UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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RESIDEO TECHNOLOGIES, INC. and

CENTRAL SECURITY GROUP – NATIONWIDE, INC.,[1]

Petitioners

v.

UBIQUITOUS CONNECTIVITY, LP,

Patent Owner.

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Case: IPR2019-01335 & IPR2019-01609
U.S. Patent No. 8,064,935

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PETITIONERS' REPLY BRIEF

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[1] Central Security Group – Nationwide, Inc., who filed a petition in IPR2019-01609, has been joined as a petitioner in this proceeding.

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I. INTRODUCTION

Patent Owner's Response seeks to supplement its previously rejected arguments by twisting the disclosure of the prior art, reading limitations into the claims, and relying on lengthy claim constructions that find no support in the claims, the specification, or the prosecution history.

For example, rather than rely on the intrinsic record or the clear disclosure of the claims, Patent Owner's proposed construction for the term "microcontroller" relies on the combination of *two* dictionary definitions. In order to bolster this questionable claim construction position, Patent Owner offers the declaration of Mr. Ivan Zatkovich. But Mr. Zatkovich is neither credible nor persuasive due to his contradictory positions in different IPR proceedings.

Despite Patent Owner's attempts, it remains that the prior art presented by Petitioners describe systems that are virtually identical to the alleged invention of the claims of U.S. Patent 8,064,935 (the "935 Patent") and to one another. The prior art systems describe then-existing products and do so with more detail than is found in the specification of the 935 Patent. For this, and the many reasons provided in the Petition and here, the challenged claims are unpatentable.

II. CLAIM CONSTRUCTION

A. Microcontroller.

Patent Owner argues that "microcontroller" should be construed as "a special-purpose computing device including at least a CPU, main memory, timing circuits, and I/O circuitry designed for a minimal quantity of chips and then programmed to handle a particular task." Response (Paper No. 23), 11. In so doing, Patent Owner takes a single generic term, "microcontroller," which can be understood simply from the language of the claims, and presents a 32-word definition that finds no support in the claims, specification or prosecution history.

1. The Claimed "microcontroller" is Described Not By What it is, but What it Does.

Patent Owner argues that a "microcontroller" is a special device that comprises a long list of other components. In particular, Patent Owner suggests that mere mention of the term "microcontroller" would communicate to a POSITA that the microcontroller contains each of the following:

- Special-purpose computing device
- CPU
- Main memory
- Timing circuits
- I/O circuitry
- Designed for a minimal quantity of chips
- Programmed to handle a particular task

Response, 11. Unsurprisingly, Patent Owner's narrow and complicated construction *finds no support in the specification or in the claims of the 935 Patent*. At no point does the 935 Patent recite "timing circuits," a "special-purpose computing device," "I/O circuitry," "designed for a minimal quantity of chips," or "programmed to handle a particular task." Each of these components are fictions created by Patent Owner.

The claims of the 935 Patent broadly describe a "microcontroller" that resides within the base unit and that is responsible only for "process[ing]" and "send[ing]." The claims do not describe any unique processing performed by the microcontroller or any particular components that a microcontroller must comprise. Claims 18 and 21 recite a base unit comprising:

> a microcontroller configured to process the second message including the command, and to send the command through the communication interface to the environmental device

Ex. 1001, claim 18, 21[2]. It is apparent from the plain language of the claims that the microcontroller merely performs process control as there are only two requirements

[2] "Microcontroller" also appears in dependent claims 3 and 14, which recite that the "base unit further comprises a microcontroller-based processing unit having customizable application specific software." Ex. 1001, claims 3, 14. Mr. Zatkovich

of the microcontroller: (1) processing a message and (2) sending a command. To be sure, neither processing a message nor sending a command is unique and neither requires, or suggests the need for, a "[s]pecial-purpose computing device," "main memory," "timing circuits," "I/O circuitry," and/or a device that is "designed for a minimal quantity of chips." Rather, the claimed microcontroller functionally requires a processor, such as a CPU, that is capable of the basic and generic functions of "process[ing]" and "send[ing]." *Id.* Indeed, the relevant figure from the 935 Patent merely illustrates a box corresponding to a "micro-control" with *none* of the other elements in Patent Owner's definition:

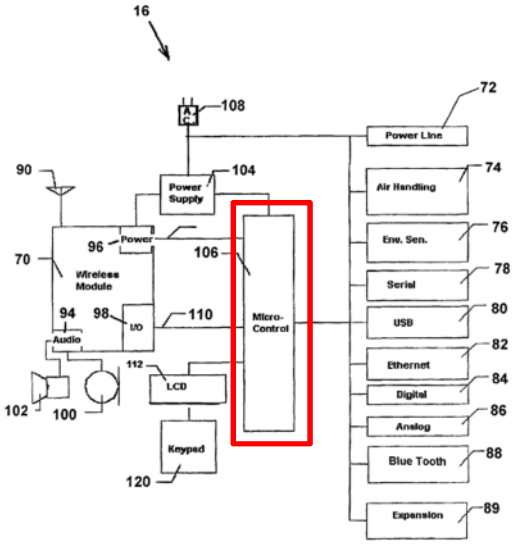

Fig. 4

Ex. 1001, FIG. 4 (annotated).

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confirmed that these claims do not recite any further processing performed by the microcontroller. Ex. 1040 (Zatkovich Deposition I), 115:1-21.

The specification likewise describes the microcontroller as a component responsible for basic processing. For example, in the base unit, the microcontroller is described as communicating with other components, "operating a number of separate subsystems," and containing application software for "provid[ing] for autonomous control." Ex. 1001, 4:46-52, 10:18-21. The specification also describes that the remote unit can comprise a "microcontroller" that is "electrically interconnected with random access memory" and that controls power. Ex. 1001, 4:9-18. The specification describes no other processing or components of the "microcontroller." The "microcontroller" is simply a component that "controls."

2. <u>Contemporaneous Dictionary Definitions Support Petitioners' Interpretation.</u>

Because Patent Owner's construction of "microcontroller" is not intrinsically supported, it offers a combination of *two* dictionary definitions. Response, 6-10.

But Patent Owner has cherry-picked two dictionaries while ignoring other dictionaries that undercut its position. For example, the Dictionary of Electrical and

Computer Engineering[3], published by McGraw Hill[4] in 2004, defines microcontroller as follows:

> |ELECTR| A microcomputer, microprocessor, or other equipment used for precise process control in data handling, communication, and manufacturing.

Ex. 1039 (Dictionary of Electrical and Computer Engineering) at 14. This definition makes clear that a "microcontroller" is a device that "controls" and can be a microprocessor (or similar component) programmed for a particular process. This definition further makes clear that a "microcontroller" need not be defined by a laundry list of subcomponents.

The Dictionary of Electrical and Computer Engineering defines a microcontroller, like the 935 Patent, by how it functions. Indeed, the Dictionary of Electrical and Computer Engineering defines the microcontroller as equipment used for "process control." *Id.* This matches the claims, which describe the microcontroller as a component that (1) processes a message and (2) sends a

[3] The title and subject matter of this dictionary align with Patent Owner's POSITA: "a bachelor's degree in electrical engineering or computer science." Response, 4.

[4] Mr. Zatkovich agreed McGraw was "a well-known" and "respected" publishing company. Ex. 1040, 38:16-39:10.

command (which is used for control of an environmental device). *See e.g.*, Ex. 1001, claim 18.

3. Mr. Zatkovich's Testimony is not Credible.

Mr. Zatkovich testified to an alleged distinction between microcontroller and a microprocessor, but his testimony is not credible because he has taken *the exact opposite position* in previous proceedings.

In IPR2015-00637, Mr. Zatkovich stated that the terms "microcontroller" and "microprocessor" can be used synonymously, *a position directly contradictory to his testimony in these proceedings*:

> It is my opinion that ***the disclosure of a microcontroller clearly provides support for the claimed microprocessor***. A POSA would understand that a ***microcontroller is a single integrated circuit which contains a microprocessor core and memory***. For purposes of the `838 Patent, and in the context of how "microcontroller" and "microprocessor" are used therein, ***these terms can be accepted as essentially synonymous***. In practice, ***as of 2001***, their known use to a POSA, particularly with respect to the types of functions described in the patent and recited in the claims, would have been the same.

Ex. 1042 (Zatkovich IPR2015-00637 Declaration) at 27 (emphasis added). Although this declaration was in the context of U.S. Patent No. 8,908,838, Mr. Zatkovich explained that his position that a POSITA would understand "microcontroller" and "microprocessor" as synonymous was true as of 2001. *Id.* Given the 2004 priority

date of the 935 Patent, Mr. Zatkovich's testimony in IPR2015-00637 is relevant to a POSITA's understanding of the 935 Patent.

In another declaration submitted in IPR2019-01649 regarding Patent No. 9,016,566 (the "566 Patent"), Mr. Zatkovich again equated microcontrollers and microprocessors in that he asserted that a microprocessor in the provisional corresponds to "controller 50" in the 566 Patent. Ex. 1043 (Zatkovich IPR2019-01649 Declaration) at 9-10. The 566 Patent explains that the "controller 50" is "in the form of a microcontroller unit (MCU)." Ex. 1044 (566 Patent), 7:45-46. The 566 Patent thereafter repeatedly refers to an "MCU 50." *Id.* at 7:62-67, 8:2, 8:24, 8:51.

4. <u>Petitioners' Proposed Construction.</u>

Petitioners did not offer a construction of the term "microcontroller" in the Petition because the prior art describes identical systems with components that are capable of performing the tasks that are attributed to the "microcontroller" in the claims. *See* Section III.A. Indeed, 1) Oinonen discloses an "MCU" (a common acronym for a microcontroller) and (2) Bielski discloses an embedded PC, a component that qualifies as a microcontroller based on Patent Owner's own definition. To the extent that the Board is inclined to offer a construction of that term, and based on the claims and specification, "microcontroller" is properly construed as "a microcomputer, microprocessor, or other equipment used for process control, for example, processing a message and sending a command."

III. ARGUMENT

A. The References Identified by Petitioners Disclose the Claimed Microcontroller.

With respect to Ground 1A, Oinonen discloses the claimed microcontroller or "MCU" as part of the first telecommunications unit (TE1), (the claimed base unit). Ex. 1016, FIG. 3; Ex. 1003, ¶346-347. Oinonen discloses that the base unit comprises an "MCU," (labeled as component 1)[5], and does so in a box diagram that is very similar to the disclosure of the 935 Patent:

[5] As identified in the petition and confirmed by Dr. Jeffay, the combination of the MCU and ASIC also disclose the claimed microcontroller. Petition, 24-25; Ex. 1003, ¶¶267-269.

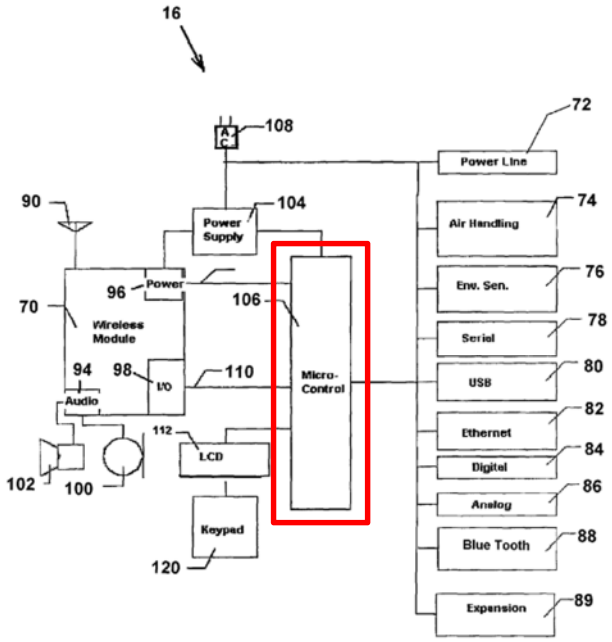

Fig. 4

Ex. 1001, FIG. 4 (annotated).

"MCU" is a common abbreviation for a microcontroller unit as can be seen in, for example, Patent Owner's own exhibits. In his declaration, Mr. Zatkovich includes an image of an example microcontroller:

Ex. 2004, ¶39. As seen in this image, the microcontroller illustrated is an ARM component with part number STM32L100 R8T6. *Id.* To describe the ARM microprocessor, Mr. Zatkovich cites Exhibit 2009, which describes a Logitech keyboard that includes the "32-bit ARM STM32L 100 R8TG ***MCU***." Ex. 2009 at 2 (emphasis added). Although Mr. Zatkovich confirmed that this microcontroller was the same one in the image in his declaration, he then pivoted and feigned ignorance, testifying that he did not understand that MCU is an acronym for a microcontroller, alleging that "I – I have not used that acronym myself." Ex. 1040, 220:17-222:21. Mr. Zatkovich even tried suggesting that the identification of "MCU" in Exhibit 2009 was "just a designation, a part designation." *Id.* at 222:8-11.

Undercutting his position, Mr. Zatkovich submitted a declaration in IPR2019-01649 regarding the 566 Patent, which uses the term "MCU." Ex. 1044, 7:45-46. When pressed during his deposition, Mr. Zatkovich was forced to admit that the 566 Patent uses acronyms (MCU and MPU) to refer to microprocessors and microcontrollers:

> Q. And we see here at column 6, line 24 that microprocessor unit is referred to as MPU, right?
>
> A. Yeah. I'm now seeing a pattern throughout the document that ***they're using acronyms to refer to many of the terms***. So MPU

for the microprocessor.

Q. ***And MCU for the microcontroller***?

A. ***Correct***.

Ex. 1041 (Zatkovich Deposition II), 114:13-22 (emphasis added). Although a different patent, the fact that Mr. Zatkovich acknowledges that "MCU" is an acronym used in the industry for microcontroller supports the same interpretation in the Oinonen reference.

Although Oinonen's reference to "MCU" (a microcontroller) is explicit, Mr. Zatkovich attempts to distinguish the teachings of Oinonen[6] by pointing out that Oinonen refers to the MCU in the specification as "e.g., a processor 1, such as a microprocessor." Ex. 1016, 7:15-16[7]. But this disclosure supports the notion that the terms are synonymous and is consistent with the microcontroller (MCU) shown in Figure 3 of Oinonen. In particular, even Mr. Zatkovich testified that a microcontroller comprises a processor. Ex. 1040, 109:20-110:1. Oinonen thus discloses an "MCU" with a "processor" which is the claimed "microcontroller."

[6] Mr. Zatkovich feigned ignorance again when asked what the MCU in Oinonen Figure 3 referred to. When asked "[w]hat do the letters MCU stand for?" Mr. Zatkovich testified, "I don't know." Ex. 1041, 99:2-3.

[7] Oinonen's "microprocessor," is described as a non-limiting example. Ex. 1016, 7:15-16.

In Ground 2A, at least Bielski discloses the claimed microcontroller. Patent Owner alleges that Bielski does not disclose a microcontroller because Bielski illustrates a standard desktop computer in Figure 4(a). Response, 57-58. But Patent Owner ignores that Bielski also discloses that the check and communication unit (the claimed base unit) can be embodied as an "Embedded PC." Ex. 1017, [0085]. Bielski's "Embedded PC" is a microcontroller. Ex. 1003, ¶680.

During his deposition, Mr. Zatkovich explained that, indeed "[a] microcontroller in and of itself can be an embedded system." Ex. 1041, 95:21-96:3. Mr. Zatkovich further agreed that, in the context of the 935 Patent, the microcontroller is part of a larger system and thus is an embedded microcontroller or embedded system. *Id.* at 93:10-96:3. Indeed, *Patent Owner's* Microsoft Computer Dictionary (Response, 6) defines "microcontroller" as "an embedded system." Ex. 2006 (Microsoft Computer Dictionary) at 337.

In view of Mr. Zatkovich's testimony that the microcontroller in the 935 Patent is an embedded microcontroller or embedded system, it follows that Bielski's "Embedded PC" also functions as the claimed microcontroller. Indeed, a "PC," or "personal computer" is a common type of computing system. Accordingly, Bielski's "Embedded PC" functions as a type of embedded system in the same way that the "microcontroller" functions as a type of embedded system when incorporated into a larger device (such as those disclosed in the 935 Patent).

B. Bielski and Wu Disclose Sending SMS Messages From the Remote Unit to the Base Unit.

Patent Owner argues that the combination of Bielski/Wu does not disclose sending an SMS message from a remote unit to a base unit because (1) Bielski allegedly only discloses SMS messages from the base unit to remote unit and (2) a POSITA would allegedly not have been motivated to combine Wu with Bielski. Response, 50-51. Patent Owner does not dispute that Wu discloses sending SMS messages from the remote unit to the base unit. Thus, there is no dispute that the combination teaches bidirectional SMS messages. As explained in Section III.D.2, Patent Owner's motivation to combine argument can be dismissed.

Irrespective, Patent Owner still argues that Bielski's reference to "SMS" is in the context only of communication from the check and communication unit to the remote unit. Response, 50. But this argument can be dismissed because Bielski discloses sending SMS messages from the remote unit to the base unit. Petition, 54-58. Bielski discloses a single "means" responsible for both (1) communications from the mobile terminal to the check and communication unit (base unit) and (2) communications from the check and communication unit to the mobile terminal. Ex. 1017, [0005], *see also* [0069]. Bielski discloses that the "means" can be SMS messages. *Id.* at [0069]. Thus, Bielski's SMS messages necessarily work bi-directionally. Ex. 1017, [0005], [0007], [0012], [0023], [0069].

Patent Owner further argues, citing Bielski's disclosure of a "dialing number," that Bielski is directed to DTMF dial tones to control environmental devices. Response, 50-51. These DTMF dial tones, Patent Owner argues, were a prior art solution upon which the 935 Patent fundamentally improved. *Id.* But neither "DTMF" nor "dial tones" appear in Bielski. Moreover, Bielski's reference to a "dialing number" can also refer to sending SMS messages, as the user would need to enter the phone number (dialing number) of the destination user's device. Mr. Zatkovich confirmed that the number used to call someone (dial their number) is the same number that would be used to send that individual an SMS. Ex. 1041, 90:8-11.

C. Patent Owner's Challenges Regarding Menard Fail.

There is no dispute that it was well-known to confirm accuracy of messages[8] and there is no dispute that Menard teaches sending additional messages to notify users of the outcome of processing the responses to the alarms (*e.g.*, notifying a party that the command has been executed).[9] Patent Owner's chief complaint of Menard

[8] Oinonen/Whitley disclose confirming the accuracy of a message to the sender. Petition, 46-47.

[9] Patent Owner argues that Menard does not teach notifications based on the execution of a command by the environmental device. But Mr. Zatkovich admitted that Menard discloses an alarm system where an alarm signal is communicated to a

alone, and not part of the combination as a whole, is that that the "system" responsible for executing further notifications is allegedly "not . . . located within a house or business," but is instead "remote from the house or business." Response, 39-41. Patent Owner's interpretation is based on its overly-narrow interpretation of Figure 1:

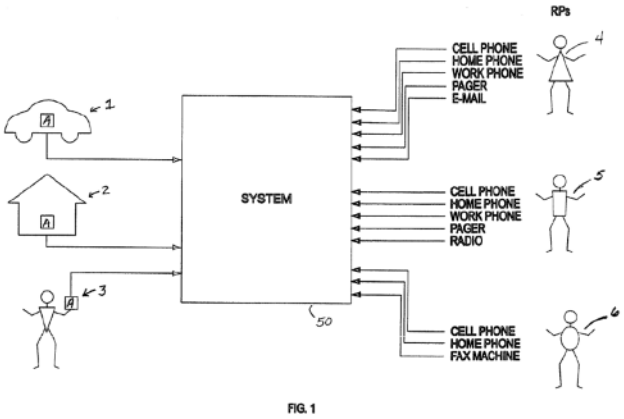

FIG. 1

Ex. 1020 (Menard), FIG. 1. Patent Owner alleges that the "system" is not a base unit because it is drawn outside of the home (component 2). Response, 39-40. However, simply because the "system" is drawn to the right of the home in Figure 1 does not

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user (Ex. 1040, 213:4-215:3) and that Menard teaches the notification is communicated "directly or indirectly," (*id.* at 215:4-21), which he agreed could mean that the alarm communicates directly with the user (*id.*). Patent Owner also admits that Menard discloses notifying responsible parties "of the outcome" of the processing ("cancel[ling] the alarm") that the RPs requested. Response, 43.

necessarily mean that the "system" is outside the home. Menard's figure is designed to show the flow of information, not to show precise placement of each component.

Even if the "system" in Menard is located outside the home, this is of no moment. Mr. Zatkovich expressly stated that the base unit need not be located within the home. Ex. 1040, 151:16-21. Mr. Zatkovich even provided an example when the base unit should not be within the home, such as when monitoring a house gate on a multi-acre property. *Id.* at 151:22-152:8. Accordingly, not only does the base unit not need to be located within the home, but there are examples when the base unit should not be in the home.

D. A POSITA Would be Motivated to Combine Petitioners' References.

1. Oinonen and Whitley.

Petitioners explained that a POSITA would combine Whitley with Oinonen because, unlike Oinonen, Whitley explicitly discloses a system with the ability to monitor and control multiple environmental devices. Petition, 15-17. Understanding that most homes/businesses would likely include many devices to be controlled, a POSITA would have been motivated to identify a solution to Oinonen that allowed

for the control/monitoring of multiple devices.[10] The motivation is further supported by Mr. Zatkovich's statements in a declaration he submitted in the co-pending district court litigation addressing 35 U.S.C. 101 (the "101 Declaration"). Indeed, Mr. Zatkovich *repeatedly explained* that one of the benefits of the 935 Patent was the ability to control/monitor multiple devices. Ex. 1014 (101 Declaration), 83; *see also id.* at 45 (discussing multiple devices), 48 (same), 100 (same).

Patent Owner now argues, however, that the concept of multiple environment devices is not recited in the claims and thus, this should doom Petitioners' proposed combination. Patent Owner's position is wrong and is at odds with the law. *See KSR Int'l Co. v. Teleflex, Inc*., 550 U.S. 398, 418 (2007).

2. <u>Bielski and Wu.</u>

Patent Owner argues that a POSITA would not be motivated to combine Bielski and Wu because Wu's exemplary software for implementing SMS on the base unit (software referred to as a gnokii driver) was designed only for Nokia devices.

[10] Petitioners also asserted that the combination "allow[ed] for monitoring of activities over time, which allow[ed] the user to . . . save energy." Petition, 16. Patent Owner does not dispute this motivation.

As an initial matter, Wu is broadly directed to a "Home Network System" that can use, for example, SMS messages for communication of commands and environmental information:

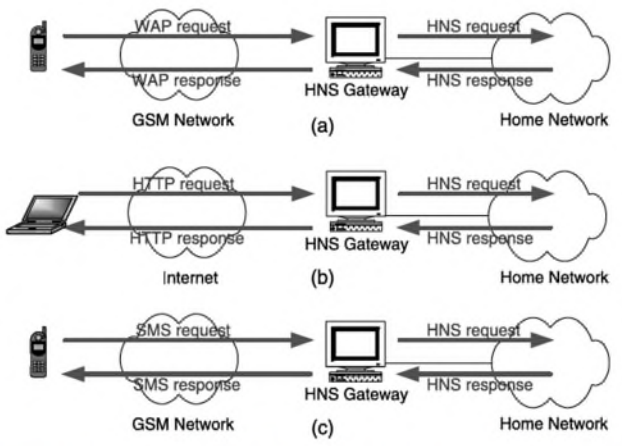


Fig. 2. Communication with the HNS in (a) WAP and (b) HTTP (c) SMS.

Ex. 1018, FIG. 2. Wu discloses an exemplary embodiment, a short message driver based on the "gnokii[] driver" that allows for "sending and receiving [SMS] short messages" *Id.* at 499. But the case law is clear: a prior art reference is not limited to an exemplary embodiment. *ArthroCare Corp. v. Smith & Nephew, Inc.*, 406 F.3d 1365, 1372 (Fed. Cir. 2005).

Even assuming Wu was limited to a Nokia-based solution like gnokii (which it is not), this would be neither surprising nor problematic for a POSITA. In 2004, Nokia was the market leader in mobile device sales, holding market shares ranging from 32%-51%. Ex. 2008-2010. As a result, a POSITA would have certainly looked to Nokia-based solutions.

Irrespective, *gnokii is not, in fact, limited to Nokia devices*. This is confirmed by gnokii's own website which lists that, in addition to Nokia, gnokii supported other manufacturers, including Ericsson, Sony-Ericsson, Siemens, Bosch, and Motorola. Ex. 2014, Ex. 1045 (Gnokii FAQ); Ex. 1041, 70:12-79:21.[11] Patent Owner's argument that gnokii is limited to Nokia can thus be dismissed *based on gnokii's own documentation*.

E. The Prior Art References are Enabled.

Patent Owner argues that the prior art references identified by Petitioners do not contain enabling disclosures because they would not have "enabled a POSITA to implement the claimed SMS messaging in a base unit without undue experimentation."[12] Response, 18. Patent Owner's expert suggests that the references are not enabling because they do not describe two allegedly necessary technical solutions: (1) "computing device acting as the base unit be coupled to a

[11] The Gnokii website also notes that "AT mode compatible phones" are supported. The 935 Patent also discloses devices that use "AT command sequence[s]." Ex. 1001, 7:54-55.

[12] Patent Owner does not dispute that Wu provides an enabling disclosure, but merely argues that a POSITA would not combine Wu with Bielski. Response, 52-53. This argument can be dismissed for the reasons explained in Section III.D.2.

cell phone that would send and receive the base unit's SMS messages via a hardware and software interface" and (2) "presence of software, on the cellular phone, that provides a software interface (API) for the SMS functions on the cellular phone to be controlled or directed by communications with a computing device." *Id.* at 19-21.

Patent Owner's argument is surprising because the 935 Patent does not describe either of these solutions. For example, although Mr. Zatkovich consistently touted the notion of an API or software interface (*see e.g.*, Ex. 1040, 67:18-68:2), the 935 Patent does not disclose, or even mention the terms, "API" and/or "software interface." This concept, *conceived entirely by Patent Owner outside the context of the patent,* is used merely to manufacture an argument against Petitioners' references. In reality, the 935 Patent does not disclose any technical details for how to implement SMS messaging in a base unit,[13] choosing instead to broadly describe

[13] When asked to identify these technical solutions, Mr. Zatkovich pointed to "port addressing." Ex. 1040, 140:5-18. Port addressing is not novel. Indeed, port addressing is described in the short message service specification. Ex. 1025, 67-68. The only other portion of the specification Mr. Zatkovich could identify as containing technical details was a passage that he admitted did not relate to SMS messages. Ex. 1040, 146:3-22.

a base unit that sends/receives messages. The prior art discloses at least the same level of detail as in the 935 Patent. *WesternGeco, L.L.C v. PGS Geophysical AS*, IPR2015-00309, Paper 42 at 15-16 (June 8, 2016); *In re Epstein*, 32 F.3d 1559, 1568 (Fed. Cir. 1994).

Moreover "'obviousness references do not need to be enabling.'" *Canon Inc. et al. v. HS Asset and Technology, LLC*, IPR2018-00499, Paper 19 at 27-28 (July 23, 2019) (*citing Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991); *BMW of North America, LLC v. Stragent, LLC*, IPR2017-00676, Paper 33 at 44 (June 14, 2018); *see also Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1357 (Fed. Cir. 2003) (Under §103, "a reference need not be enabled; it qualifies as a prior art, regardless, for whatever is disclosed therein"). Patent Owner's argument regarding the enablement can thus be dismissed.

F. Dependent Claims.

1. Claims 4-6, 16.

Claim 4 recites that the mobile device has custom programmability. Other claims specify particular programming languages for custom programmability, such as JAVA and J2ME. Ex. 1001, claims 5-6, 16. Once again, Patent Owner attempts to inject additional limitations into the claims, arguing that these claims require the ability to add an application not typically found on other mobile phones. Response, 32. However, Mr. Zatkovich told a different story, explaining that custom

programming referred to the addition of "apps" on the mobile phone that were not "burned [on the device] at the factory." Ex. 1040, 112:1-113:3. In other words, any "app" added after the device is shipped from the factory would qualify as "custom programmability." This is disclosed in the prior art.

Sears discloses the use of JAVA and J2ME. Ex. 1019 (Sears), Abstract, [0030]. Sears discloses that "[m]obile device users want services and applications that can deliver individualized information" and discloses Java/Java-like applications to optimize content. *Id.* at [0006], [0012]. Similarly, Bielski discloses "[t]he use of specifically developed applications on the mobile device" as well as the ability to create "special solutions" for the devices in the system. Ex. 1017, [0076].

Mr. Zatkovich confirmed the state of the art by confirming that JAVA and J2ME were used to create custom software (i.e., "apps"), like what is disclosed in the references, before 2004. Ex. 1040, 167:5-168:20. Mr. Zatkovich even testified that he personally, or those working for him, created custom applications using JAVA/ J2ME before 2004. *Id.* Accordingly, the combination of Sears with either (1) Oinonen/Whitley or (2) Bielski/Wu[14] (the combination of which Patent Owner does

[14] As described in the Petition in Ground 2, claim 4 is disclosed merely by Bielski/Wu. Petition, 61-62.

not dispute) discloses the custom programmability and/or custom programming languages in the 935 Patent.

2. Claim 9.

Claim 9 requires a mobile device with an LCD display that "includes selectable graphic icons corresponding to current environmental information being monitored or controlled." Ex. 1001, claim 9. Petitioners identify Ehlers, in combination with Oinonen/Whitley, as disclosing claim 9. Petition, 39-42.[15] Ehlers teaches a "virtual thermostat" with "a plurality of thermostat buttons" (Ex. 1022 (Ehlers) at [0316]):

[15] Patent Owner argues that Petitioners' expert "does not opine that Bielski discloses the claimed icons relating to environmental information." Response, 55. This is incorrect. Bielski discloses a mobile device with icons that include environmental information, such as room temperature information. Petition, 66-67; Ex. 1003, ¶¶592.

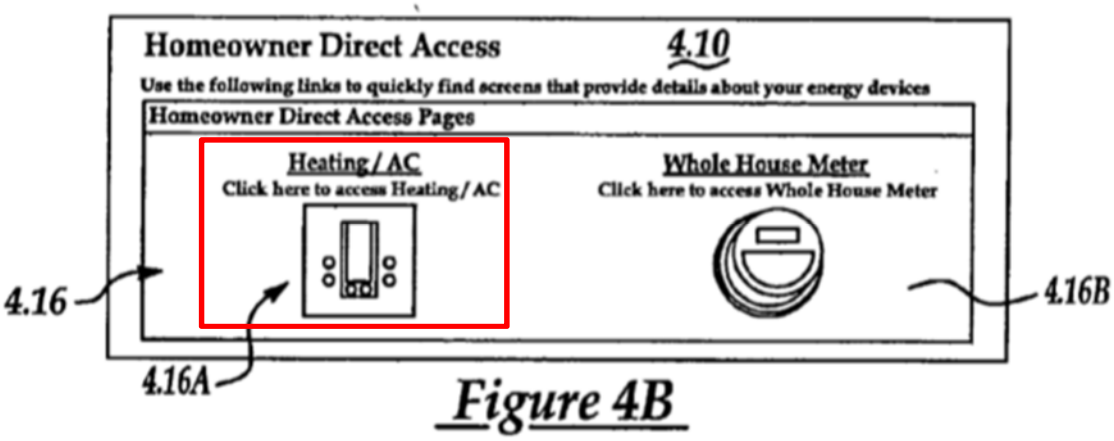


Figure 4B

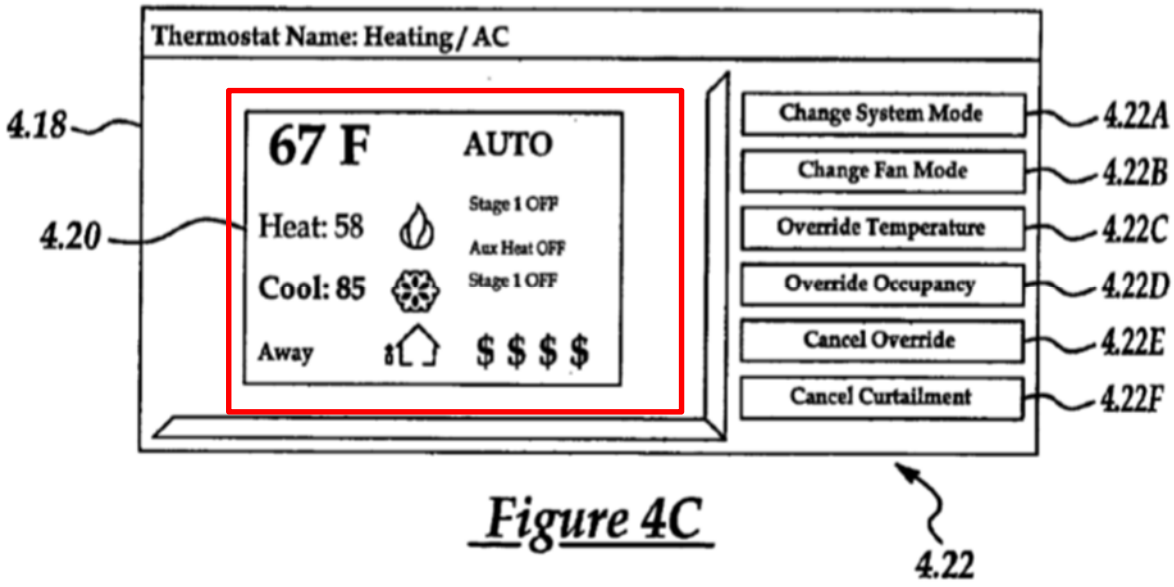


Figure 4C

Ex. 1022, FIG. 4B-4C (annotated). Patent Owner does not argue that Ehlers does not disclose claim 9, but only argues that a POSITA would not be motivated to combine Ehlers with Oinonen/Whitley. Patent Owner's argument rests on the incorrect notion that the user interface in Ehlers is designed for larger screens and would not be realizable on the smaller screens of Oinonen/Whitley. Response, 36.

During his deposition, Mr. Zatkovich opined that the Ehlers user interfaces require a screen resolution not available on mobile phones in 2004. Ex. 1040, 172:4-20. But Mr. Zatkovich was forced to concede that mobile phones in 2004, while limited in resolution, would be able to display at least some of the icons and buttons on the Ehlers user interface. *Id.* at 172:21-173:14. Of course, the claims do not require a particular resolution.

The 935 Patent also illustrates the futility of Mr. Zatkovich's argument. Figure 2 of the 935 Patent discloses, what Mr. Zatkovich described as, a mobile phone from 2004:

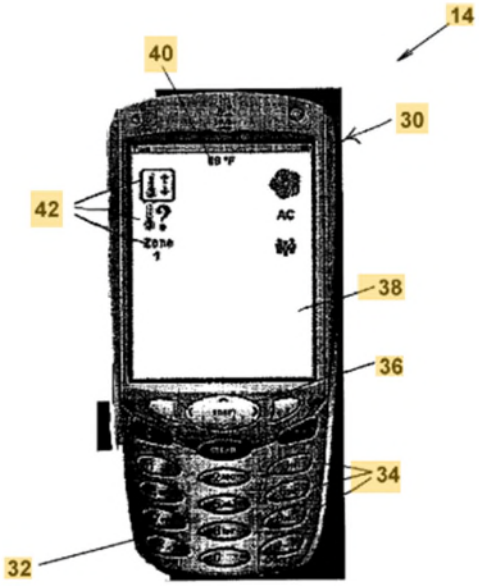


Fig. 2

Ex. 1001, FIG. 2; Ex. 1040, 179:6-17. Mr. Zatkovich explained that this mobile phone had a screen "[l]arger than an average cell phone would have" that contained

"graphics" and space for "eight or ten icons." *Id.* at 179:18-180:18. "[E]ight or ten icons" is entirely consistent with the Ehlers' user interface.

Moreover, Ehlers discloses that "the customer may access the GUI 4.02 through a remote device, such as a mobile phone and/or personal digital assistant." Ex. 1022, [0311]. Accordingly, Patent Owner's expert, the 935 Patent, and Ehlers all confirm that the Ehlers' user interface with graphical icons could be displayed on a mobile device.

3. Claim 12.

Claim 12 recites:

> The system of claim 11 wherein the wireless connectivity connection further comprises a first wireless connection interfacing with the base unit, a second wireless connection interfacing with the remote unit, and a non-wireless connection interfacing between the first wireless connection and the second wireless connection.

Ex. 1001, claim 12.[16] In the Petition, Petitioners explained two reasonable interpretations of this claim and explained how both interpretations were satisfied by Oinonen/Whitley and Bisleki/Wu. Petition, 29-30, 72. At institution, the Board

[16] There is no antecedent basis for "wireless connectivity connection." Mr. Zatkovich could not identify any antecedent basis and was forced to speculate. Ex. 1040, 190:19-193:8.

expressed skepticism about the interpretation of this claim and how each limitation was satisfied by the references. Paper No. 7, 25-26, 52-53. During his deposition, Mr. Zatkovich explained Patent Owner's interpretations of claim 12. While Petitioners do not necessarily agree with Mr. Zatkvoich's interpretations, Oinonen/Whitley and Bielski/Wu disclose claim 12 under any of the interpretations.

When asked about the "first wireless connection," Mr. Zatkovich explained that this was a wireless connection between, for example, the base unit and environmental unit.[17] Ex. 1040, 193:9-14, 206:19-21. Regarding the "second wireless connection," Mr. Zatkovich confirmed that he interpreted this the same way as the "first wireless connection" in that the "second wireless connection" is a wireless connection between, for example, the remote unit and base unit. *Id.* at 197:12-19, 206:21-207:1.

Regarding the "non-wireless connection interfacing between the first wireless connection and the second wireless connection," Mr. Zatkovich explained that this is a "wired connection or a physical device connecting the two" (*id.* at 197:20-198:3) and then provided at least two examples. First, Mr. Zatkovich explained that the base unit could have two wireless connections (with the remote unit and environmental

[17] A connection between the base unit and the environmental unit is not explicitly recited in the claims.

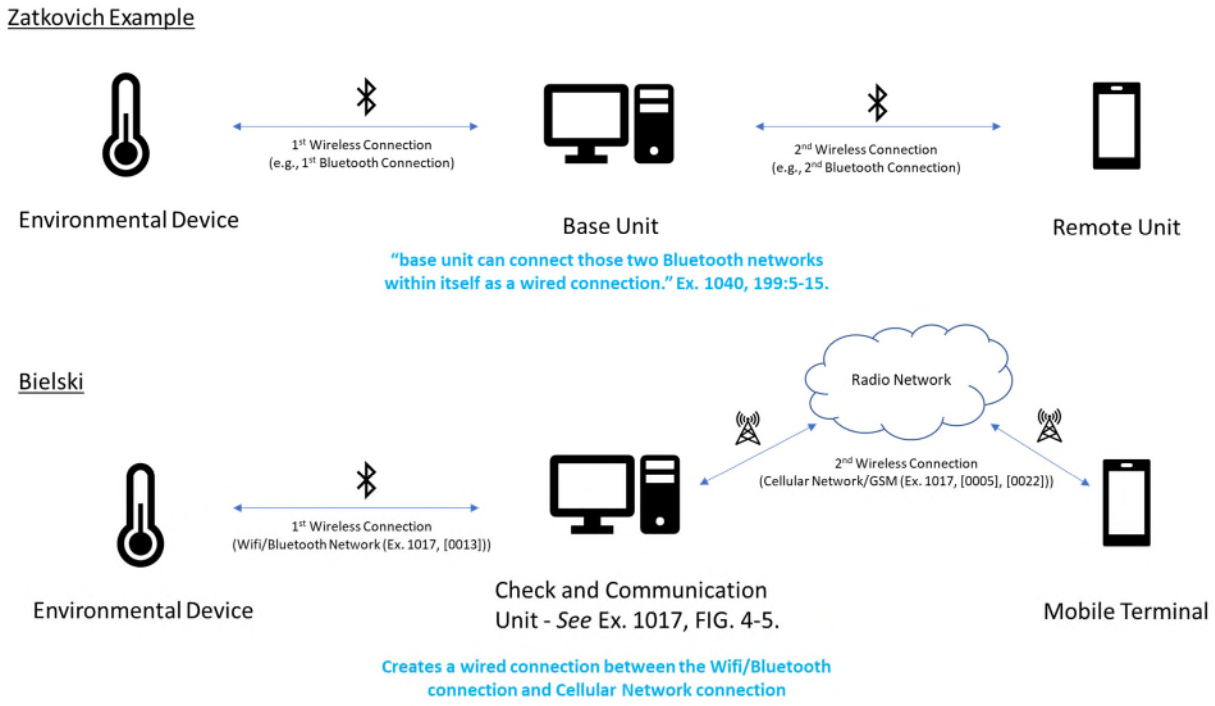
unit), such as Bluetooth connections, and that the base unit itself is the wired connection that connected two wireless networks, such as the two Bluetooth connections in his example. *Id.* at 199:5-15. Second, Mr. Zatkovich acknowledged that the central office switch of the cellular network will have wires that allow for wireless cellular communication (including transmission of SMS messages), such as between the remote unit and base unit. *Id.* at 211:21-212:7.

Attempting to distinguish the wires within the central office switch of the cellular network, Mr. Zatkovich remarked that these wires do not meet the claim because they are "incidental." *Id.* at 211:1-20. This is non-sensical. Neither claim 12 nor the specification distinguish between incidental and/or non-incidental wires. Claim 12 only recites a "non-wireless connection," which Mr. Zatkovich confirmed is a wired connection. *Id.* at 197:20-198:3. How or why wires are implemented are thus improper means by which to distinguish the prior art.

The combination of Bielski and Wu also discloses the limitations of claim 12 under both of Mr. Zatkovich's interpretations. Regarding the "first wireless connection interfacing with the base unit," Bielski discloses that the check and communication unit (base unit) interfaces with environmental units through Bluetooth or Wi-Fi, both of which are wireless connections. Ex. 1017, [0013], [0042], [0055]. Regarding the "second wireless connection interfacing with the remote unit," Bielski and Wu disclose using cellular networks to send messages,

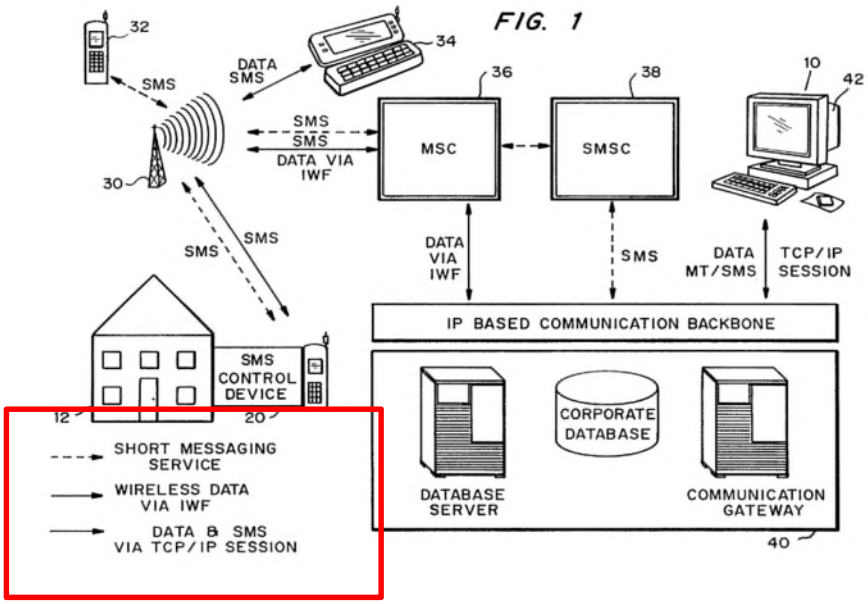
such as SMS messages, between the remote and base units. Ex. 1017, [0022]; Ex. 1018, 494-495. Bielski confirms the use of a "second wireless connection interfacing with the remote unit" in the form of "data transfer between the communication unit [base unit] and the network operator" can be a wireless connection as "according to the GSM, GPRS or UMTS standard" (Ex. 1017, [0043]) and that "[t]he check and communications unit (box) represents the technical connection component for the telephone and control/regulation world" (*id.* at [0073]).

Regarding the wired connection, Mr. Zatkovich's first example confirmed that a device that establishes a connection to two disparate wireless networks itself establishes the claimed wired connection. Ex. 1040, 199:10-15 ("We have two Bluetooth networks, one connected from the remote unit, one connected from the device. And they are -- come together. They both communicate with the base unit. And the base unit can connect those two Bluetooth networks within itself as a wired connection."). Bielski discloses a check and communication unit (the claimed base unit) that provides a non-wireless connection between a first Bluetooth/WiFi network (with an environmental unit) and a cellular (GSM) network (with the remote unit). Ex. 1017, [0005], [0013]-[0014], [0020]-[0021]. The similarity of Bielski's disclosure and Mr. Zatkovich's example is illustrated below:



Bielski/Wu also disclose claim 12 based on Mr. Zatkovich's concession of wires within the "central office switch" of a cellular network. Ex. 1040, 211:17-212:7. Indeed, both Bielski and Wu disclose use of the GSM network. Ex. 1017, [0022]; Ex. 1018, 494-495. The wires in the central office switch interface between the two wireless connections ultimately allows messages from the remote unit to be sent to the base unit to control various environmental devices.

Oinonen and Whitley also disclose claim 12. Oinonen and Whitley disclose cellular networks, such as GSM, which, according to Mr. Zatkovich, contain wires in the central office. Ex. 1040, 211:17-212:7; Petition, 16-19. Whitley further discloses a variety of wireless networks:



Ex. 1023, Fig. 1 (annotated). The gateway in Whitley communicates wirelessly with a user's cellular device and also provides additional wireless interfaces and an interface between a variety of environmental devices. Ex. 1023, 3:7-13, 8:27-9:1.

August 5, 2020
Date

By /S. Benjamin Pleune/
S. Benjamin Pleune (Reg. No. 52,421)

CERTIFICATION UNDER 37 C.F.R. § 42.24

Pursuant to 37 C.F.R. §42.24(d), I certify that this reply complies with the type-volume limits of 37 C.F.R. §42.24(c)(l) because it contains 5,532 words, according to the word-processing system used to prepare this petition, excluding the parts of this petition that are exempted by 37 C.F.R. §42.24(c) (including the table of contents, a table of authorities, a listing of facts which are admitted, a certificate of service or this certificate word count, and appendix of exhibits).

August 5, 2020 — By /S. Benjamin Pleune/

Date — S. Benjamin Pleune (Reg. No. 52,421)

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing PETITIONERS' REPLY BRIEF was served electronically on August 5, 2020 on counsel of record for Patent Owner as follows:

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