

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TELIT WIRELESS SOLUTIONS INC., TELIT COMMUNICATIONS
PLC, SIERRA WIRELESS AMERICA, INC., SIERRA WIRELESS, INC.,
and RPX CORP.,
Petitioner,

v.

M2M SOLUTIONS LLC,
Patent Owner.

Case IPR2016-00055¹
Patent 8,648,717 B2

Before KALYAN K. DESHPANDE, JUSTIN T. ARBES, and
DANIEL J. GALLIGAN, *Administrative Patent Judges*.

GALLIGAN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318

¹ Case IPR2016-01073 has been joined with this proceeding.

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.108, Telit Wireless Solutions Inc., Telit Communications PLC, Sierra Wireless America, Inc., Sierra Wireless, Inc., and RPX Corp. (collectively, “Petitioner”) challenge the patentability of claims 1–24 and 29 of U.S. Patent No. 8,648,717 B2 (“the ’717 patent,” Ex. 1101), owned by M2M Solutions LLC (“Patent Owner”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a), addresses issues and arguments raised during trial. For the reasons discussed below, we determine that Petitioner has proven by a preponderance of the evidence that claims 1–23 and 29 of the ’717 patent are unpatentable. *See* 35 U.S.C. § 316(e) (“In an *inter partes* review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”). However, Petitioner has not proven by a preponderance of the evidence that claim 24 of the ’717 patent is unpatentable.

A. *Procedural History*

On October 21, 2015, Telit Wireless Solutions Inc. and Telit Communications PLC requested *inter partes* review of claims 1–30 of the ’717 patent. Paper 1, “Pet.” Patent Owner filed a Preliminary Response. Paper 8. In our Decision on Institution of *Inter Partes* Review, we instituted trial of claims 1–24 and 29, but we denied institution as to claims 25–28 and 30. Paper 9, “Dec. on Inst.” Trial was instituted on the following grounds of unpatentability:

1. Whether claim 24 is unpatentable under 35 U.S.C. § 102(b) as anticipated by Van Bergen;²
2. Whether claims 1–3, 5–18, 22, 23, and 29 are unpatentable under 35 U.S.C. § 103(a) as having been obvious over Van Bergen and Bettstetter;³
3. Whether claim 4 is unpatentable under 35 U.S.C. § 103(a) as having been obvious over Van Bergen, Bettstetter, and Sonera;⁴
4. Whether claims 19 and 20 are unpatentable under 35 U.S.C. § 103(a) as having been obvious over Van Bergen, Bettstetter, and Kuusela;⁵ and
5. Whether claim 21 is unpatentable under 35 U.S.C. § 103(a) as having been obvious over Van Bergen, Bettstetter, and Eldredge.⁶

Dec. on Inst. 48.

Subsequent to institution, Sierra Wireless America, Inc., Sierra Wireless, Inc., and RPX Corp. filed a petition asserting the same grounds in Case IPR2016-01073, along with a motion for joinder with this proceeding. Trial was instituted and the motion for joinder was granted. Paper 25. Patent Owner filed a Response (Paper 24, “PO Resp.”), and Petitioner filed a Reply (Paper 26, “Reply”).

An oral hearing was held on December 5, 2016, a transcript of which appears in the record. Paper 33 (“Tr.”).

² WO 00/17021, published Mar. 30, 2000 (Ex. 1113).

³ “GSM Phase 2+ General Packet Radio Service GPRS: Architecture, Protocols, and Air Interface,” IEEE COMMUNICATIONS SURVEY, vol. 2, no. 3 (1999) (Ex. 1114).

⁴ WO 00/14984, published Mar. 16, 2000 (Ex. 1125).

⁵ WO 97/49077, published Dec. 24, 1997 (Ex. 1128).

⁶ WO 95/05609, published Feb. 23, 1995 (Ex. 1129).

B. Related Matters

Petitioner and Patent Owner cite a number of judicial matters in the United States District Court for the District of Delaware involving the '717 patent, as well as matters involving ancestor patents of the '717 patent. See Pet. 2; Paper 5. The '717 patent is also the subject of *Sierra Wireless Am., Inc. et al. v. M2M Solutions LLC*, Case IPR2015-01823, in which the Board is issuing a Final Written Decision concurrently.

C. Illustrative Claim

The '717 patent is generally directed to a “programmable communicator device.” Ex. 1101, Abstract. The '717 patent has three independent claims—claims 1, 24, and 29. Claim 1 is reproduced below:

1. A programmable communicator device comprising:
 - a programmable interface for establishing a communication link with at least one monitored technical device, wherein the programmable interface is programmable by wireless packet switched data messages; and
 - a processing module for authenticating one or more wireless transmissions sent from a programming transmitter and received by the programmable communicator device by determining if at least one transmission contains a coded number;wherein the programmable communicator device is configured to use a memory to store at least one telephone number or IP address included within at least one of the transmissions as one or more stored telephone numbers or IP addresses if the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number, the one or more stored telephone numbers or IP addresses being numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions;

wherein the programmable communicator device is configured to use an identity module for storing a unique identifier that is unique to the programmable communicator device;

and wherein the one or more wireless transmissions from the programming transmitter comprises a General Packet Radio Service (GPRS) or other wireless packet switched data message;

and wherein the programmable communicator device is configured to process data received through the programmable interface from the at least one monitored technical device in response to programming instructions received in an incoming wireless packet switched data message.

Ex. 1101, 12:34–13:3.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). In applying a broadest reasonable construction, claim 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. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). This presumption may be rebutted when a patentee, acting as a lexicographer, sets forth an alternate definition of a term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposed constructions for the following terms and phrases: “programmable,” “coded number,” “the transmissions including the at least

one telephone number or IP address and the coded number” (single transmission), and “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions.” Pet. 8–12. In its Preliminary Response, Patent Owner did not disagree with Petitioner’s proposed construction of “programmable,” and although Patent Owner disputed Petitioner’s proposed construction of “coded number,” Patent Owner did not propose its own construction for this term. Prelim. Resp. 2.

We determined in the Decision on Institution that, at that time, we needed only to assess the constructions offered by the parties for the claim phrases “the transmissions including the at least one telephone number or IP address and the coded number” (single transmission) and “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions.” Dec. on Inst. 6–12. During the trial, the parties addressed the construction of these phrases. PO Resp. 5–19; Reply 4–12. Based on the record developed during the trial, we provide the following additional analysis with respect to these claim phrases.

1. Single Transmission

The independent claims of the ’717 patent recite, in part:

a processing module for authenticating one or more wireless transmissions sent from a programming transmitter and received by the programmable communicator device by determining if at least one transmission contains a coded number;

wherein the programmable communicator device is configured to use a memory to store at least one telephone number or IP address included within at least one of the transmissions as one or more stored telephone numbers or IP

addresses if the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number, the one or more stored telephone numbers or IP addresses being numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions.

Ex. 1101, 12:39–56, 14:60–15:10, 16:6–23.

In its Petition, Petitioner argued that the phrase “the transmissions including the at least one telephone number or IP address and the coded number” means that the claim “does not require that the telephone number or IP address and the coded number are in the same transmission” but, rather, that the telephone number or IP address can be in the same transmission or in a different transmission from the coded number. Pet. 9–10. In its Preliminary Response, Patent Owner argued Petitioner’s interpretation is incorrect and that the independent claims “require[] that authentication be performed on a ‘single transmission’ that includes both the ‘coded number’ and the telephone number or IP address.” Prelim. Resp. 3.

In our Decision on Institution, we determined that the claims allow the telephone number or IP address to be in the same transmission or in a different transmission from the coded number. Dec. on Inst. 9. During the trial, both parties addressed this claim construction issue. PO Resp. 5–11; Reply 5–8. Patent Owner argues the claim language itself

requires a processing module that is capable of authenticating “the at least one of the transmissions including the at least one telephone number or IP address and the coded number.” Under this sentence structure, the phrase “including the at least one telephone number or IP address and the coded number” acts to modify the phrase “the at least one,” and *not* to modify the phrase “of the transmissions.” Accordingly, the claim language

requires the authentication of a “single transmission” (*i.e.* “the at least one” transmission) that includes the “coded number” along with a telephone number or IP address.

PO Resp. 5–6. Petitioner maintains that there is no “single transmission” requirement, arguing that the use of plural language in the claims demonstrates that the coded number and the telephone number or IP address can be in the same transmission or different transmissions and still fall within the scope of the claims. Reply 5–7.

After considering the parties’ arguments, we determine that our preliminary claim construction in the Decision on Institution is not the broadest reasonable interpretation in light of the Specification, and we are persuaded by Patent Owner’s argument that the claim language requires both the coded number and the telephone number or IP address to be in the same transmission. *See* PO Resp. 5–11. The relevant claim language is reproduced below:

wherein the programmable communicator device is configured to use a memory to store at least one telephone number or IP address included within at least one of the transmissions as one or more stored telephone numbers or IP addresses if the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number.

Ex. 1101, 12:44–52, 14:65–15:6, 16:11–19 (emphases added).

In an example where the telephone number and the coded number are in different transmissions, there would be at least two transmissions. The transmission that includes the “at least one telephone number or IP address” is a single transmission and, therefore, the “at least one of the transmissions.”

The independent claims recite that “the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number.” Ex. 1101, 12:48–52, 15:2–6, 16:15–19 (emphasis added). Here, the emphasized phrase “the at least one of the transmissions” takes antecedent basis from the first recitation of “at least one of the transmissions,” which is the transmission within which the telephone number (or IP address) is included. Therefore, the processing module performs authentication “by determining that the at least one of the transmissions includes the coded number,” and “the at least one of the transmissions” is defined in the claim as the transmission within which the telephone number (or IP address) is included. As such, the independent claims require processing module authentication of one transmission that includes both the telephone number (or IP address) and the coded number. Certainly, the claim allows for the existence of more than one transmission, but there must be at least one transmission that contains both.

In its Petition and again in its Reply, Petitioner focuses on the phrase “the transmissions including the at least one telephone number or IP address and the coded number.” Pet. 9–10; Reply 5. Although this phrase in isolation might be read to encompass a telephone number and a coded number in separate transmissions, the remaining claim language requires that one transmission have both a telephone number and a coded number, as explained above. In particular, Petitioner ignores that the relevant language is not just “the transmissions including the at least one telephone number or IP address and the coded number,” but rather “*the at least one of the*

transmissions including the at least one telephone number or IP address and the coded number,” which refers back to the previous recitation in the claim. Accordingly, Petitioner’s proposed claim construction is not persuasive because it does not consider the claim as a whole.

Petitioner also contrasts the ’717 patent claim language with the phrase “the at least one transmission including a coded number and at least one telephone number or Internet Protocol (IP) address,” which appears in related U.S. Patent No. 8,094,010 B2 (Ex. 1106), arguing that the latter explicitly recites a single transmission requirement, whereas the language in the ’717 patent does not. Reply 7. We are not persuaded of a distinction between the phrases “the at least one of the transmissions” and “the at least one transmission,” as they are used in the relevant claims, that warrants interpreting the claims of the ’717 patent as Petitioner proposes.⁷

Therefore, based on the record developed during trial, we determine that the claims require authentication of one transmission having both a coded number and a telephone number or IP address.

2. *“numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions”*

In our Decision on Institution, we determined that the broadest reasonable interpretation of the phrase “numbers to which the programmable communicator device is configured to and permitted to send outgoing

⁷ We also note that in the related district court case, *Sierra Wireless America, Inc., Sierra Wireless, Inc., and Telit Wireless Solutions Inc.* argued that the claims should be interpreted to require a “single wireless transmission that includes both the coded number and the telephone number or IP address.” Ex. 1108, 4, 19. Petitioner’s arguments in this proceeding that the limitation should be interpreted *not* to have a single transmission requirement are not persuasive.

wireless transmissions” is numbers to which the programmable communicator device is capable of sending outgoing wireless transmissions and permitted to send outgoing wireless transmissions. *See* Dec. on Inst. 9–12 (citing, *inter alia*, Ex. 1104 (excerpts from ’717 prosecution history), 31).

Patent Owner contends that the limitation of the independent claims reciting “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions” means “a *restrictive* outbound calling list.” PO Resp. 12. According to Patent Owner, “the ‘permitted’ claim language means that the recited calling list must function in a manner that limits the programmable communicator to sending one or more types of outgoing wireless transmissions to *only* those telephone numbers or IP addresses contained in the list.” PO Resp. 12.

We disagree that the broadest reasonable interpretation of “configured to and permitted to” is as limited as Patent Owner proposes. Patent Owner contends that our construction in the Decision on Institution “impart[s] no meaning to the word ‘permitted,’ suggesting merely that ‘permitted to’ means ‘permitted to.’” PO Resp. 13. However, our construction in the Decision on Institution came directly from statements made by the applicant for the ’717 patent accompanying the amendment adding the “permitted to” language. In particular, during prosecution, the applicant stated:

Applicants would like to thank the examiner for the telephone interview of November 8, 2013. During the interview, Examiner Nguyen suggested that it was not clear from the claim language that the programmable communicator device was permitted to send outgoing wireless transmissions to the stored telephone numbers or IP addresses. Applicant’s counsel and Examiner Nguyen then discussed amending the claims to add the language “and permitted to”. Examiner

Nguyen indicated that the amendments would put the claims in condition for allowance. . . .

As mentioned above, during the telephone interview of November 8, 2013, Examiner Nguyen suggested it was not clear from the claims that the programmable communicator device was permitted to send outgoing wireless transmissions the stored number(s). Although Applicants believe that “configured to,” in the context of the claim, meant the device was capable of and permitted to send outgoing wireless transmission, to expedite prosecution, Applicants have amended independent claims 1, 27 and 32 to read “the one or more stored telephone numbers or IP addresses being numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions....”

Ex. 1104, 31 (Supplemental Amendment, Nov. 8, 2013).

According to the prosecution history, therefore, the applicant added the language “permitted to” because the Examiner did not believe it was “clear” in the claims as written that the language “configured to” meant that the device was also “permitted to” call those numbers. There is no mention of restricting what numbers the device can call.

Patent Owner further contends the Specification of the ’717 patent “expressly disclose[s] the concept of restrictive outbound calling lists.” PO Resp. 17 (citing Ex. 1101, 2:20–23, 2:28–32). One of these passages, in the “Background of the Invention” section, states: “Clearly there is a need to provide a means to limit the cost of calling and also to provide a means to prevent the child dialling overseas numbers *for extensive periods of time.*” Ex. 1101, 2:20–23 (emphasis added). This passage describes a goal of controlling durations of calls to certain numbers, i.e., overseas calls, not completely blocking the sending of outgoing wireless transmissions to such numbers. The other passage cited by Patent Owner similarly states: “An

improved child Hotlink communicator, which restricts the usage of the mobile phone and thereby does not generate high charges through uncontrolled calling, is clearly a solution to the family tariffing challenge.” *Id.* at 2:28–32. This also relates to “control” of calling, not necessarily blocking outgoing transmissions. We do not read these passages as the applicant acting as a lexicographer and defining the “configured to and permitted to” language in the claims.

Patent Owner also cites various passages in the Specification of the ’717 patent that describe rejecting incoming calls. PO Resp. 15 (citing Ex. 1101, Fig. 2 (step 4), 9:61–67, 10:8–11). For example, step 4 of Figure 2 states that, upon an incoming call, “programmable communicator is unable to verify that the caller is on the permitted callers list and the call is terminated.” Ex. 1101, Fig. 2. Such functionality, however, is addressed by the authentication limitations of the independent claims, wherein the processing module “authentica[tes] one or more wireless transmissions sent from a programming transmitter and received by the programmable communicator device.” The claims explicitly recite authentication of certain transmissions, i.e., those to store a telephone number or IP address as “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions.” These stored numbers may be a restricted list in the sense that they are only stored upon authentication of a single transmission having the telephone number or IP address and the coded number, as discussed above. However, the independent claims use permissive language—“permitted to”—rather than restrictive language to describe “outgoing wireless transmissions.”

Based on the foregoing, we do not agree that Patent Owner’s proposed construction is the broadest reasonable interpretation of the phrase “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions.” We see no reason to deviate from the construction set forth in our Decision on Institution, which comes from the applicant’s own statements during prosecution of the ’717 patent. *See* Dec. on Inst. 9–12 (citing, *inter alia*, Ex. 1104, 31).

3. “*Processing module for authenticating*”

Neither Petitioner nor Patent Owner argued that the limitation of independent claims 1, 24, and 29 reciting “a processing module for authenticating one or more wireless transmissions sent from a programming transmitter and received by the programmable communicator device by determining if at least one transmission contains a coded number” should be interpreted as a means-plus-function limitation under 35 U.S.C. § 112, paragraph 6. Based on the full record developed during trial, we determine that this limitation is not governed by 35 U.S.C. § 112, paragraph 6, and does not require further construction. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (“When a claim term lacks the word ‘means,’ the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” (internal quotations and citation omitted)).

4. *Remaining Claim Terms*

We determine that no other claim terms require express construction in this proceeding.

B. Principles of Law

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). Although the elements must be arranged or combined in the same way as in the claim, “the reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009).

A patent claim is unpatentable under 35 U.S.C. § 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 ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Level of Ordinary Skill in the Art

In our Decision on Institution, we determined, based on the record at that time, that the skill level of a person of ordinary skill in the art, at the relevant time for the ’717 patent (May 2000), would have been “at least an undergraduate degree in electrical engineering and three years of experience working the development of wireless subscriber terminal systems or components, or an equivalent combination of education and experience in related fields.” Dec. on Inst. 23 n.4 (citing *Sierra Wireless Am., Inc. et al. v.*

M2M Solutions LLC, Case IPR2015-01823, slip op. at 11 n.4 (PTAB Mar. 8, 2016) (Paper 16)). The parties did not propose a different level of ordinary skill in the art during trial.

Based on the record developed during trial, we see no reason to deviate from our prior determination of the skill level of a person of ordinary skill in the art. This level of ordinary skill is reflected not only by the information presented by the parties, but also by the prior art of record. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art itself can reflect the appropriate level of ordinary skill in the art).

*D. Unpatentability Challenge based on the Combination of
Van Bergen and Bettstetter
(Claims 1–3, 5–18, 22, 23, and 29)*

Petitioner contends that the subject matter of independent claims 1 and 29 and dependent claims 2, 3, 5–18, 22, and 23 would have been obvious over the combination of Van Bergen and Bettstetter, providing analysis and arguments to explain how the cited prior art references teach the claimed subject matter and why a person of ordinary skill in the art would have combined the teachings of the references to arrive at the claimed subject matter. Pet. 17–45. In support of its contentions, Petitioner proffers the un rebutted testimony of Mr. Kimmo Savolainen. See Ex. 1105.

1. Van Bergen

Van Bergen discloses a security system called “CELL-EYE,” which “includes a controller and memory unit for the verification of the identity of incoming calls, and the activation, deactivation and programming of the CELL-EYE via validated incoming calls received by an alarm linked GSM [global system for mobile communication] mobile unit and modem from a

remote GSM mobile unit.” Ex. 1113, Abstract. Van Bergen discloses an advantage of the disclosed system is that it

allows the owner to remotely activate or program the security system by means of a telephone call from the owner’s cellular phone to the CELL-EYE installed in the vehicle or property. Such programming could include periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters such as the numbers that must be dialled when an alarm condition is detected, how frequently such calls need to be repeated and what to do if connection to a particular called number is not available at the time. Remote activation and programming of the device also alleviates the need for a user accessible interface to the CELL-EYE system.

Id. at 2:53–3:7.

2. *Bettstetter*⁸

Bettstetter describes the General Packet Radio Service (GPRS) for GSM, which “is a new bearer service for GSM that greatly improves and simplifies wireless access to packet data networks, e.g., to the Internet.” Ex. 1114, Abstract.

⁸ Bettstetter is a publication of the Institute of Electrical and Electronics Engineers (IEEE), namely an article in volume 2, number 3 of the “IEEE Communications Surveys: The Electronic Magazine of Original Peer-Reviewed Survey Articles.” Ex. 1114, 1. Based on the evidence of record, we agree with Petitioner that Bettstetter is a prior art printed publication under 35 U.S.C. § 102(b). See Pet. 13–14; *Kyocera Wireless Corp. v. ITC*, 545 F.3d 1340, 1350–51 (Fed. Cir. 2008) (holding that a “reference is publicly accessible ‘upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it’” (citation omitted)). Patent Owner does not contend Bettstetter is not a prior art printed publication.

3. *Claims 1 and 29*

a. *“Programmable communicator device” having a
“programmable interface”*

Claims 1 and 29 are each directed to a “programmable communicator device” having “a programmable interface for establishing a communication link with at least one monitored technical device, wherein the programmable interface is programmable by wireless packet switched data messages.”

i. *Contentions as to Van Bergen*

Petitioner contends Van Bergen’s “CELL-EYE” system discloses a “programmable communicator device” and that “alarm sensor interface 13” of the CELL-EYE system describes “a programmable interface for establishing a communication link with at least one monitored technical device,” as recited in claims 1 and 29. Pet. 17–19, 42.

First, Petitioner contends Van Bergen describes a “programmable communicator device” because the CELL-EYE system has communication devices, such as a “GSM [global system for mobile communication] mobile phone unit” and because Van Bergen describes programming the CELL-EYE system. Pet. 18 (citing Ex. 1113, Abstract, 2:51–52, 5:4–6). We are persuaded by Petitioner’s contention, and we find Van Bergen’s “CELL-EYE” system discloses a “programmable communicator device.” This finding is supported by Van Bergen’s disclosure that “[t]he CELL-EYE system includes a controller and memory unit for the verification of the identity of incoming calls, and the activation, deactivation and *programming of the CELL-EYE* via validated incoming calls received by an alarm linked GSM mobile unit and modem from a remote GSM mobile unit.” Ex. 1113, Abstract (emphasis added). Furthermore, Van Bergen describes that the

CELL-EYE system is a “communicator device” because “[c]ommunication to and from the CELL-EYE system to the user of the system is accomplished by means of a GSM mobile phone unit, the alarm linked unit 16, which is installed in the property or vehicle, together with a modem 15 which is designed to operate with the ALU.” Ex. 1113, 5:4–6.

Second, Petitioner contends “alarm sensor interface 13” of the CELL-EYE system describes “a programmable interface for establishing a communication link with at least one monitored technical device,” as recited in claims 1 and 29. Pet. 18–19 (citing Ex. 1113, 5:7–10, 6:20–31, 6:35–38, 6:41–42, 8:49–50, 10:12–13, Fig. 2). In particular, Petitioner contends the “alarm sensor interface” is a programmable interface that receives input from “disturbance sensors” and “security system[s]” and that is programmable by a remote “reset” function. Pet. 18–19. We are persuaded by Petitioner’s contentions, and we find Van Bergen’s “alarm sensor interface 13” describes “a programmable interface for establishing a communication link with at least one monitored technical device.” The finding that “alarm sensor interface 13” describes an “interface for establishing a communication link with at least one monitored technical device” is supported by Van Bergen’s disclosure that the system

is designed to be linked to input devices installed in the same property of vehicle namely the disturbance sensors 11 which form part of the vehicle or property security system 12 which has alarm outputs. The alarm outputs are detected and converted to digital form by the alarm sensor interface 13 which forms part of the CELL-EYE system.

Ex. 1113, 5:7–10; *see also id.* at Fig. 2. The finding that “alarm sensor interface 13” describes a “programmable interface” is supported by Van Bergen’s disclosure that “[t]he alarm sensor interface 13 contains circuits to

perform . . . a reset function which resets the output signals of the alarm sensor interface after the reception of digital inputs from the ALU 16 via the modem 15 and the controller and memory unit 14.” *Id.* at 6:31–38. We agree with Petitioner that “[r]esetting the alarm sensor interface and changing its output signals is ‘programming’ the interface.” Pet. 19.

Third, Petitioner contends that “[t]he ‘reset’ function is activated in response to inputs from the ALU and modem, [Ex. 1113, 6:37–38], i.e., via a wireless data message over the GSM mobile network.” Pet. 19 (citing Ex. 1113, 10:12–13, 8:49–50); Ex. 1105 ¶ 102. We are persuaded by this contention, and we find Van Bergen’s disclosure of “the reception of digital inputs from the ALU 16 via the modem 15 and the controller and memory unit 14” teaches a wireless message. *See* Ex. 1113, 6:37–38. This finding is supported by Van Bergen’s disclosure that the modem and the alarm-linked GSM unit operate to transmit and receive information wirelessly via a GSM network. For example, Van Bergen discloses that the modem is “for the reception and transmission of DATA and SMS [Short Message Service] messages via the GSM mobile network.” *Id.* at 10:12–13. Van Bergen also discloses that “[t]he GSM mobile unit will be configured for voiceless DATA and SMS mode operation.” Ex. 1113, 7:38–39. Furthermore, Van Bergen discloses that “[t]he CELL-EYE system can only be activated, deactivated or programmed via an incoming call to the ALU 16 and its associated modem.” Ex. 1113, 4:9–10. Therefore, Van Bergen expressly provides that an instruction to program or deactivate the alarm, such as through the reset function, is received wirelessly at the GSM unit. *See* Ex. 1105 ¶ 102.

Patent Owner does not dispute that “alarm sensor interface 13” describes “a programmable interface for establishing a communication link with at least one monitored technical device.” Rather, Patent Owner argues Van Bergen does not teach that the reset command is received in a wireless transmission. *See* PO Resp. 19–25. Patent Owner posits that the ALU could have generated the reset command itself rather than receiving it wirelessly. *See id.* In support of its position, Patent Owner cites excerpts of testimony from depositions of Petitioner’s declarant, Kimmo Savolainen, in this proceeding and in district court litigation. *See* Exs. 2010, 2011. We have reviewed the cited excerpts, and we do not find that they contradict Mr. Savolainen’s testimony that Van Bergen discloses that the signal to perform the reset function is received wirelessly. *See* Ex. 1105 ¶ 102. In fact, during the deposition in this proceeding, Mr. Savolainen was asked about the capability of the ALU of Van Bergen to generate control signals:

Q. Would some of the digital electronic signals that ALU 16 is capable of generating and transmitting be control signals?

...

A. Well, in terms of generating control signals, I believe it does not make decisions on issuing control signals. Those control signals would come from somewhere else, but it can relay such control signals that it receives through the GSM network from the RMU [remote messaging unit] in the system.

Ex. 2010, 9:15–10:2. This testimony is fully consistent with Mr. Savolainen’s testimony that Van Bergen describes receiving the reset function in a wireless message, which we find persuasive. Ex. 1105 ¶ 102.

Consistent with the evidence in this proceeding, we find Van Bergen teaches that an instruction to program or deactivate the alarm, such as through the reset function, is received wirelessly.

ii. *Combination with Bettstetter*

Petitioner acknowledges Van Bergen does not teach communicating with the CELL-EYE system using packet-switched messages. Pet. 19. Petitioner contends GSM evolved in the late 1990s to include wireless packet-switched communications, such as general packet radio service (GPRS), as evidenced by the teachings of Bettstetter. *Id.* at 19–20 (citing Ex. 1114 p. 2 (left): 8–14 – (right):5; Ex. 1115, 4 (left): 21 – 4 (right:16); Ex. 1117, 28 (left): 30–38; Ex. 1105 ¶¶ 47–48).

Petitioner contends that GPRS had various known benefits at the time and that “[i]t would have been obvious to a [person of ordinary skill in the art] to follow the evolution of wireless technology to 2G+ to use the most recent packet-switched communication available to achieve all of these benefits.” Pet. 20. Petitioner argues one such benefit would be increasing the speed of communications. *Id.* (citing Ex. 1113, 7:28; Ex. 1114, 2 (right): 13–18); *id.* at 17. Citing the testimony of its declarant, Mr. Savolainen, Petitioner argues that “[a]dapting the Cell-Eye to use wireless packet switched communication would have involved nothing more than following the evolution of wireless technology to the next generation of 2G+ standards, which was a matter of routine engineering and would have yielded predictable results.” *Id.* at 20–21 (citing Ex. 1105 ¶ 105). Mr. Savolainen explains:

It would have been obvious to a person of ordinary skill in the art to follow the evolution of wireless technology from 2G to 2G+ to use the most advanced packet-switched communication protocol available at the time to achieve these benefits. For example, this would have increased the speed of communication from the Cell-Eye’s current speeds of up to 9.6 kbit/s (Ex. 1113, 7:28) to speeds of up to several tens of kbit/s

(Ex. 1114, 2(right):13-18). Implementing wireless packet switched communication was a matter of routine engineering that was specified by the GSM standard, a global standard unifying wireless protocols across the globe, which instructed engineers of exactly how to configure devices using GPRS. In fact, the '717 Patent gives no instruction or explanation as to how to implement wireless packet switched or GPRS technologies, indicating that this would have been the routine knowledge of a person of ordinary skill in the art.

Ex. 1105 ¶ 105.

We are persuaded that the evidence of record demonstrates that there were known benefits to using GPRS over then conventional GSM technology. For example, Bettstetter discloses that “GPRS is a new bearer service for GSM that greatly improves and simplifies wireless access to packet data networks, e.g., to the Internet.” Ex. 1114, 1:3–5 (right col.). Bettstetter further discloses that “GPRS improves the utilization of the radio resources, offers volume-based billing, higher transfer rates, shorter access times, and simplifies the access to packet data networks.” Ex. 1114, 2:1–5 (left col.). Mr. Savolainen identifies increased speed of communication as one such benefit. Ex. 1105 ¶ 105. We credit this testimony because Bettstetter expressly discloses: “In conventional GSM, the connection setup takes several seconds and rates for data transmission are restricted to 9.6 kbit/s. GPRS in practice offers session establishment times below one second and ISDN-like data rates up to several ten kbit/s.” Ex. 1114, 1:14–18 (right col.). Van Bergen describes its data communication speed as up to 9600 bits per second. Ex. 1113, 7:28.

We find that GPRS utilizes packet-switched communications. *See* Ex. 1105 ¶ 104; *see also* Ex. 1114, 1:5–7 (right col.) (GPRS “applies a packet radio principle to transfer user data packets in an efficient way between

GSM mobile stations and external packet data networks.”). We find that the benefits of GPRS, such as increased speed, would have motivated a person of ordinary skill in the art to combine the teachings of Van Bergen and Bettstetter, as asserted by Petitioner. *See* Pet. 20–21 (citing Ex. 1105 ¶ 105). Based on this, we conclude that it would have been obvious to a person of ordinary skill in the art to adapt the CELL-EYE system to use packet-switched technology, such as GPRS, to receive wireless packet-switched data messages.

Patent Owner argues “Petitioners fail to establish any credible apparent reason for why a person of ordinary skill would have been motivated to make such a combination.” PO Resp. 34. According to Patent Owner, “Petitioners assert that in 2000 a ‘technology trend’ existed under the new GSM 2.5G standard [for] adding GPRS capabilities to telemetry products, but they neither provide evidence of such a trend nor identify any such products that then supported GPRS.” PO Resp. 35. We disagree that Petitioner offers no evidence to support its assertions because Petitioner’s declarant provides testimony that “[t]elemetry products, like all telecommunication devices, generally used the most recent and advanced communication protocols available at the time” and that “[a] person of ordinary skill in the art working in the field of telecommunications at the time of the earliest priority date would have been aware of all of these wireless protocols and would have known how to build devices that used them.” Ex. 1105 ¶¶ 47, 49 (quoted at Dec. on Inst. 26–27). Bettstetter further discloses, as of its publication in 1999, that “GPRS is a new bearer service for GSM.” Ex. 1114, 1:3 (right col.).

Patent Owner further contends:

Petitioners also argue that a person of ordinary skill would have been motivated to try to increase wireless transmission speeds, but they fail to show why it would have been obvious to do so by adding incompatible GPRS protocols to the CELL-EYE system rather than simply adopting the new high speed circuit-switched data protocols that were also part of the GSM 2.5G standards and were already fully compatible with the CELL-EYE.

PO Resp. 35. The law requires Petitioner to prove that the claimed 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. *See KSR*, 550 U.S. at 406; *see also* 35 U.S.C. § 316(e) (“In an inter partes review instituted under this chapter, the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence.”). Petitioner has done so here, as explained above. Petitioner is not required to prove that its proposed modification would have been more obvious than other known variants, as Patent Owner’s argument suggests. The existence of this alternative solution identified by Patent Owner simply demonstrates that a person of ordinary skill in the art would recognize there are a number of options to pursue, one of which would have had the benefits cited by Petitioner. *See KSR*, 550 at 421.

b. “Processing module for authenticating”

Claims 1 and 29 further recite that the “programmable communicator device” has “a processing module for authenticating one or more wireless transmissions sent from a programming transmitter and received by the programmable communicator device by determining if at least one transmission contains a coded number.” Petitioner contends Van Bergen’s “controller” is a “processing module” that authenticates incoming transmissions from the remote messaging unit (RMU), i.e., the claimed

“programming transmitter,” by determining if at least one transmission contains a PIN code, i.e., the claimed “coded number.” Pet. 21–22 (citing Ex. 1113, 4:11–20, 4:37–42, 6:39–44, 6:50–51, 10:30–35).

We are persuaded by Petitioner’s contention, and we find Van Bergen describes the claimed “processing module for authenticating.” This finding is supported by Van Bergen’s disclosure that “[t]he controller and memory unit 14 comprises a micro controller with nonvolatile memory and associated digital circuits and software to . . . compare a PIN code received from the RMU with the code stored in memory and generate[] the AT commands to send a confirmation message to the RMU if the PIN code is accepted.” Ex. 1113, 6:42–51. Van Bergen further discloses that “any communication from a hand-held GSM cellular phone to the CELL-EYE is a secure communication conditioned on the use of two valid PIN codes, one for activating the hand-held GSM unit and the other for communicating to the unattended GSM mobile unit.” Ex. 1113, 4:13–16. Furthermore, Van Bergen describes one such communication from a remote device to the CELL-EYE system as “an incoming call carrying a coded Short Message Service (SMS) message.” Ex. 1113, 2:25–26.

c. “Store at least one telephone number or IP address”

Claims 1 and 29 further recite:

wherein the programmable communicator device is configured to use a memory to store at least one telephone number or IP address included within at least one of the transmissions as one or more stored telephone numbers or IP addresses if the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number.

Petitioner contends Van Bergen discloses that the system updates stored telephone numbers if the controller receives a valid PIN code. Pet. 23–24 (citing Ex. 1113, 2:51–3:4, 6:42–44, 6:50–51, 7:1–3, 10:33–34, 11:14–16). According to Petitioner, “[t]he Cell-Eye receives multiple transmissions including the PIN code (‘coded number’) in step (d) and the telephone number in step (g).” Pet. 24 (citing Ex. 1113, 6:50–51, 7:1–3).

We are persuaded that Van Bergen describes updating the stored telephone numbers to which the system is configured to and permitted to send outgoing transmissions only after determining that a PIN code, i.e., a “coded number,” is included in one of the transmissions. This is supported by Van Bergen’s disclosure that “[o]nly after the provision of a valid PIN code will the installed GSM mobile unit permit the user to activate or deactivate the said CELL-EYE system or *change any of the stored numbers, codes or parameters of the system.*” Ex. 1113, 11:14–16 (emphasis added). However, as discussed above in the section addressing claim construction, we determine that the claims, as properly interpreted, require inclusion in the same transmission of both the coded number and the telephone number to be stored. Therefore, Petitioner’s contention that Van Bergen discloses reception of the coded number and the telephone number to be stored in separate transmissions fails to meet the claim limitation.

However, Petitioner also contends that it would have been obvious to include the PIN code and the telephone number in the same transmission. Pet. 24–25 (citing Ex. 1105 ¶ 115). In particular, Petitioner contends a person of ordinary skill in the art would have been motivated to include the PIN code in the same transmission as the new telephone number to be stored

for security purposes. Pet. 25. Petitioner's contention is supported by the testimony of its declarant, Mr. Savolainen, who explains that it

would have been obvious to send the PIN code and telephone number in the same (one) or separate (multiple) transmissions, depending on the desired level of security. For higher security applications in which the Cell-Eye system is monitoring an alarm system protecting highly-valued property or sensitive information (e.g., a bank), a person of ordinary skill in the art would have wanted the coded number in every transmission in order to "provide better security" ([Ex. 1121,] 164:10-21), and would thereby have combined the coded number in the same trans[m]ission as the telephone number. This would ensure that every transmission was received from an authenticated sender, and not interjected by a hacker after the PIN code had already been authenticated in a separate transmission. In contrast, for lower priority applications (e.g., monitoring a domestic appliance), it would have been sufficient to authenticate the coded number once at the beginnning [sic] of a transmission session and a person of ordinary skill in the art would thereby have sent the coded number in a separate trans[m]ission as the subsequent programming transmissions including the telephone number. (*Id.*).

Ex. 1105 ¶ 115.

We find that a person of ordinary skill in the art would have been motivated to put the coded number in the same transmission as the telephone number to provide better security, consistent with the evidence of record. *See id.* And we conclude that it would have been obvious for a person of ordinary skill in the art to put the PIN code of Van Bergen into the same transmission as the telephone number to be stored, such that the controller of Van Bergen would authenticate this single transmission by determining that it includes the PIN code. *See* Ex. 1113, 11:14–16 ("Only after the provision of a valid PIN code will the installed GSM mobile unit permit the user to

activate or deactivate the said CELL-EYE system or change any of the stored numbers, codes or parameters of the system.”).

Patent Owner counters:

Petitioners also argue that it would have been obvious for a person of ordinary skill in the art to borrow the “single transmission” teachings from the GSM industry standards and use them to modify the operations of Van Bergen’s CELL-EYE system. (Petition, 25.) Yet this argument fails for the same reason -- Petitioners provide no evidence that any identifiable GSM industry standards actually disclosed such teachings in the first place or to provide corroborated evidence that such standards were in fact prior art. As such, Petitioners fail to meet their statutory obligation under § 312(a)(3) to identify “with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.”

PO Resp. 30.

We disagree with Patent Owner’s contention that the Petition fails to meet the requirements of section 312(a)(3). In its contention of obviousness as to claim 1, the Petition clearly sets forth the rationale for why it would have been obvious to include the coded number and the telephone number in the same transmission. Pet. 24–25. In support of its contention, Petitioner cites the testimony of its declarant, which we find to be credible evidence supporting Petitioner’s contention. See Pet. 24–25 (citing Ex. 1105 ¶ 115).

Furthermore, our conclusion of obviousness does not depend on “borrow[ing] the ‘single transmission’ teachings from the GSM industry standards,” as Patent Owner contends. See PO Resp. 30. Patent Owner appears to be referring to Petitioner’s contention that “[a]pplying this known capability of the globally recognized GSM standard was not inventive.” See Pet. 25. The Petition provides a reason why a person of ordinary skill in the

art would have been motivated to put the PIN and the telephone number in the same transmission—to achieve better security. *See* Pet. 25. This is articulated reasoning with rational underpinning supported by evidence in the record underlying the contention of obviousness.

Patent Owner further argues that Petitioner’s proposed modification to use a “single transmission” having both the coded number and the telephone number “directly contradicts arguments Petitioners made elsewhere that the CELL-EYE system was already ‘sufficiently impenetrable to hackers’ due to its use of a unique PIN code for security purposes.” PO Resp. 32 (citing Pet. 23, 25). The argument to which Patent Owner refers is Petitioner’s contention that making a PIN code hard to guess improves security. Pet. 23. Petitioner’s proposed modification of using a single transmission addresses a different security concern for high security applications because it “would have ensured that the telephone number was received from an authenticated sender, and not interjected by a hacker after the PIN code had already been authenticated in a separate transmission.” Pet. 25 (citing Ex. 1105 ¶ 115). Petitioner’s argument regarding PIN code complexity does not undermine its rationale to improve security further by using a single transmission, rather than multiple transmissions, to carry the PIN and the telephone number to be stored.

d. “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions”

Claims 1 and 29 further recite that the “one or more stored telephone numbers or IP addresses” referred to in the authentication limitations discussed above are “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless

transmissions,” which we interpret above to mean “numbers to which the programmable communicator device is capable of sending outgoing wireless transmissions and permitted to send outgoing wireless transmissions.”

Petitioner contends Van Bergen describes that the stored numbers are “numbers to which the programmable communicator device is configured to and permitted to send outgoing wireless transmissions,” given that interpretation. Pet. 25–26 (citing Ex. 1113, 2:11–12, 3:2–4, 7:2–3, 11:14–16). We are persuaded by Petitioner’s contention, and we find Van Bergen discloses the limitation. We further find that, even under Patent Owner’s proposed interpretation, the stored numbers in Van Bergen “function in a manner that limits the programmable communicator to sending one or more types of outgoing wireless transmissions to *only* those telephone numbers or IP addresses contained in the list.” See PO Resp. 12. Our findings are supported by the evidence of record, as explained below.

First, we find Van Bergen describes that the stored numbers are numbers to which the CELL-EYE system is “configured to . . . send outgoing wireless transmissions.” Van Bergen describes these numbers as “the numbers that must be dialled when an alarm condition is detected.” Ex. 1113, 3:3–4 (cited at Pet. 26). Van Bergen discloses that remote programming is used to configure the CELL-EYE system with the numbers to call:

Such programming could include periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters such as the numbers that must be dialled when an alarm condition is detected, how frequently such calls need to be repeated and what to do if connection to a particular called number is not available at the time.

Ex. 1113, 3:2–5. Therefore, Van Bergen’s disclosure that the CELL-EYE System is programmed with stored numbers that it must dial when an alarm condition is detected teaches that the stored numbers are numbers to which the device is configured to send, i.e., capable of sending outgoing wireless transmissions.

Second, we find Van Bergen describes that the stored numbers are numbers to which the CELL-EYE system is “permitted to send outgoing wireless transmissions.” Indeed, these are numbers that “must be dialled when an alarm condition is detected” (Ex. 1113, 3:3–4), and, therefore, Van Bergen teaches that the CELL-EYE system is permitted to dial these stored numbers. Importantly, Patent Owner does not dispute that Van Bergen teaches the limitation under the interpretation set forth in our Decision on Institution and adopted herein. *See* Reply 11.

Rather, Patent Owner argues that “Van Bergen contains no disclosures or teachings whatsoever that this alarm notification calling list would function as a *restrictive* outbound calling list limiting the CELL-EYE system to sending outbound transmissions to *only* those numbers contained on the list.” PO Resp. 33. As discussed above in the section addressing claim construction, we do not agree that Patent Owner’s proposed interpretation is the broadest reasonable interpretation. However, even under Patent Owner’s interpretation, we find Van Bergen discloses the CELL-EYE system is limited to sending a type of outgoing wireless transmission to only those numbers stored in the communicator.

Van Bergen describes a CELL-EYE system depicted in Figure 2 having “an installed GSM mobile unit without [a] keypad and with a linked modem.” Ex. 1113, 3:30–31. In this configuration, remote programming is

necessary because “[t]he CELL-EYE does not have a keypad to activate it or set any parameters.”⁹ Ex. 1113, 4:12–13; *see* Ex. 1113, 4:9–10 (“The CELL-EYE system can only be activated, de-activated or programmed via an incoming call to the ALU 16 and its associated modem.”).¹⁰ Because Van Bergen describes that the CELL-EYE system does not have a keypad for setting parameters (Ex. 1113, 4:12–13), Van Bergen describes how to remotely program the device, including programming “alarm parameters such as the numbers that must be dialled when an alarm condition is detected.” Ex. 1113, 2:51–3:4. Van Bergen describes that not having a keypad “ensures that the CELL-EYE can be hidden inside a vehicle and that any communication from a hand-held GSM cellular phone to the CELL-EYE is a secure communication conditioned on the use of two valid PIN codes.” Ex. 1113, 4:13–15.¹¹ By its very nature, the keyboard-less CELL-EYE system is restricted to calling only those numbers it is programmed to

⁹ Notably, this disclosure of Van Bergen is similar to the exemplary embodiment described in the Specification of the ’717 patent. *See* Ex. 1101, 7:42–46 (stating that “[t]he programmable communicator preferably comprises a basic mobile telephone circuit having no keypad or display”).

¹⁰ In this proceeding, Patent Owner has acknowledged that the “CELL-EYE system can only be . . . programmed via an *incoming call* to the ALU 16 and its associated modem.” Prelim. Resp. 36 (quoting Ex. 1113, 4:9–10).

¹¹ We note that Van Bergen also discloses an electromechanical embodiment of the CELL-EYE system having a keypad. *See* Ex. 1113, 3:33–36, 8:1–9:12, Fig. 3. In this embodiment, Van Bergen discloses that the device is limited to sending outgoing wireless transmissions to a certain number. In particular, “solenoids of said electromechanical device move in such a way as to depress the corresponding keys on the keypad of the cell-phone,” and “the controller is programmed to energize the solenoids in such a way as to initiate transmission of an outgoing call and a GSM SMS message to the owner’s RMU.” Ex. 1113, 8:20–24. Therefore, in this embodiment, the device also is limited to dialing a particular number.

call. Thus, one type of outgoing wireless communication includes calls resulting from “when an alarm condition is detected,” and Van Bergen describes that the CELL-EYE system is limited to sending this type of outgoing wireless transmission to the numbers that are pre-programmed, i.e., “numbers that must be dialled when an alarm condition is detected.” Ex. 1113, 3:4.

Therefore, we find that the stored numbers in Van Bergen function in a manner that limits the programmable communicator to sending a type of outgoing wireless transmission, i.e., an outgoing wireless transmission in response to an alarm condition, to *only* those stored telephone numbers, even under Patent Owner’s proffered interpretation of the “permitted to” language. See PO Resp. 12.

We find Van Bergen describes that the pre-programmed numbers are numbers to which the programmable communicator device is both (1) configured to send outgoing wireless transmissions and (2) permitted to send outgoing wireless transmissions. We further find Van Bergen describes that the CELL-EYE system is restricted to sending alarm notifications to numbers that are pre-programmed into the list because there is no other mechanism described for this to occur. Thus, under either the interpretation adopted herein or Patent Owner’s proposed interpretation, we are persuaded that Van Bergen teaches the limitation.

e. “Identity module”

Claims 1 and 29 further recite: “wherein the programmable communicator device is configured to use an identity module for storing a unique identifier that is unique to the programmable communicator device.” Petitioner contends Van Bergen’s description of the use of a Subscriber

Identity Module (SIM) card in the CELL-EYE system discloses this limitation. Pet. 26 (quoting Ex. 1113, 7:34–35). We are persuaded by Petitioner’s contention, and we find Van Bergen’s description of the use of a SIM card in the CELL-EYE system discloses that “the programmable communicator device is configured to use an identity module for storing a unique identifier that is unique to the programmable communicator device.” This finding is supported by Van Bergen’s disclosure of an alarm linked GSM mobile unit that “is a fully type approved cellular phone. It has the facility for an internal or external SIM card.” Ex. 1113, 7:34–35; Ex. 1105 ¶¶ 117–118.

f. Claim 29 – SMS data message

Claim 29 recites: “wherein the one or more wireless transmissions from the programming transmitter containing instructions to program the stored number comprise one or more short message service (SMS) data messages.” Petitioner contends Van Bergen teaches receiving programming instructions, including instructions to program the stored numbers to be dialed in the case of an alarm, using “validated incoming calls” that include both DATA and SMS messages. Pet. 43 (citing Ex. 1113, Abstract, 2:25–26, 2:51–3:2, 7:38–39, 11:12–14).

We are persuaded by Petitioner’s contention, and we find Van Bergen teaches that “the one or more wireless transmissions from the programming transmitter containing instructions to program the stored number comprise one or more short message service (SMS) data messages.” This finding is supported by Van Bergen’s disclosure of remote programming via incoming calls, including via SMS messages. See Ex. 1113, Abstract, 2:25–26, 2:51–

3:2, 7:38–39. In the section describing “Remote programming,” Van Bergen discloses:

A further advantage of the two-way communication between an owner and the protected [sic] which is possible with the present invention, is the facility which allows the owner to *remotely activate or program the security system by means of a telephone call from the owner’s cellular phone to the CELL-EYE* installed in the vehicle or property. Such programming could include periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters such as *the numbers that must be dialled when an alarm condition is detected*.

Ex. 1113, 2:51–3:4 (emphasis added). This section demonstrates Van Bergen discloses programming the stored numbers via an incoming telephone call. Van Bergen further discloses a specific example of “an incoming call carrying a coded Short Message Service (SMS) message” from a remote device to activate the CELL-EYE system. Ex. 1113, 2:25–26. Van Bergen further discloses “[t]he GSM mobile unit will be configured for voiceless DATA and SMS mode operation.” *Id.* at 7:38–39. Van Bergen still further discloses that the CELL-EYE system has “a modem linked to said GSM mobile unit for the reception and transmission of DATA and SMS messages via the GSM mobile network.” Ex. 1113, 10:12–13. Therefore, Van Bergen discloses both transmission and reception of SMS messages, it discloses incoming telephone calls to program the stored number, and it discloses incoming calls carrying an SMS message.

Patent Owner argues: “Van Bergen teaches that *only* circuit-switched data calls are to be used for sending programming instructions to the CELL-EYE,” not SMS data messages. PO Resp. 56–57; *see also* PO Resp. 36–42. In support of its argument, Patent Owner addresses Van Bergen’s express

disclosure of “an incoming call carrying a coded Short Message Service (SMS) message” (Ex. 1113, 2:26), arguing that “this sentence is *not* describing an SMS data message or an SMS data message transmission. Rather, it appears to be describing a situation where a unit of data formatted to merely resemble an SMS message is included within the data stream of a circuit-switched data call.” PO Resp. 41.

These arguments, which rely on an alleged distinction between a circuit-switched call and an SMS data message, are refuted by the following disclosure of the ’717 patent: “In the pre-programming phase, the communicator is programmed with the number it can call which comprises a unique code. By way of example only, the invention is now described in the context of the GSM mobile telecommunications standard using the *Short Message Service or SMS circuit-switched data call*.” Ex. 1101, 9:23–29 (emphasis added) (cited at Dec. on Inst. 33). Therefore, the ’717 patent contemplates the inclusion of an SMS message within a circuit-switched data call, which is what Van Bergen discloses even under Patent Owner’s characterization. See PO Resp. 41; Reply 19.

Patent Owner further argues “Van Bergen expressly distinguishes ‘**Remote activation**’ from ‘**Remote programming**’ by addressing these topics in separate sections of the specification.” PO Resp. 41–42 (citing Ex. 1113, 2:25–28, 2:51–3:7, 4:9–20). Patent Owner argues that the particular sentence in which Van Bergen discloses “an incoming call carrying a coded Short Message Service (SMS) message” is related to activation of the device, not programming the device, and, therefore, Patent Owner argues Van Bergen does not disclose reception of programming instructions in an SMS data message. PO Resp. 41–42 (citing Ex. 1113,

2:25–26). We disagree with Patent Owner’s contention. In the “Summary of the Invention” section, Van Bergen discloses: “Remote activation: The controller of the said CELL-EYE system is designed to be activated by remote control via an incoming call carrying a coded Short Message Service (SMS) message.” Ex. 1113, 2:25–26. In the “Detailed Description” section, Van Bergen further discloses: “Remote activation: The CELL-EYE system can only be activated, de-activated or *programmed* via an incoming call to the ALU 16 and its associated modem.” Ex. 1113, 4:9–10 (emphasis added). Therefore, Van Bergen includes remote programming in its further description of “remote activation.”

Van Bergen’s disclosure of programming “via an incoming call” and its disclosure of “an incoming call carrying a coded Short Message Service (SMS) message” teach instructions to program, including programming stored numbers, via an incoming call having an SMS data message. See Ex. 1113, 2:25–26. 4:9–10. Consistent with the evidence in this trial, we find Van Bergen teaches that “the one or more wireless transmissions from the programming transmitter containing instructions to program the stored number comprise one or more short message service (SMS) data messages,” as recited in claim 29. See Ex. 1105 ¶¶ 162–64.

g. Claim 1 – GPRS or packet switched

Claim 1 recites: “wherein the one or more wireless transmissions from the programming transmitter comprises a General Packet Radio Service (GPRS) or other wireless packet switched data message.” As explained above, Petitioner argues Van Bergen discloses wireless communications using GSM but does not disclose that the data received by the CELL-EYE system is “packet switched.” Pet. 14, 17, 19. Petitioner

then argues that the combination of Van Bergen and Bettstetter teaches the use of GPRS packet-switched communications in GSM networks. *Id.* at 19–21, 26. As discussed above, we conclude that it would have been obvious to a person of ordinary skill in the art to adapt the CELL-EYE system to use packet-switched technology, such as GPRS, to receive wireless packet-switched data messages, as asserted by Petitioner. *See* Pet. 19–21.

Patent Owner argues:

What Van Bergen actually teaches is that *only* circuit-switched data calls – and *not* SMS data message transmissions – are to be used for sending programming instructions to the CELL-EYE. Because Van Bergen discloses that only one type of supported wireless data messaging transmissions should be used for sending programming instructions and not others, there is no basis for Petitioners’ argument that Van Bergen would implicitly teach the use of GPRS data messages for sending programming instructions were the CELL-EYE system to be modified to add support for GPRS protocols.

PO Resp. 37.

Petitioner, however, does not argue that “Van Bergen would implicitly teach the use of GPRS data messages.” Rather, Petitioner expressly acknowledges Van Bergen does not disclose packet-switched communication. *See* Pet. 19 (“The only element missing in Van Bergen was ‘packet switched.’”). Petitioner relies on Bettstetter for teaching packet-switched communications. Pet. 19–21, 26.

As we explain above in the discussion of the “programmable interface” limitation, we conclude that it would have been obvious to a person of ordinary skill in the art to adapt the CELL-EYE system to use packet-switched technology, such as GPRS, to receive wireless packet-switched data messages. As also discussed in detail above, Van Bergen

discloses that remote programming includes programming “the numbers that must be dialled when an alarm condition is detected,” and it discloses that “any communication from a hand-held GSM cellular phone to the CELL-EYE is a secure communication conditioned on the use of two valid PIN codes, one for activating the hand-held GSM unit and the other for communicating to the unattended GSM mobile unit.” Ex. 1113, 3:2–4, 4:13–16. We, therefore, disagree with Patent Owner’s argument that the combination of Van Bergen and Bettstetter does not “teach the use of GPRS messages for sending programming instructions to the CELL-EYE as the claims require.” See PO Resp. 36.

h. “Process data”

Claim 1 further recites: “wherein the programmable communicator device is configured to process data received through the programmable interface from the at least one monitored technical device in response to programming instructions received in an incoming wireless packet switched data message.” Claim 29 recites: “wherein the programmable communicator device is configured to process data received through the programmable interface from the at least one monitored technical device in response to programming instructions received in at least one incoming short message service (SMS) data message or packet switched data message.”

Petitioner contends Van Bergen discloses that the controller of the CELL-EYE system processes data received from the alarm sensor interface, which is received from a monitored technical device, such as a vehicle or property security system. Pet. 27 (citing Ex. 1113, 2:1–3, 6:29–31, 6:39–42; Ex. 1105 ¶¶ 120–22). We are persuaded by Petitioner’s contention, and we find Van Bergen discloses that “the programmable communicator device is

configured to process data received through the programmable interface from the at least one monitored technical device.” This finding is supported by Van Bergen’s disclosure that “[t]he controller and memory unit 14 which form part of the said CELL-EYE system is intended to control the operation of the CELL-EYE system through . . . the processing of DATA it receives from either the alarm sensor interface 13 or the ALU.” Ex. 1113, 6:39–42. Furthermore, Van Bergen discloses that alarm outputs from the vehicle or property security system “are detected and converted to digital form by the alarm sensor interface 13” of the CELL-EYE system. *Id.* at 5:7–10.

Petitioner further contends that Van Bergen’s disclosure of remotely programming “alarm parameters” teaches that the processing of data is in response to remote programming instructions received in an incoming wireless data message. Pet. 27 (citing Ex. 1113, 2:51–3:3, 8:49–50, 11:21); Ex. 1105 ¶¶ 123–25. And, Petitioner contends that programming by incoming wireless packet-switched messages would have been obvious in view of the teachings of Bettstetter. Pet. 19–21, 28.

We are persuaded by Petitioner’s contentions, and we find Van Bergen teaches processing the received data in response to remote programming instructions received in an incoming wireless transmission, such as a data message. This finding is supported by Van Bergen, which discloses that the CELL-EYE system has “a controller with signalling means for generating an outgoing call and a SMS message from the installed GSM mobile unit to a remote GSM cellular phone *in response to a number of alarm conditions* which correspond to irregular or willful disturbance of the vehicle or property.” Ex. 1113, 2:1–3 (emphasis added). Van Bergen

discloses remote programming of “alarm parameters,” which correspond to the “alarm conditions”:

A further advantage of the two-way communication between an owner and the protected which is possible with the present invention, is the facility which allows the owner to *remotely activate or program* the security system by means of a telephone call from the owner’s cellular phone to the CELL-EYE installed in the vehicle or property. Such programming could include periodic customization of the level of security appropriate for a particular situation and *presetting alarm parameters* such as the numbers that must be dialed when an *alarm condition* is detected, how frequently such calls need to be repeated and what to do if connection to a particular called number is not available at the time.

Ex. 1113, 2:51–3:5 (emphases added). Therefore, we find Van Bergen teaches processing data received from the alarm sensor interface based on alarm parameters that are programmed remotely via an incoming wireless transmission.

For the reasons discussed above, we find a person of ordinary skill in the art would have been motivated to combine the teachings of Van Bergen and Bettstetter, as asserted by Petitioner, and we conclude that it would have been obvious to a person of ordinary skill in the art to adapt the CELL-EYE system to use packet-switched technology, such as GPRS, to receive wireless packet-switched data messages, including those programming the “alarm parameters.”

Patent Owner argues that the programming instructions cited by Petitioner “do *not* cause controller 14 to perform data processing” but “only come into play *after* controller 14 has already processed data or otherwise ascertained which particular alarm conditions may exist.” PO Resp. 44. According to Patent Owner, “these programming instructions inform

controller 14 about what *subsequent actions* to take in a situation where its data processing determinations have already previously been undertaken and completed.” PO Resp. 44. We disagree because such “subsequent actions” are within the scope of “data processing.” Van Bergen discloses that, when an alarm condition is detected by virtue of data received through the alarm sensor interface, the controller processes this data by generating an outgoing transmission to a programmed number. See Ex. 1113, 2:1–3, 3:2–4, 5:7–10, 6:41–42, 7:8–9. For example, Van Bergen discloses:

The CELL-EYE system is designed to be linked to input devices installed in the same property of vehicle namely the disturbance sensors 11 which form part of the vehicle or property security system 12 which has alarm outputs. The alarm outputs are detected and converted to digital form by the alarm sensor interface 13 which forms part of the CELL-EYE system.

Ex. 1113, 5:7–10. The controller performs “processing of DATA it receives from either the alarm sensor interface 13 or the ALU,” and it “generate[s] the SMS codes to indicate to a preprogrammed RMU the nature of the alarm which initiated the call.” Ex. 1113, 6:41–42, 7:8–9. Therefore, actions taken by the controller in response to an alarm, such as generating an outgoing transmission, teach data processing, and Van Bergen discloses that such data processing is performed in response to received programming instructions. As such, we also disagree with Patent Owner’s contention that the programming instructions in Van Bergen do not “in any way direct controller 14 about whether or in what manner to perform data processing on the data received from a ‘monitored technical device’” (PO Resp. 44) because the data processing is performed on data received from sensors through the alarm sensor interface. See Ex. 1113, 6:41–42, 7:8–9.

i. Conclusion – Claims 1 and 29

Petitioner has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 29 would have been obvious to a person of ordinary skill in the art in view of the teachings of Van Bergen and Bettstetter.

4. Dependent Claims 2, 3, 5–18, 22, and 23

Petitioner contends that the subject matter of dependent claims 2, 3, 5–18, 22, and 23 would have been obvious over the combination of Van Bergen and Bettstetter, providing analysis and arguments to explain how the cited prior art references teach the claimed subject matter and why a person of ordinary skill in the art would have combined the teachings of the references to arrive at the claimed subject matter. Pet. 28–42.

We have analyzed Petitioner’s contentions and evidence in support thereof and Patent Owner’s arguments. We find the evidence supports Petitioner’s contentions that claims 2, 3, 5–18, 22, and 23 are unpatentable. We conclude that the subject matter of dependent claims 2, 3, 5–18, 22, and 23 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter as asserted by Petitioner and as further explained below.

a. Claims 5 and 12

Claim 5 recites (emphasis added): “A programmable communicator device according to claim 1 further configured to request that an at least one monitored technical device send data through the programmable interface *for processing* by the programmable communicator device in response to programming instructions received in an incoming wireless packet switched

data message.” Claim 12 recites similar subject matter except it replaces the words “for processing” (emphasized above in claim 5) with “for receipt.”

Petitioner contends Van Bergen discloses a mode 2 procedure in which the CELL-EYE system can be remotely interrogated for location data. Pet. 29 (citing Ex. 1113, 4:43–47; Ex. 1105 ¶ 129). Petitioner contends

[i]t would have been obvious to a [person of ordinary skill in the art] to configure the mode 1 alarm procedure to interrogate the sensors 11, as in the mode 2 location procedure, so that a user could poll sensors 11 whenever the user wanted information on the status of the vehicle or property, for example, to check if he or she left the lights on in the vehicle.

Pet. 29–30 (citing Ex. 1113, 6:25; Ex. 1105 ¶ 129).

We are persuaded by Petitioner’s contention, which is supported by evidence in the record. *See* Ex. 1105 ¶ 129. We find Van Bergen discloses a controller that is configured to request data from the alarm linked unit (ALU) because it discloses in mode 2 operation that “the controller of the CELL-EYE system interrogates the ALU via the modem to determine the location of the nearest repeater as indicated by the GSM mobile phone network.” Ex. 1113, 4:44–45. Petitioner proffers the testimony of Mr. Savolainen as evidence for why a person of ordinary skill in the art would have been motivated to modify Van Bergen to configure the CELL-EYE system to request data from monitored technical devices, such as sensors 11. Pet. 29–30 (citing Ex. 1105 ¶ 129). Mr. Savolainen testifies that it would have been obvious to configure the CELL-EYE in this manner “so that a user could poll sensors 11 whenever the user wanted information on the status of the vehicle or property, for example, to check if he or she left the lights on in the vehicle.” Ex. 1105 ¶ 129 (citing Ex. 1113, 6:25). We find this evidence establishes a reason that a person of ordinary skill in the art

would have been motivated to configure Van Bergen as proposed by Petitioner.

Patent Owner argues (1) that Van Bergen's mode 2 operations do not relate to requested data from a monitored device through the programmable interface and (2) that "there is absolutely no suggestion in Van Bergen that disturbance sensors 11 would be anything other than unintelligent output devices incapable of receiving, understanding, or responding to a data request." PO Resp. 46–47 (citing Ex. 1113, 5:35–6:6).

As to Patent Owner's first argument, although we agree that mode 2 operations involve requesting data from the ALU, not through the alarm sensor interface ("programmable interface"), Petitioner contends that it would have been obvious to configure the mode 1 alarm procedure, which does involve receiving data from monitored technical devices (e.g., disturbance sensors 11 and vehicle or property security system 12) through the programmable interface (alarm sensor interface 13) (Ex. 1113, 4:21–25), to request data based on mode 2 operation, as discussed above. Therefore, Patent Owner's argument is not responsive to Petitioner's contention of obviousness.

As to Patent Owner's second argument, we disagree because Van Bergen broadly describes that "disturbance sensors 11 may include any appropriate sensors which could detect irregular or willful disturbance of the vehicle or property," and it describes "the disturbance sensors 11" as "form[ing] part of the vehicle or property security system 12 which has alarm outputs." Ex. 1113, 5:41–42, 5:8–9. Van Bergen describes security system 12, of which the disturbance sensors form a part, as receiving input from a remote device, such as when "a button on a coded remote activation

transmitter has been pressed to transmit an activation signal to a receiver which forms part of the said security system.” Ex. 1113, 6:11–12.

We conclude that the subject matter of claims 5 and 12 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶ 129.

b. Claim 8

Claim 8 recites: “A programmable communicator device according to claim 6 further configured to determine whether a data request initiated by the monitoring device includes a required access code in response to programming instructions received in an incoming wireless packet switched data message.” Petitioner contends the subject matter of claim 8 is rendered obvious by Van Bergen’s disclosure of a request for location data through mode 2 operation that requires the remote user to enter a “code” in combination with Bettsetter’s disclosure of packet-switched communication. Pet. 31–32 (citing Ex. 1113, 4:43–47, 8:49–50).

We are persuaded by Petitioner’s contention because Van Bergen discloses that activating mode 2 requires the user to enter a code, after which location data is returned:

- e) the operator using the RMU [(Remote Message Unit)] enters a code to activate mode 2 operation of the CELL-EYE system,
- f) the controller of the CELL-EYE system interrogates the ALU via the modem to determine the location of the nearest repeater as indicated by the GSM mobile phone network,
- g) the controller of the CELL-EYE system converts the returned location to the AT codes required for initiating a SMS message to the RMU via the modem and ALU [(Alarm Linked Unit)]

h) steps f) and g) are repeated at preprogrammed intervals until the call is terminated by the RMU.

Ex. 1113, 4:43–48.

Patent Owner argues (1) that the code to activate mode 2 operation in Van Bergen is not a “programming instruction” and (2) that, even if the code is a programming instruction, “it is not an instruction that causes controller 14 to send data to the remote monitoring device as the ‘in response to’ language of claim 8 would require.” PO Resp. 48.

As to Patent Owner’s first argument, we disagree, and we find that Van Bergen’s disclosure of activating mode 2 operation teaches “a data request initiated by the monitoring device” because mode 2 activation is a request for location data. *See* Ex. 1113, Abstract, 4:30–48. Furthermore, we find that the incoming transmission to initiate mode 2 activation is a command that teaches a “programming instruction” because it instructs the programmable communicator device (the CELL-EYE system) to perform an operation. *See* Ex. 1113, 4:35–48; Ex. 1105 ¶ 135.

As to Patent Owner’s second argument, claim 8 is directed to “a data request.” Claim 8 does not recite that the controller must send data resulting from the data request. We find activation of mode 2 operation teaches such a data request, specifically a request for location data. *See* Ex. 1113, Abstract, 4:30–48.

We conclude that the subject matter of claim 8 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶ 135.

c. Claim 10

Claim 10 recites:

A programmable communicator device according to claim 1 further configured to determine whether the processed received data indicates a change in status of the at least one monitored technical device that crosses a threshold parameter, or that otherwise indicates an alarm condition in response to programming instructions received in an incoming wireless packet switched data message.

We are persuaded by Petitioner’s contention that the combination of Van Bergen and Bettstetter teaches the limitations of claim 10. Pet. 33–34 (citing Ex. 1113, Abstract, 2:1–3, 2:25–26, 2:51–3:3, 6:29–31, 8:49–50, 11:9–11, 11:20–21). In particular, we find Van Bergen teaches “determin[ing] whether the processed received data indicates a change in status of the at least one monitored technical device that crosses a threshold parameter” because it discloses that the “controller performs a mode 1 alarm procedure which monitors the alarm outputs of a vehicle or property security system via an alarm sensing interface” and that “[w]hen an alarm is detected, the controller automatically places an outgoing call to a designated remote GSM mobile unit and indicates the nature of the alarm via a GSM SMS message.” Ex. 1113, Abstract. Van Bergen further discloses that the controller “generat[es] an outgoing call and a SMS message from the installed GSM mobile unit to a remote GSM cellular phone in response to a number of alarm conditions which correspond to irregular or willful disturbance of the vehicle or property.” Ex. 1113, 2:1–3.

Therefore, we find Van Bergen discloses determining that a disturbance has occurred based on data from the sensors, which means that a “threshold parameter”—no disturbance—has been crossed. Furthermore, we find Van Bergen discloses determining that the processed received data “indicates an alarm condition in response to programming instructions

received in an incoming wireless” data message because it discloses remote programming including “periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters.” Ex. 1113, 3:2–3.

Patent Owner argues that the claim requires an “intelligent determination,” which Petitioner argues is made by property security system 12 in Van Bergen. PO Resp. 49–50. According to Patent Owner, “the only determination made by controller 14 is something akin to ‘I have received an input signal,’” which Patent Owner contends does not teach the limitations of the claim. PO Resp. 50. We disagree because Van Bergen expressly discloses that the CELL-EYE system “controller performs a mode 1 alarm procedure which monitors the alarm outputs of a vehicle or property security system via an alarm sensing interface” and that “[w]hen an alarm is detected, the controller automatically places an outgoing call to a designated remote GSM mobile unit and indicates the nature of the alarm via a GSM SMS message.” Ex. 1113, Abstract. The controller “generat[es] an outgoing call and a SMS message from the installed GSM mobile unit to a remote GSM cellular phone *in response to* a number of alarm conditions which correspond to irregular or willful disturbance of the vehicle or property.” Ex. 1113, 2:1–3 (emphasis added). Therefore, the controller determines that the received processed data indicates a “change in status of the at least one monitored technical device that crosses a threshold parameter” or “indicates an alarm condition” that requires the controller to alert the remote monitoring unit.

We further disagree with Patent Owner’s argument that the CELL-EYE system is not configured to determine whether the data indicates an

alarm condition in response to programming instructions received in an incoming wireless data message (*see* PO Resp. 50) because, as we find above, Van Bergen discloses remote programming including “periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters.” Ex. 1113, 3:2–3. We further note that this recitation is in an alternative limitation of claim 10 separated by a comma and the word “or.” Although we find Van Bergen teaches both alternative limitations, as discussed above, claim 10 is satisfied by Van Bergen’s disclosure that the CELL-EYE system is “configured to determine whether the processed received data indicates a change in status of the at least one monitored technical device that crosses a threshold parameter.”

We conclude that the subject matter of claim 10 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶¶ 137–38.

d. Claim 13

Claim 13 recites:

A programmable communicator device according to claim 1 further configured to transmit the received data to an at least one monitoring device either periodically or in response to a data request initiated by the monitoring device in response to programming instructions received in an incoming wireless packet switched data message.

We are persuaded by Petitioner’s contention that the combination of Van Bergen and Bettstetter teaches the limitations of claim 13. Pet. 36 (*citing* Ex. 1113, 2:51–3:5, 8:28–30, 8:49–50, 11:2–8). In particular, we find Van Bergen’s disclosure of “repeatedly dial[ing] the said SMS message to the owner at preset intervals ranging from 5 minutes to 30 minutes”

teaches periodically transmitting data indicating an alarm. Ex. 1113, 8:28–29. Furthermore, Van Bergen discloses programming “alarm parameters such as the numbers that must be dialled when an alarm condition is detected [and] *how frequently such calls need to be repeated.*” Ex. 1113, 3:3–5 (emphasis added). Van Bergen also discloses that the CELL-EYE system has a “timing control means for determining . . . the duration between repeated calls to stored numbers.” Ex. 1113, 11:2–5.

Patent Owner posits that Van Bergen discloses a “redialing feature” in which “controller 14 places ‘repeated calls’ every so often to . . . the same intended recipient in situations where it is initially unable to make a successful connection.” PO Resp. 51. According to Patent Owner, this teaches “a *single* ultimately successful data transmission that was preceded by a series of earlier failed attempts that constituted *non-transmissions* of data,” not “periodic transmissions of data.” PO Resp. 51. The following disclosure in Van Bergen undermines Patent Owner’s reading of the reference:

Such programming could include periodic customization of the level of security appropriate for a particular situation and presetting alarm parameters such as the numbers that must be dialled when an alarm condition is detected, how frequently such calls need to be repeated and *what to do if connection to a particular called number is not available at the time.*

Ex. 1113, 3:2–5 (emphasis added). Here, Van Bergen discloses the frequency of repeated calls and separately “what to do if connection to a particular called number is not available at the time.” According to Patent Owner’s reading of the reference, the repeated calls are made only because a “connection to a particular called number is not available at the time” of the first call and, therefore, the instruction for what to do when a connection

cannot be made would be to make repeated calls until a connection is made. Van Bergen's disclosure of these as separate instructions supports our finding that Van Bergen teaches periodic transmissions of data.

We conclude that the subject matter of claim 13 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶¶ 143–45.

e. Claim 15

Claim 15 recites:

A programmable communicator device according to claim 1 configured to process an at least one data monitoring or data collection request contained in an at least one transmission received from an at least one monitoring device in response to programming instructions received in an incoming wireless packet switched data message.

Petitioner contends the subject matter of claim 15 is rendered obvious by Van Bergen's disclosure of a request for location data through mode 2 operation, which is activated using a code received in an incoming wireless message, in combination with Bettsetter's disclosure of packet-switched communication. Pet. 37–38 (citing Ex. 1113, Abstract, 2:25–26, 4:43–47, 8:49–50, 10:12–13). We are persuaded by Petitioner's contention because Van Bergen discloses that activating mode 2 requires the user to enter a code, after which location data is returned. *See* Ex. 1113, 4:43–48.

Patent Owner argues Petitioner's contentions as to claim 15 fail for the same reasons as those with respect to claim 8. PO Resp. 51–52. For the reasons discussed with respect to claim 8, we also disagree with Patent Owner's arguments with respect to claim 15. In particular, we find that Van Bergen's disclosure of activating mode 2 operation teaches a “data

collection request contained in an at least one transmission received from an at least one monitoring device” because mode 2 activation is a request for location data. *See* Ex. 1113, Abstract, 4:30–48. Furthermore, we find that the incoming transmission to initiate mode 2 activation is a command that teaches a “programming instruction” because it instructs the programmable communicator device (the CELL-EYE system) to perform an operation. *See* Ex. 1113, 4:35–48; Ex. 1105 ¶ 147.

We conclude that the subject matter of claim 15 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶ 147.

f. Claims 16 and 17

Claim 16 recites:

A programmable communicator device according to claim 1 further comprising a location processing module configured to determine an at least one location of the programmable communicator device, and wherein the programmable communicator device is configured to respond to an at least one transmission initiated by an at least one monitoring device requesting that said location data be sent to the monitoring device in response to programming instructions received in an incoming wireless packet switched data message.

Claim 17 depends from claim 16 and recites that “the location processing module comprises a Global Positioning System (GPS) module.”

With respect to claim 16, Petitioner contends Van Bergen discloses a location tracking module that responds to a request for location data through mode 2 operation, which is activated using a code received in an incoming wireless message. Pet. 38–39 (citing Ex. 1113, 2:37–38, 4:35–36, 4:34–47, 8:49–50, 10:12–13). We are persuaded by Petitioner’s contention because

Van Bergen discloses that mode 2 is used to determine location in the CELL-EYE system. *See* Ex. 1113, 4:30–48.

Patent Owner argues Petitioner’s contentions as to claim 16 fail for the same reasons as those with respect to claim 8. PO Resp. 52–53. For the reasons discussed with respect to claim 8, we also disagree with Patent Owner’s arguments with respect to claim 16.

With respect to claim 17, Petitioner contends that it would have been obvious to use the GPS disclosed in Van Bergen for location tracking in the CELL-EYE system. Petitioner argues:

[i]t would have been obvious to a [person of ordinary skill in the art] to use the pre-existing GPS technology in the Cell-Eye’s vehicle location tracking system for applications in which accuracy was more important than cost because GPS, though it was more expensive at the time, generally provided more accurate location information than relying on the nearest GSM repeater stations.

Pet. 40 (citing Ex. 1105 ¶ 152). We are persuaded by Petitioner’s contention of obviousness, which we find is supported by evidence in the record, including the testimony of Mr. Savolainen. *See* Ex. 1105 ¶ 152.

Patent Owner argues that Van Bergen discourages the use of GPS because it is too expensive and that using GPS in the system of Van Bergen is contrary to Van Bergen’s stated purpose of providing a low cost alternative to satellite tracking systems. PO Resp. 53–54. Patent Owner argues that Petitioner’s contention “that a person of ordinary skill would have nonetheless wanted to supplement Van Bergen with a GPS module to address situations where location accuracy would ostensibly be more important than cost is completely speculative.” PO Resp. 54.

We disagree. Petitioner proffers the testimony of Mr. Savolainen in support of its contention that a person of ordinary skill in the art would have been motivated to use GPS in certain circumstances. Pet. 40 (citing Ex. 1105 ¶ 152). Mr. Savolainen testifies:

It would have been obvious to a person of ordinary skill in the art to use the pre-existing GPS technology in the Cell-Eye's vehicle location tracking system for applications in which accuracy was more important than cost because GPS, though it was more expensive at the time of the earliest priority date, generally provided more accurate location information (generally accurate to within 100 meters) than location information obtained by relying on the nearest GSM repeater stations (generally accurate to within kilometers, depending on the cell size).

Ex. 1105 ¶ 152.

Although Van Bergen discloses some drawbacks to GPS, such as the expense, it also characterizes systems using GPS as “[s]ophisticated” and able to “pinpoint the vehicle location,” demonstrating a benefit of GPS over the less accurate vehicle localization system of Van Bergen's mode 2 operation. Ex. 1113, 1:29–37, 2:38–41. Therefore, Van Bergen's disclosure of an alternative location tracking procedure to GPS does not rise to the level of a teaching away from the use of GPS. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed”); *see also Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (“[O]bviousness must be determined in light of all the facts, and there is no rule that a single reference that teaches away will mandate a finding of nonobviousness. Likewise, a given course

of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”).

We credit the proffered testimony of Mr. Savolainen because Van Bergen describes GPS as a “[s]ophisticated” system that can “pinpoint the vehicle location,” demonstrating a benefit of GPS over the less accurate vehicle localization system of Van Bergen’s mode 2 operation. *See* Ex. 1113, 1:29–31, 2:38–41. Therefore, we find a person of ordinary skill in the art would have been motivated to use GPS when accuracy is a more important priority than cost.

We conclude that the subject matter of claims 16 and 17 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen and Bettstetter, consistent with the evidence of record. *See* Ex. 1105 ¶¶ 148–49, 152.

*E. Unpatentability Challenge based on the Combination of
Van Bergen, Bettstetter, and Sonera
(Claim 4)*

Claim 4 recites: “A programmable communicator device according to claim 1 wherein the programmable communicator device is configured to process wireless transmissions compliant with Bluetooth wireless air interface standards.” Petitioner contends Bluetooth was a “well-known communication standard for short-range wireless communication,” as evidenced by the disclosure of Sonera. *Pet.* 50 (citing Ex. 1125, 2:19–28; Ex. 1105 ¶ 187; Ex. 1126, 3(right):1–31). Petitioner contends it would have been obvious to configure Van Bergen’s system to process Bluetooth communications. *Id.* at 50–51. For example, Petitioner argues “connecting the Cell-Eye’s ‘micro switch’ for detecting the ‘opening of a door or window,’ Ex. 1113, 5:44-45, using Bluetooth would eliminate the need to

run wires through a house to monitor its doors, thereby simplifying and reducing the cost of its installation.” Pet. 51 (citing Ex. 1105 ¶ 188). Petitioner argues implementing Bluetooth would have been a matter of routine engineering to a person of ordinary skill in the art. *Id.*

Patent Owner argues that Petitioner has not provided “any credible reason” to modify Van Bergen to add Bluetooth capability in view of Sonera. PO Resp. 59. We disagree. Petitioner proffers the testimony of Mr. Savolainen in support of its contention that a person of ordinary skill in the art would have been motivated to use Bluetooth in certain circumstances, such as to avoid the need to run wires, which would “simplify[] and reduc[e] the cost of [the] installation” of the CELL-EYE’s “micro switch.” Ex. 1105 ¶ 188 (citing Ex. 1113, 2:29–33, 5:44–45). We credit Mr. Savolainen’s testimony because Sonera itself discloses that Bluetooth allows devices to connect “without cumbersome cabling.” Ex. 1125, 2:23–33. We find, consistent with the evidence of record, that a person of ordinary skill in the art would have been motivated to use Bluetooth in the CELL-EYE system in the manner described by Petitioner. *See* Ex. 1105 ¶¶ 186–91.

Patent Owner also argues that Van Bergen does not teach that its monitored technical devices are able to communicate using Bluetooth. PO Resp. 59. However, Petitioner’s contentions of obviousness rely on Sonera for teaching the use of Bluetooth, not that Van Bergen expressly discloses Bluetooth. *See* Pet. 50–51. We find Petitioner has provided articulated reasoning with rational underpinning, supported by evidence in the record, underlying its contention of obviousness. Pet. 50–51.

We conclude that the subject matter of claim 4 would have been obvious to a person of ordinary skill in the art based on the combination of

Van Bergen, Bettstetter, and Sonera, consistent with the evidence of record.
See Ex. 1105 ¶¶ 185–91; Ex. 1125.

*F. Unpatentability Challenge based on the Combination of
Van Bergen, Bettstetter, and Kuusela
(Claims 19 and 20)*

Claim 19 depends from claim 1 and recites that “the monitored technical device is a health monitoring system.”¹² Claim 20 recites:

A programmable communicator device according to claim 19 wherein the programmable communicator device is configured to receive data from the health monitoring system through the programmable interface representing at least one of body temperature, blood pressure, periodic or continuous electrocardiogram heart rhythm, blood glucose concentration, blood electrolyte concentration, kidney function, liver function, and labor contractions in response to programming instructions received in an incoming wireless packet switched data message.

Petitioner argues, and we agree, that Kuusela teaches health monitoring sensors that measure, among other things, body temperature. Pet. 54–55 (citing Ex. 1128, 1:19–28, 9:27–31). Petitioner contends

it would . . . have been obvious to a [person of ordinary skill in the art] to implement the Cell-Eye system in the known health monitoring application of Kuusela to increase the flexibility of health monitoring units by allowing remote programmability of the units, including programming a telephone number to which the remote unit sends alarms. Ex. 1113, 2:51–3:4. For example, it would have been desirable to update the outgoing number for medical alarms to that of a pager or mobile phone of a doctor or nurse on-call at the time to direct medical information to the appropriate medical professional.

¹² Petitioner correctly points out that claim 19 characterizes the type of “monitored technical device” recited in claim 1, but the “monitored technical device” is not part of the “programmable communicator device” claimed in claim 1. See Pet. 53.

Pet. 54 (citing Ex. 1105 ¶ 194).

We find Petitioner has provided articulated reasoning with rational underpinning, supported by evidence in the record, underlying its contention of obviousness. Pet. 52–55.

Patent Owner argues Petitioner has not provided “any credible reason” for the combination of the remote health monitoring system teachings of Kuusela with Van Bergen, which Patent Owner contends is “expressly designed for the completely unrelated purpose of remotely monitoring ‘conventional vehicle and property security and alarm equipment and vehicle immobilization equipment.’” PO Resp. 60–61 (quoting Ex. 1113, 1:4–5).

We disagree with Patent Owner. First, Van Bergen states that “[i]t is the purpose of the said CELL-EYE system to assist the owner or security service provider to protect specific property, *human life*, and to prevent any criminal intervention thereon.” Ex. 1113, 2:6–7 (emphasis added). Therefore, Van Bergen is not limited only to protecting property. Further, as Petitioner and Mr. Savolainen point out, “[t]elecom companies developed telemetry devices that were generally not application-specific, but suitable to be integrated into a wide range of monitored technical devices,” and “[t]he type of monitored technical device was entirely application dependent.” Pet. 52 (citing Ex. 1105 ¶¶ 44–46). Van Bergen generically discloses monitoring “any appropriate sensors” (Ex. 1113, 5:41), suggesting to a person of ordinary skill in the art that the system would have potential use beyond the particular type of monitoring system described.

Second, Petitioner proffers the testimony of Mr. Savolainen in support of its contention that a person of ordinary skill in the art would have had

reason to combine the CELL-EYE system with a known health monitoring system. *See* Pet. 54 (citing Ex. 1105 ¶ 194). Mr. Savolainen testifies that “it would have been desirable to update the outgoing number for medical alarms to that of a pager or mobile phone of a doctor or nurse on-call at the time to direct medical information to the appropriate medical professional.” Ex. 1105 ¶ 194. We find that a person of ordinary skill in the art would have had reason to combine the teachings of Van Bergen and Bettstetter with Kuusela, as asserted by Petitioner.

We conclude that the subject matter of claims 19 and 20 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen, Bettstetter, and Kuusela, consistent with the evidence of record. *See* Ex. 1105 ¶¶ 193–95; Ex. 1128.

*G. Unpatentability Challenge based on the Combination of
Van Bergen, Bettstetter, and Eldredge
(Claim 21)*

Claim 21 depends from claim 1 and recites that “the monitored technical device is a vending machine.” Petitioner contends “[i]t would have been obvious to a [person of ordinary skill in the art] to use the Cell-Eye system to monitor intrusion alarms in vending machines because monitoring an intrusion alarm in a vending machine is no different than monitoring an intrusion alarm in other types of property” and adapting the system of Van Bergen to monitor vending machines would have been a matter of routine engineering. Pet. 55–56 (citing Ex. 1113, Abstract, 5:41; Ex. 1129, 12:18; Ex. 1105 ¶ 199).

Patent Owner argues Petitioner has not provided “any credible apparent reason” to combine the teachings of Van Bergen and Eldredge because the alarms in the Eldredge system “were already being remotely

monitored by the intelligent devices that comprised the Eldredge system such as ‘remote link 30’ and ‘date acquisition unit 20.’” PO Resp. 61–62 (citing Ex. 1129, 15:30–17:6).

As with claim 19, claim 21 characterizes the type of “monitored technical device” recited in claim 1, but the “monitored technical device” is not part of the “programmable communicator device” claimed in claim 1. The CELL-EYE system discloses a programmable communicator device for “protecting specific property, human life and the prevention of vehicle-theft and irregular and willful intrusion of property,” and describes monitoring “any appropriate sensors.” Ex. 1113, Abstract, 5:41. Eldredge makes clear that one such type of property that it would be desirable to protect is a vending machine. See Ex. 1129, Abstract. Similar to the combination with Kuusela for claims 19 and 20 regarding health monitoring systems, we are persuaded by Petitioner’s contention that it would have been obvious to a person of ordinary skill in the art to use the CELL-EYE system to monitor property, such as vending machines, as disclosed in Eldredge. Petitioner’s contention is supported by the testimony of Mr. Savolainen, which we find credible. See Ex. 1105 ¶¶ 196–99.

We conclude that the subject matter of claim 21 would have been obvious to a person of ordinary skill in the art based on the combination of Van Bergen, Bettstetter, and Eldredge, consistent with the evidence of record. See Ex. 1105 ¶¶ 196–99; Ex. 1129.

*H. Anticipation Challenge based on Van Bergen
(Claim 24)*

Petitioner contends Van Bergen anticipates independent claim 24. Pet. 17–28, 46–47. Petitioner’s anticipation contentions as to claim 24 refer to its contentions with respect to various limitations in claim 1. See *id.*

As with claims 1 and 29, claim 24 recites:

wherein the programmable communicator device is configured to use a memory to store at least one telephone number or IP address included within at least one of the transmissions as one or more stored telephone numbers or IP addresses if the processing module authenticates the at least one of the transmissions including the at least one telephone number or IP address and the coded number by determining that the at least one of the transmissions includes the coded number.

As discussed above in the section addressing claim construction, we determine that the claims, as properly interpreted, require inclusion in the same transmission of both the coded number and the telephone number to be stored. Petitioner contends Van Bergen discloses that the system updates stored telephone numbers if the controller receives a valid PIN code. Pet. 23–24 (citing Ex. 1113, 2:51–3:4, 6:42–44, 6:50–51, 7:1–3, 10:33–34, 11:14–16). According to Petitioner, “[t]he Cell-Eye receives multiple transmissions including the PIN code (‘coded number’) in step (d) and the telephone number in step (g).” Pet. 24 (citing Ex. 1113, 6:50–51, 7:1–3).

Petitioner’s contention that Van Bergen discloses that the CELL-EYE system stores a telephone number based on reception of the coded number and the telephone number in separate transmissions fails to meet this claim limitation. Therefore, Petitioner has not demonstrated by a preponderance of the evidence that Van Bergen anticipated independent claim 24.

III. CONCLUSION

Based on the information presented and the record developed during trial, we conclude that Petitioner has shown by a preponderance of evidence that claims 1–23 and 29 are unpatentable as obvious based on the asserted grounds.

Petitioner, however, has not shown by a preponderance of evidence that claim 24 is unpatentable as anticipated by Van Bergen.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–23 and 29 have been shown to be unpatentable;

FURTHER ORDERED that claim 24 has not been shown to be unpatentable; and

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

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