] (citing Ex. 1103, 1:21–22, 2:18–21, 2:43–61, Fig. 1)); *see also id.* at 22 (arguing the same). We, therefore, understand Alarm.com to argue that Shetty’s telephone numbers and email addresses teach the claimed “communication device identification codes.” In its Patent Owner Response, Vivint contends that there is nothing in Shetty suggesting that its different modes of communication correspond to specific devices, nor that these modes of communication are represented by identification codes stored in Shetty’s user profile database 106. PO Resp. 36 (citing Ex. 2010 ¶¶ 127, 129). For instance, Vivint argues that Shetty discloses using email as one mode of communication, but an email address is not associated with a specific communication device because a user could use any computing

device with Internet access to access his/her email. *Id.* at 37 (citing Ex. 2012, 89:15–90:11). In its Reply, Alarm.com maintains that, because one of ordinary skill in the art would have understood that Shetty’s user profile database 106 stores telephone numbers and email addresses for all users, Shetty teaches or suggests the recited “communication device identification codes.” Pet. Reply 23 (citing Ex. 1103, 2:18–21, 3:18–20; Ex. 1131 ¶¶ 164–166).

In our claim construction section above, we construe the claim term “communication device identification codes” as including either a device ID or serial number of a device. *See supra* Section II.A.2. Shetty’s telephone numbers and email addresses are not consistent with this construction because they do not identify uniquely a specific device. *See* Ex. 1103, 2:18–21, 3:18–20. We also credit Vivint’s declarant, Mr. Denning’s, testimony on this particular issue. *See* Ex. 2010 ¶¶ 127–130. In particular, Mr. Denning testifies that “[Shetty’s] system can dial a particular phone number, and it will reach whatever device is tied to that phone number at the moment. *It is not device-specific.*” *Id.* ¶ 129 (emphasis added). He also testifies that, “[s]imilarly, [Shetty’s] system could send an email, and the recipient would be able to retrieve that email from nearly any Internet-accessible computer device. *Again, this is not device-specific.*” *Id.* ¶ 130 (emphasis added). We, therefore, agree with both Vivint and Mr. Denning that Shetty does not teach or suggest the claimed “communication device identification codes.” *See* PO Resp. 36–37; Ex. 2010 ¶¶ 127–130.

Based on the record developed during trial, we conclude that Alarm.com has not demonstrated by a preponderance of the evidence that

the subject matter of dependent claims 3 and 14 would have been obvious over Shetty.

C. Obviousness Based on the Combined Teachings of Shetty and Levac

Alarm.com contends that claims 5 and 16 of the '123 patent are unpatentable under § 103(a) over the combined teachings of Shetty and Levac. Pet. 23–32. Alarm.com explains how the combined teachings of Shetty and Levac account for the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to combine or modify their respective teachings. *Id.*

Alarm.com also relies upon the Declaration of Mr. Zatarain to support its positions. Ex. 1106 ¶¶ 85–99. In its Patent Owner Response, Vivint contends that one of ordinary skill in the art would not have had sufficient reason to combine the teachings of Shetty and Levac. PO Resp. 38–40.

We begin our analysis with a brief overview of Levac, and we then address the parties' arguments as to whether one of ordinary skill in the art would have had sufficient reason to combine the teachings of Shetty and Levac.

1. Levac Overview

Levac discloses an “intelligent messaging system” that “automatically conveys messages generated by a variety of message sources to one or more designated message recipients who receive communications via different types of communication devices.” Ex. 1105, Abstract. A message server automatically dispatches messages and updates to messages to a communication device interface that converts the messages to a protocol compatible with the types of communication devices used by the designated

message recipients. *Id.* The converted messages then are routed to local or remote communication destinations at which the message recipients' communication devices are located. *Id.*

In a preferred embodiment, a message file generator creates message files in a standardized file format, ".msa," which is an Object Linking and Embedding ("OLE") compound file format. Ex. 1105, 4:36–39. The .msa file may incorporate, among other things, the following information:

1. OWNER: identifies the user who created the file . . .
4. DATA: contains the message . . .
7. VARSTART: describes the variable conditions that must be satisfied before triggering a message to run . . . [and]
10. DESTPARAMS: supplies a list of destination parameters, such as recipient site location, required for transmitting the message to the destination.

Id. at 4:48–5:53. Levac also explains that the disclosed message server "supports various interfaces, such as . . . [Transmission Control Protocol / Internet Protocol ("TCP/IP")] messaging." *Id.* at 8:1–3. "Thus, message files can be received from a variety of local or remote message sources and can be generated either by automated sources or individual users." *Id.* at 8:3–5.

2. Claims 5 and 16

Each of dependent claims 5 and 16 recites, in relevant part, "wherein said user interface enables a user to configure a user-defined message profile to select at least one type of communication device . . . [and] select specific user-defined communication devices of the types selected." Ex. 1101, 16:63–17:3, 18:15–22.

In its Petition, Alarm.com contends that Shetty's teaching of notifying a user by email, pager, or fax, in conjunction with Levac's teaching of

creating an .msa file that may incorporate a particular message and a list of destination parameters (i.e., a recipient site location) required for transmitting a message to a particular destination, teaches the aforementioned features of dependent claims 5 and 16. Pet. 31–32 (citing Ex. 1103, 3:18–20; Ex. 1105, 4:49–50, 5:49–53, 8:14–17; Ex. 1106 ¶ 71). To support combining the teachings of Shetty and Levac, Alarm.com argues that it would have been obvious to one of ordinary skill in the art to modify Shetty’s system in view of the teachings of Levac because Levac provides implementation details for the core functionality taught by Shetty—namely, sending messages triggered by external sources (i.e., sensors or other “automated sources”) to particular devices based on user-specified preferences. *Id.* at 27. According to Alarm.com, Levac provides an explicit motivation for making such a combination because its message system was intended to be used in a variety of contexts. *Id.* (citing Ex. 1105, 3:46–49). Moreover, Alarm.com argues that, because Levac’s .msa file performs essentially the same role as Shetty’s user profile, one of ordinary skill in the art would have known to incorporate the helpful aspects of Levac’s .msa file (e.g., specifying destination parameters) into Shetty’s user profile without technical difficulty. *Id.* at 27–28 (citing Ex. 1106 ¶¶ 96–98).

Alarm.com also contends that it would have been obvious to one of ordinary skill in the art to use Levac’s teaching of sending outgoing messages to different types of user devices in Shetty’s system. Pet. 28. Alarm.com recognizes that, although Shetty teaches that this result already occurred, Shetty does not provide a detailed explanation as to how messages are actually sent to different types of user devices. *Id.* By contrast, Alarm.com argues that Levac teaches a comprehensive system and process

flow for routing messages to different types of user communication devices. *Id.* (citing Ex. 1106 ¶ 98).

In response, Vivint argues that Alarm.com’s rationale for combining the teachings of Shetty and Levac is too broad. PO Resp. 38. According to Vivint, Alarm.com and its declarant, Mr. Zatarain, merely attempt to show how Shetty and Levac account for all of the limitations required by dependent claims 5 and 16, but they do not provide the “‘what,’ ‘how,’ and ‘why’” for the proffered combination. *Id.* at 39. In other words, Vivint argues that neither Alarm.com nor Mr. Zatarain explain what the combined system taught by Shetty and Levac would look like, nor do they explain how one of ordinary skill in the art would combine teachings of Levac with those of Shetty’s system “without technical difficulty.” *Id.* (citing Pet. 28). Moreover, Vivint argues that neither Alarm.com nor Mr. Zatarain explain why one of ordinary skill in the art would have considered the limitations of Levac to be “natural extensions” of Shetty, much less how such limitations are useful to monitor remote machines, which Shetty already does. *Id.* at 39–40 (citing Pet. 32).

As an initial matter, Vivint does not address separately Alarm.com’s arguments and supporting evidence as to how the combined teachings of Shetty and Levac would account for all of the limitations required by dependent claims 5 and 16. *See generally* PO Resp. 38–40. We have reviewed Alarm.com’s arguments and supporting evidence in this regard, and we agree with and adopt Alarm.com’s analysis. Pet. 31–32, and evidence cited therein.

Turning to the parties’ arguments as to whether one of ordinary skill in the art would not have had sufficient reason to combine the teachings of

Shetty and Levac, we note that the Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Alarm.com has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

When considering the record in its entirety, Alarm.com’s rationale for combining the teachings of Shetty and Levac suffices as articulated reasoning with rational underpinnings to support the legal conclusion of obviousness. When, as here, a technique has been used to improve one device (i.e., Levac’s messaging system creates an .msa file that may incorporate a particular message and a list of destination parameters, such as a recipient site location, required for transmitting a message to a particular destination), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., using the aforementioned disclosure in Levac to improve Shetty’s system), using the technique is obvious unless its actual application is beyond the skill level of an ordinarily skilled artisan. *See KSR*, 550 U.S. at 417; Pet. 27–28; Ex. 1106

¶¶ 96–98; *see also In re Ethicon, Inc.*, 844 F.3d 1344, 1351 (Fed. Cir. 2017) (The Federal Circuit previously has recognized “[t]he normal desire of artisans to improve upon what is already generally known.”). Apart from generally asserting that neither Alarm.com nor Mr. Zatarain provide the “what,” “how,” and “why” for the asserted combination of Shetty and Levac (*see* PO Resp. 38–40), Vivint does not present credible evidence that combining the teachings of these references in the manner proposed by Alarm.com would have been uniquely challenging or otherwise beyond the skill level of an ordinarily skilled artisan.

Based on the record developed during trial, we conclude that Alarm.com has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 5 and 16 would have been obvious over Shetty and Levac.

D. Obviousness Based on the Combined Teachings of Shetty, Levac, and Britton

Alarm.com contends that claims 7–9, 11, 12, and 18–20 of the ’123 patent are unpatentable under § 103(a) over the combined teachings of Shetty, Levac, and Britton. Pet. 32–45. Alarm.com explains how the combined teachings of Shetty, Levac, and Britton account for the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to combine or modify their respective teachings. *Id.* Alarm.com also relies upon the Declaration of Mr. Zatarain to support its positions. Ex. 1106 ¶¶ 100–117. In its Patent Owner Response, Vivint contends that Shetty and Britton, either alone or in combination, render obvious “a normal status message,” as recited in dependent claims 7 and 18. PO Resp. 40–45.

We begin our analysis with a brief overview of Britton, and we then address the parties' contentions as to whether Shetty and Britton, either alone or in combination, render obvious "a normal status message," as recited in dependent claims 7 and 18.

1. Britton Overview

Britton discloses a "communication path integrity supervision system . . . that allows communication of automatic alarm data." Ex. 1104, Abstract. According to Britton, a "central alarm monitoring station greatly desires a signal that corresponds to or indicates the loss of the telephone link between itself and the protected premise, as that is an alarm event in itself." *Id.* at 1:43–46. In Britton's system, "a plurality of automatic alarm data transmitters are linked by diverse paths with . . . at least one central receiver on the network for receiving the automatic alarm data." *Id.* at Abstract. "[E]ach transmitter includes circuits for generating and sending to the central receiver a succession of 'next promised check-in' messages, to be on schedule as promised." *Id.* "The central receiver is further configured with an alert signal for signaling whenever any remote transmitter fails to meet its scheduled . . . next promised check-in." *Id.*

2. Claims 7 and 18

Each of dependent claims 7 and 18 recites, in relevant part, "periodically generat[ing] a normal status message to said user-defined communication devices if said sensor detects a normal status condition." Ex. 1101, 17:7–10, 18:28–31.

In the Petition, Alarm.com asserts that periodic transmission of "normal status messages" . . . was well known in the art" and, "[i]n

particular, it was disclosed by Britton.” Pet. 33. Alarm.com contends, “Britton noted that a ‘central alarm monitoring station greatly desires a signal that corresponds to or indicates the loss of the telephone link between itself and the protected premise, as that is an alarm event in itself.” *Id.* at 34 (quoting Ex. 1104, 1:43–46). According to Alarm.com, “[i]f the central station failed to receive an expected check-in message, the central station generated an ‘alert signal’ corresponding to the protected premises, which could then be forwarded to various destinations.” *Id.* (citing Ex. 1104, 8:48–52, 8:56–62). Alarm.com then asserts that “Britton disclose[s] the periodic transmission of a ‘check-in message’ from the monitored premises to a remote computer, and that the failure of the remote computer to receive such a message cause[s] an alert to be sent to different specified destinations depending on the premises being monitored.” *Id.*

Alarm.com contends that the combined teachings of Shetty and Britton renders obvious transmitting and storing of “normal status messages” and sending particularized alarm messages concerning premises that failed to send “normal status messages,” as purportedly required by dependent claims 7 and 18. Pet. 35–38 (citing Ex. 1106 ¶¶ 101, 104, 106, 107, 109–112). Alarm.com further contends that a person of ordinary skill in the art “would have been motivated to incorporate Britton’s periodic status messages into the Shetty system (whether . . . augmented by Levac . . .) because Britton offered a solution to a well[-]known problem in the art: the inability to distinguish between silence caused by lack of alarm conditions and silence caused by communication failure.” *Id.* at 38–39 (citing Ex. 1106 ¶¶ 101, 104).

In its Patent Owner Response, Vivint contends that the combined teachings of Shetty and Britton fails to account for a normal status message indicative of proper operation of the piece of remote equipment, because “Britton’s check-in messages indicate only health of communication lines, but not the health of the remote equipment as claimed.” PO Resp. 3–4, 41–42. According to Vivint, “Britton’s check-in messages verify integrity of the communication link between the alleged interface unit and the alleged server,” but “have no relationship at all to the health of Britton’s remote equipment.” *Id.* at 4.

In its Reply, Alarm.com counters that Britton operates similarly to teachings of the ’123 patent in that, if a non-normal condition is detected at monitored equipment, a remote interface sends an alarm message. Pet. Reply 25. Alarm.com further contends:

The ’123 Preferred Embodiment states that the interface can also be programmed to “check in once a day with an ‘all systems okay’ message”. Ex. 1101, 6:24–25. The “missing message subroutine” at the message delivery server (the central monitoring station) checks whether each “interface” has actually “checked in” (*id.*, 6:31–35), and “sends out the appropriate message” if not (*id.*, 6:35–38). Likewise, according to Britton, each “control unit or panel that interfaces between the central alarm monitoring station and various alarm sensors” (Ex. 1104, 4:36–38) sends scheduled “check-in” messages to a central station or “receiving equipment”. *Id.*, 2:5–7; 7:28–32. Britton further teaches that it is known that in systems using “packet data messages”, such messages can include additional content. *Id.*, 7:41–44. The “receiving equipment” compares incoming check-in messages against a list of expected check-in signals, and generates an alert if an expected check-in is not received. *Id.*, 8:30–34; 8:48–54.

In both Britton and the ’123 Patent, a check-in message indicates (a) that the communication link between the remote

interface and the central station is functional, and (b) because it is merely a check-in message and not an exception condition message, that no sensors associated with the interface (nor the interface itself) are reporting exception conditions. Ex. 1130, ¶¶177–78.

In both systems, if the communication channel is operational, and an exception condition is reported to the interface by a sensor, an exception message will be sent to the central station. Britton expressly discloses that alarm conditions may relate to any of an individual piece of monitored equipment (“an ATM”), a remote interface unit or “control unit panel” (e.g., “a low battery condition”) (Ex. 1104, 1:23–31), or the communication link itself (*id.*, 8:48–54). Thus, just as taught by the ’123 Patent, receipt of a non-alarm check-in message verifies that *all* aspects of the system are in a normal, non-exception condition. Ex. 1130, ¶¶178–79.

Pet. Reply 25–26.

Upon reviewing the full record developed at trial, we do not agree with Alarm.com that the combined teachings of Shetty and Britton properly account for a “normal status message,” as that claim phrase is used in dependent claims 7 and 18, to refer to a message indicative of proper operation of remote equipment being monitored. Notwithstanding our determination in the Decision on Institution that “a check-in message that does not indicate an alarm condition amounts to a *normal* status message, under a broad, but reasonable, interpretation of that term” (Dec. on Inst. 33), we agree with Vivint that Alarm.com did not raise that specific argument in the Petition. See PO Resp. 5. Rather, as stated above, Alarm.com argues that Britton teaches or suggests check-in messages indicating the status of the telephone link between a central alarm monitoring station and monitored premises, and that the failure to receive such a message is treated as an alarm condition. In contrast with Alarm.com’s arguments, we agree with Vivint

that dependent claims 7 and 18 require a message *specifically* indicative of the proper operation of a piece of remote equipment. *See* PO Resp. 40–42.

Although one might theoretically be able to deduce from Britton’s check-in message confirming the integrity of the communication link that is unaccompanied by an exception message indicative of improper operation of remote equipment (i.e., a “non-alarm check-in message,” in Alarm.com’s parlance) that both the communication link and the remote equipment are functioning normally, Alarm.com has not established that a person of ordinary skill in the art would have understood such a combination of events to teach or suggest affirmatively a “normal status message” indicative of the proper operation of a piece of remote equipment. Moreover, we are not convinced that a person of ordinary skill in the art would have made such a modification in the absence of improper hindsight knowledge drawn from the teachings of the ’123 patent itself. *See Graham*, 383 U.S. at 36 (cautioning against “the temptation to read into the prior art the teachings of the invention in issue”). Although we recognize Alarm.com’s contention that, “[f]or the reasons stated above, no modification of Britton’s check-in would be needed” (Pet. Reply 27), we do not agree. As Alarm.com points out, Britton teaches that it was known that systems using “packet data messages” *can* include additional content (*id.* at 25 (citing Ex. 1104, 7:41–44)), Alarm.com does not direct us to, nor can we find, persuasive evidence that the combined teachings of Britton and Shetty specifically would include a normal status message as such “additional content.”

For the foregoing reasons, the combined teachings of Shetty and Britton do not account properly for the “normal status message” feature required by dependent claims 7 and 18. As applied by Alarm.com, Levac

does not remedy this deficiency in the combined teachings of Shetty and Britton identified above. Based on the record developed during trial, we conclude that Alarm.com has not demonstrated by a preponderance of the evidence that the subject matter dependent claims 7 and 18 would have been obvious over Shetty, Levac, and Britton.

3. Claims 8, 9, 11, 12, 19, and 20

By virtue of their dependency, claims 8, 9, 11, 12, 19, and 20 each include the “normal status message” feature recited in dependent claims 7 or 18. Therefore, for the same reasons discussed above with respect to dependent claims 7 and 18, Alarm.com has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims 8, 9, 11, 12, 19, and 20 would have been obvious over Shetty, Levac, and Britton.

E. Vivint’s Motion for Observation

Vivint filed a Motion for Observation on the cross-examination testimony of Alarm.com’s reply declarant, Mr. Zatarain (Ex. 1131). Obs. 1–13. Alarm.com, in turn, filed a Response. Obs. Resp. 1–13. To the extent Vivint’s Motion for Observation pertains to testimony purportedly impacting Mr. Zatarain’s credibility, we have considered Vivint’s observations and Alarm.com’s responses in rendering this Final Written Decision, and we have accorded Mr. Zatarain’s reply testimony appropriate weight. See Obs. 1–13; Obs. Resp. 1–13.

III. CONCLUSION

Alarm.com has demonstrated by a preponderance of the evidence that claims 1, 2, 4, 6, 10, 13, 15, and 17 of the ’123 patent are unpatentable under

§ 103(a) over Shetty; and claims 5 and 16 of the '123 patent are unpatentable under § 103(a) over the combined teachings of Shetty and Levac. Alarm.com, however, has not demonstrated by a preponderance of the evidence that claims 3 and 14 of the '123 patent are unpatentable under § 103(a) over Shetty; and claims 7–9, 11, 12, and 18–20 of the '123 patent are unpatentable under § 103(a) over the combined teachings of Shetty, Levac, and Britton.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1, 2, 4–6, 10, 13, and 15–17 of the '123 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 3, 7–9, 11, 12, 14, and 18–20 of the '123 patent have not been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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