

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

iAPARTMENTS, INC.,
Petitioner,

v.

EDST LLC,
Patent Owner.

PGR2022-00059
Patent 11,189,118 B2

Before ST. JOHN COURTENAY III, KEVIN W. CHERRY, and
MICHELLE N. WORMMEESTER, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

DECISION
Granting Institution of Post-Grant Review
35 U.S.C. § 324, 37 C.F.R. § 42.4

I. INTRODUCTION

iApartments, Inc. (“Petitioner”) filed a petition for post-grant review of claims 1–20 of U.S. Patent No. 11,189,118 B2 (Ex. 1001, “the ’118 patent”). Paper 1 (“Pet.”). EDST LLC (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

We have authority to determine whether to institute a post-grant review, under 35 U.S.C. § 324 and 37 C.F.R. § 42.4. A post-grant review may not be instituted unless it is determined that “the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324 (2018); *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”).

Applying those standards, and upon considering the Petition, the Preliminary Response, and the evidence of record, we determine the information presented shows that it is more likely than not that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the ’118 patent. Accordingly, we determine that Petitioner has satisfied the burden under 35 U.S.C. § 324(a) to show that it is more likely than not that at least one of the challenged claims is unpatentable.

II. BACKGROUND

A. *Related Matters*

The parties identify the following matter related to the ’118 patent: *EDST, LLC and Quext IoT, LLC v. iApartments, Inc.*, Civil Action No. 8:22-cv-00272 (M.D. Fla.) (the “parallel proceeding”). Pet. 1; Paper 4, 2. Patent

Owner also identifies the following matter related to the '118 patent: *EDST, LLC et al v. Huarifu Technology Co., Ltd. et al*, Civil Action No. 2:22-cv-00365 (E.D. Tex. 2022). Paper 4, 2.

The parties also identify the following Board proceedings involving the parties: IPR2022-01468 (U.S. Patent No. 10,825,273 B2); IPR2022-01469 (U.S. Patent No. 10,803,685 B2). Pet. vii; Paper 8, 1.

B. Real Parties in Interest

Petitioner identifies itself as the real party in interest. Pet. 1. Patent Owner identifies itself and Quext IoT, LLC as real parties in interest. Paper 4, 1.

C. Overview of the '118 patent

The '118 patent is entitled “Smart Thermostat Hub,” and “is directed to an intelligent thermostat that can function as a hub having multi-band/multi-radio communication capabilities and can be implemented in a system for controlling and securing offline door locks and other smart devices within a multifamily property.” Ex. 1001 ('118 patent), code (54), 1:13–19. The patent describes high costs to implement wireless network infrastructure to use online keyless locks, and security shortcomings for use of offline keyless locks. *Id.* at 1:23–2:20.

The '118 patent describes that:

Online door locks may be controlled (e.g., locked and unlocked) remotely through an Internet-accessible network connection and locally by a device (e.g., a fob, smartphone, smartcard, etc.) that is placed in proximity to a sensor of the online door lock, while offline door locks can only be controlled (e.g., locked and unlocked) by a device (e.g., a fob, smartphone, smartcard, etc.) that is placed in proximity to a sensor of the offline door lock.

Id. at 1:44–52.

Figure 1, reproduced below, is a diagram of the system for managing and securing access credentials for accessing a multi-family residential property using smart devices, described in embodiments of the '118 patent.

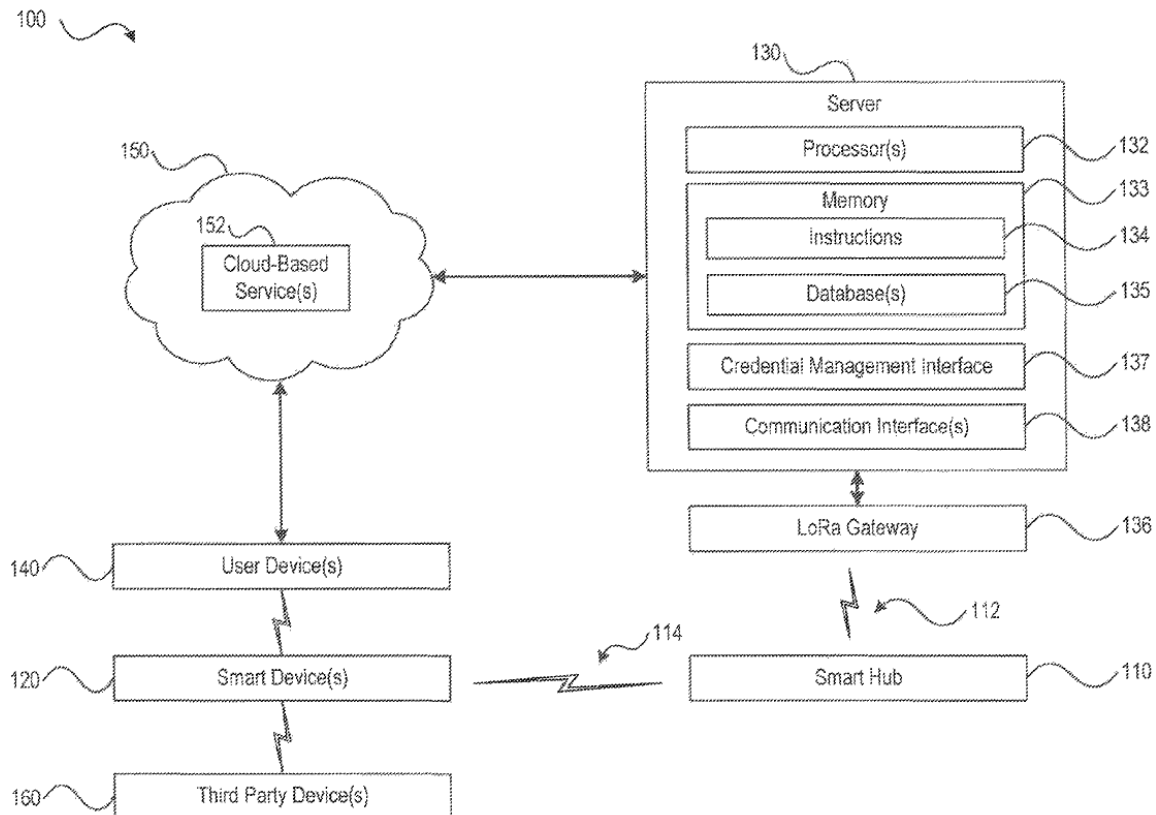


Figure 1, showing user devices 140, smart devices 120, server 130, communication interface 138, LoRa Gateway 136, communication link 112, smart hub 110, and non-LoRa WAN communication links 114. *Id.* at 4:21–7:6.

The '118 patent describes coupling server 130 to a LoRa gateway 136, which may communicate information to and from smart hub 110, using LoRa WAN communication link 112, which could use another low-power technology. *Id.* at 6:12–19. Smart hub 110 may be a smart thermostat hub. *Id.* at 6:45–46. In addition, another communication interface “may communicatively couple smart hub 110 to one or more smart devices 120 via non-LoRa WAN communication links 114, such as a Wi-Fi

communication link, a ZigBee communication link, a Bluetooth communication link (e.g., a Bluetooth low energy (BLE) communication link), and the like.” 6:32–40. The smart hub may provide “improvements with respect to security and property management through utilization of smart devices, such as an offline door lock, a thermostat, lights fixtures, and the like.” *Id.* at 9:5–11. The patent also describes that “server 130 may provide a property management platform that may be utilized to manage various aspects of a multi-family residential property.” *Id.* at 14:1–4.

The ’118 patent provides an example, where,

upon receiving the control information from server 130, smart hub(s) may identify one or more smart devices (e.g., one or more offline door locks) and may derive one or more commands for controlling the one or more identified smart devices in accordance with the control information, such as commands to disable access credentials specified in the control information at the identified offline door lock. Having determined the one or more smart devices to which the received control information pertains and deriving appropriate commands for controlling the one or more smart devices in accordance with the control information, smart hub(s) may initiate transmission of the derived commands to the smart devices via communication links provided by second communication interface (e.g., the non-LoRaWAN communication interface), and the smart devices may execute the commands. For example, upon receiving the commands, an offline door lock may disable the identified access credentials.

Id. at 14:30–48.

The patent also describes that “property management platform, on server 130, may provide user interfaces and databases, and perform functions “to control and automate various property management tasks. For example, the property management platform may periodically (e.g., daily,

weekly, monthly, etc.) analyze the resident databased to identify move out dates.” *Id.* at 15:59–16:5.

D. The Challenged Claims

Petitioner challenges claims 1–20 of the ’118 patent. Pet. 1. Of the challenged claims, claims 1 and 13 are independent. Claim 1, reproduced below with Petitioner’s identifiers for the claim limitations, is illustrative of the subject matter recited in the challenged claims.

[1pre] A system for controlling and securing a plurality of smart devices within a unit of a multi-family residential or commercial property, the system comprising:

[1a] a smart hub comprising:

one or more processors;

a memory communicatively coupled to the one or more processors;

[1b] a first communication interface configured to communicatively couple the one or more processors to a Long Range (LoRa) wide area network (LoRaWAN) communication link; and

[1c] a second communication interface configured to communicatively couple the one or more processors to the plurality of smart devices and to a user device associated with an occupant of the unit via a non-LoRaWAN communication link;

[1d] where the one or more processors are configured to:

receive control information via the LoRaWAN communication link from a property management platform for the multi-family residential or commercial property, the control information including a request for a status check associated with an electronic door lock,

[1e] identify at least one smart device of the plurality of smart devices based on the control information, the at least one smart device including the electronic door lock,

transmit a command derived from the control information to the at least one smart device via the non-LoRaWAN communication link,
[1f] receive status information from the electronic door lock via the non-LoRaWAN communication link based on transmission of the command, and
transmit the status information to the property management platform for the multi-family residential or commercial property via the LoRaWAN communication link.

Ex. 1001, 21:8–44; Pet. 126.

E. Evidence

Petitioner submits the following evidence:

Evidence	Exhibit No.
Declaration of Philip C. Dumas (“Dumas Decl.”)	1002
Cahill, US 2019/0043289 A1 (published Feb. 7, 2019, filed Jan. 7, 2017)	1005
Kraus, et al., US 2010/0282579 A1 (published Nov. 11, 2010, PCT filed Dec. 31, 2008) (“Kraus”)	1006
Deros, et al., US 2018/0110093 A1 (published Apr. 19, 2018, filed Oct. 25, 2017) (“Deros”)	1007
Ho, et al., US 2021/0319639 A1 (published Oct. 14, 2021, PCT filed June 13, 2019) (“Ho”)	1008
Michael McCole, “How to Make Nest’s Thermostat Your Smart-Home Hub,” Wired, Feb. 11, 2016 (“Wired”) ¹	1013

F. Asserted Ground of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1–20	112(a)	Written description

¹ Last retrieved from <https://www.archive.org/web/20160211091034/https://www.wired.com/2016/02/iot-cookbook-nest/> on Aug. 10, 2022. Ex. 1014, 2, 4.

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1–20	103 ²	Cahill, Deros
1–20	103	Kraus, Deros
1–3, 5–20	103	Kraus, Ho
4	103	Kraus, Ho, Wired

Pet. 3. Patent Owner disputes Petitioner’s asserted grounds of unpatentability. *See generally* Prelim. Resp.

G. *Eligibility for Post-Grant Review*

The post-grant review (“PGR”) provisions of the Leahy-Smith America Invents Act (“AIA”)³ apply only to patents subject to the first inventor to file provisions of the AIA. AIA § 6(f)(2)(A). Specifically, the first inventor to file provisions apply to any application for patent, and to any patent issuing thereon, that contains or contained at any time a claim to a claimed invention that has an effective filing date on or after March 16, 2013. AIA § 3(n)(1). Furthermore, “[a] petition for a post-grant review may only be filed not later than the date that is 9 months after the date of the grant of the patent or of the issuance of a reissue patent (as the case may be).” 35 U.S.C. § 321(c); *see also* 37 C.F.R. § 42.202(a) (setting forth the same). Petitioner has the burden of demonstrating eligibility for post-grant review. *See Mylan Pharms. Inc. v. Yeda Res. & Dev. Co.*, PGR2016-00010, Paper 9 at 10 (PTAB Aug. 15, 2016).

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. The ’118 patent claims benefit of a Oct. 16, 2018 filing date, which is after the effective date of the applicable AIA amendments. Ex. 1001, code (60), (63). Thus, we refer to the AIA version of 35 U.S.C. § 103. Our decision would be the same were we to apply the pre-AIA version of the statute.

³ Pub L. No. 112-29, 125 Stat. 284 (2011).

The '118 patent issued from U.S. Application No. 16/912,370, filed on June 25, 2020 (“the '370 application”). Ex. 1001, (21), (22).

The '370 application was filed as a continuation of U.S. Application No. 16/162,262, filed on October 16, 2018 (“the '262 application”) and now U.S. Patent No. 10,825,273 B2. *Id.* at (63).

Petitioner asserts that the '118 patent is available for post-grant review. Pet. 2. The Petition was filed on August 30, 2022, which is within nine months of the November 30, 2022 issue date of the '118 patent. Ex. 1001, (45); Pet. 2, 28. On this record, we determine that the '118 patent is eligible for post-grant review.

III. PATENTABILITY ANALYSIS

Petitioner contends that claims 1–20 of the '118 patent lack written description support, are unpatentable under 35 U.S.C. § 103 as obvious over Cahill in view of Deros, and are unpatentable under 35 U.S.C. § 103 as obvious over Kraus in view of Deros, claims 1–3 and 5–20 are unpatentable under 35 U.S.C. § 103 as obvious over Kraus in view of Ho, and claim 4 is unpatentable under 35 U.S.C. § 103 as obvious over Kraus in view of Ho and Wired. Pet. 3.

A patent claim is unpatentable under 35 U.S.C. § 103 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) when in evidence, objective evidence of nonobviousness.⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.”

In re GPAC Inc., 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

Petitioner contends that an ordinarily skilled artisan for the ’118 patent “would have had a Bachelor’s degree in Electrical Engineering, Computer Science, or an equivalent field, and two or more years of experience working in home or commercial security and automation systems and/or smart home or smart buildings technology.” Pet. 28 (citing Ex. 1002 (Dumas Decl.)) ¶¶ 55–56). Patent Owner does not dispute Petitioner’s definition of one of ordinary skill in the art. *See generally* Prelim. Resp.

Based on this record, we adopt Petitioner’s articulation of the level of ordinary skill in the art, which is consistent with the ’118 patent and the asserted prior art, and we apply it in our obviousness evaluations below. *See*

⁴ Patent Owner does not present arguments or evidence of secondary considerations in its Preliminary Response. Therefore, secondary considerations do not constitute part of our analysis herein.

Okajima v. Bourdeau, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art).

B. Claim Construction

Next, we turn to claim construction. In interpreting the claims of the '118 patent, we “us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b).” *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (*en banc*).

Petitioner contends two terms require construction: “offline door lock,” and “credential device.” Pet. 26–28. Patent Owner does not propose any terms for construction. *See generally* Prelim. Resp.

Having considered the record, we determine that no express claim construction is necessary for any claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. The Prior Art

Before turning to Petitioner’s asserted grounds of unpatentability, we provide brief summaries of the asserted references.

1. *Cahill (Ex. 1005)*

Cahill is a published U.S. patent application entitled “Offline Lock System and Method Thereof,” and relates to an offline lock system. Ex. 1005 (Cahill), code (54), ¶ 2. Cahill “provides an offline lock system having functionality of an online lock system, while maintaining efficiency and cost-effectiveness of a conventional offline lock system.” *Id.* ¶ 14.

Figure 1, reproduced below, is a schematic of Cahill’s system.

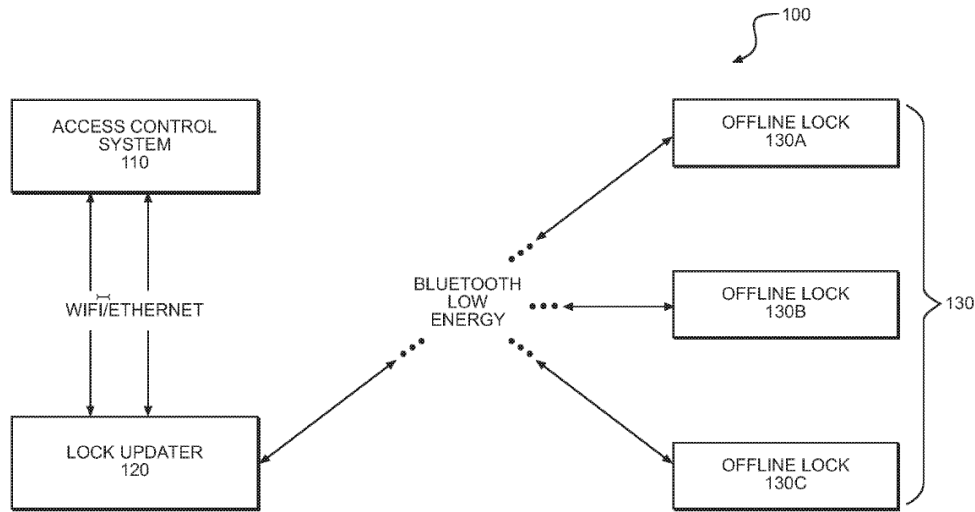


Figure 1, showing access control system (ACS) 110, lock updater 120, and offline locks 130. *Id.* ¶ 41. The ACS is a computer with network communication capabilities, which receives “commands to access the offline lock 130, to control the offline lock 130, to update the offline lock 130, to monitor the offline lock 130, or perform any function desired regarding the offline lock 130.” *Id.* ¶¶ 42–43, 45. Lock updater 120 receives commands from ACS 110, and sends commands to the offline locks 130, using Bluetooth Low Energy (BLE). *Id.* ¶ 49. The offline lock 130 can also send information to lock updater 120. *Id.* ¶ 73.

2. *Kraus (Ex. 1006)*

Kraus is titled “Method and System for Remotely Controlling Access to an Access Point,” and “relates to radio frequency mesh networks for controlling security and other devices in homes, to a door lock that can be monitored and controlled remotely through a mobile device or via a computer network using a radio frequency mesh network.” Ex. 1006 (Kraus), code (54), ¶ 2.

Figure 2, reproduced below, is a diagram of Kraus’ system.

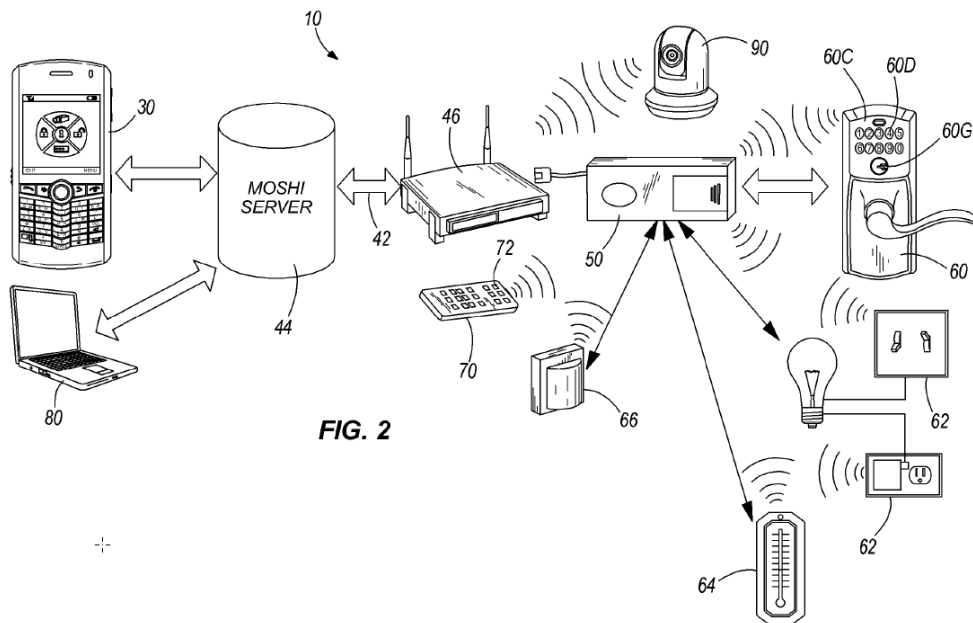


Figure 2, showing computer server 44, networked computer 80, mobile device 30, router 46, gateway device 50, door lock 60, electrical controller 62, and thermostat 64. *Id.* ¶¶ 59, 64, 80.

In one embodiment, door lock 60 is controlled by a keypad. *Id.* ¶ 71. In other embodiments, a smart card may be used instead of the keypad. *Id.* In yet another embodiment, the door lock can be part of networked system 10, and communicate with other devices via the network. *Id.* ¶ 73.

3. Deros (Ex. 1007)

Deros is titled “Systems and Methods for Conserving Guest Room Resources and Utilities Using Internet of Things Devices.” Ex. 1007 (Deros), code (54). Deros relates to “a Platform as a Service (PaaS) solution that includes a modular electronics system for interfacing with and controlling internet-of-things (IOT) devices in a hotel room, timeshare or rental property to improve guest experiences while reducing energy and resource consumption.” *Id.* ¶ 2.

Figure 1 of Deros, annotated by Petitioner and reproduced below, shows a schematic of the Deros system.

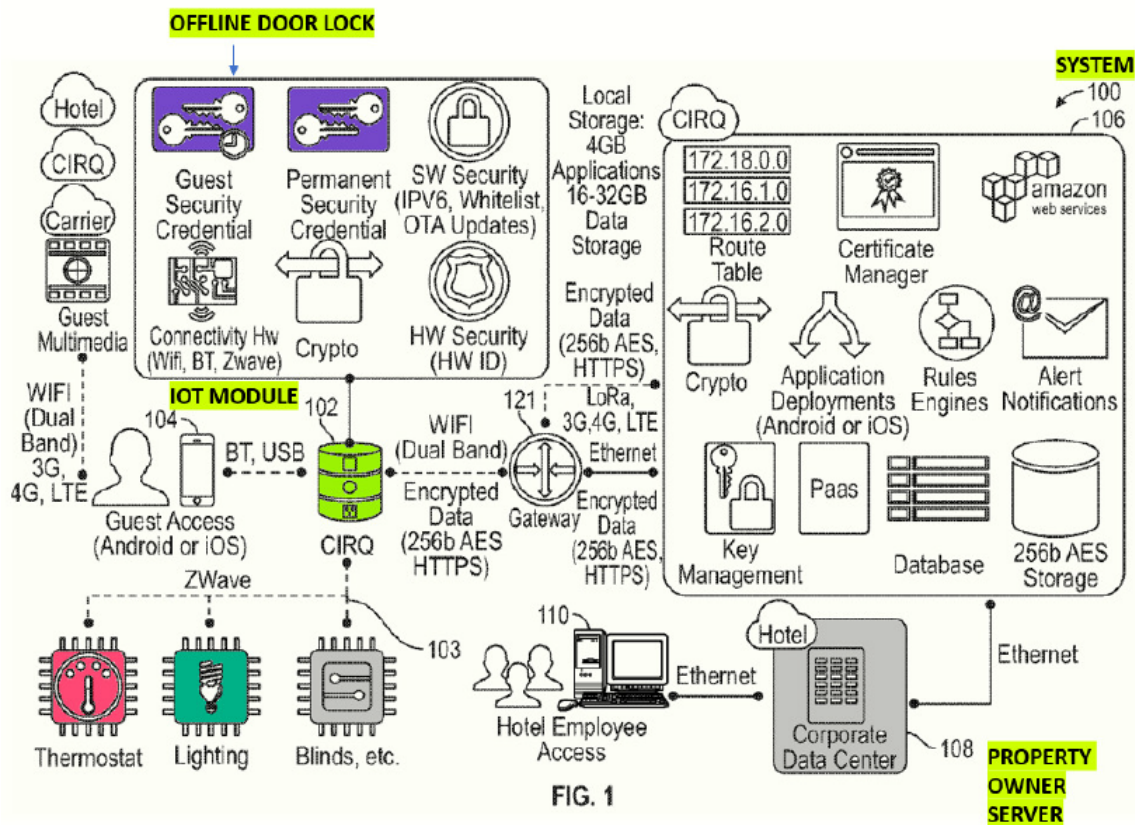


FIG. 1

Annotated Figure 1, showing a schematic of the Deros system.

Figure 1 shows enterprise server 106, including a PaaS platform, property owner server 108, configured to communicate with facilities

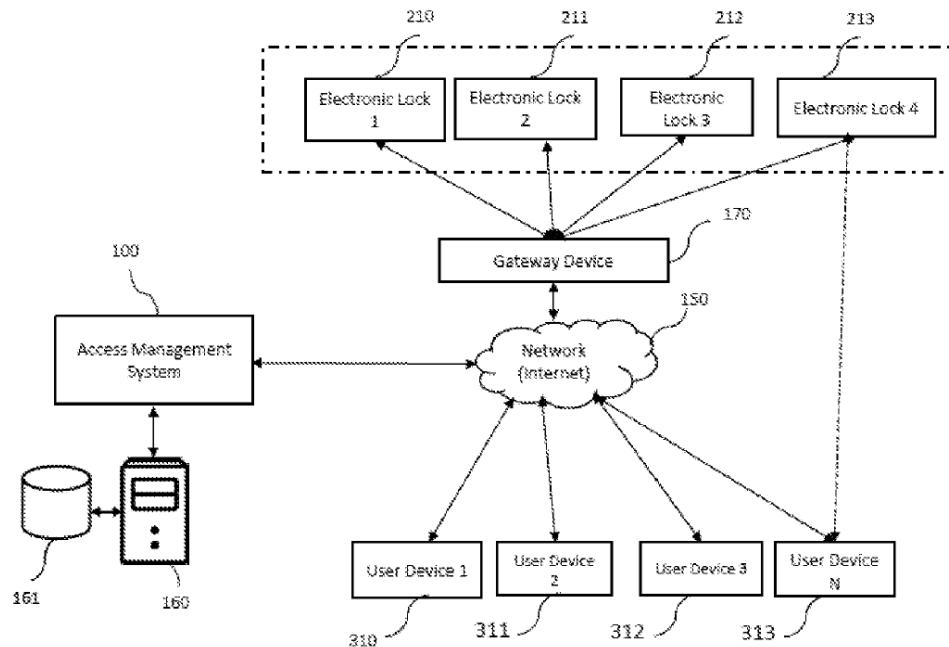
controller 110, IOT module 102, which is “configured to communicate with the enterprise server 106 through a gateway 121 (such as the internet) using Wi-Fi, LoRa, 3G, 4G, LTE, Ethernet, or any suitable wired or wireless protocol.” *Id.* ¶¶ 37, 38. The “in-room IOT module may be configured to remotely control an access feature such as a door lock,” and “the hotel facilities manager can remotely lock, unlock, check the locked status, or change the access code for IOT connected room door locks.” *Id.* ¶¶ 74–75.

4. *Ho (Ex. 1008)*

Ho is a published U.S. patent application entitled “System and Method for Managing Electronic Locks.” Ex. 1008 (Ho), code (54). Ho “relates to access management systems and methods and electronic locking devices with multi-factor authentication.” *Id.* ¶ 1. Ho “provides for an access management system for controlling multiple entry points each secured by an electronic lock with an associated number of authorized users.” *Id.* ¶ 42.

Ho describes a system that includes an application server 160 that communicates over a network 150, with several software modules “accessible by administrators and authorized users via a mobile application or web application for configuration, provisioning and deprovisioning of multiple authorized users for multiple entry points each secured by an electronic lock.” *Id.* ¶¶ 48, 50.

Figure 3, reproduced below, is a diagram of one embodiment of the Ho system.



Ho's Figure 3 shows a high-level overview of the access management system, with access management system 100, executing on application server 160, electronic locks 210–213, gateway 170, network 150, and user devices 310–313. *Id.* ¶ 62.

The electronic locks 210–213 include sensors or transceivers that are capable of connecting to the network 150 via low power wireless transmission standards such as ZWave, Zigbee or Bluetooth low energy. The electronic locks 210–213 include sensors equipped with such low power wireless technology, and are connected to the network 150 via the gateway device 170.

Id. Network 150 may be a Low Power Wide Area Network (LPWAN), and the electronic locks may be capable of using LP-WAN technologies such as “Lora” to connect to the network 150 with the advantage of lower cost, longer battery life and higher connection density. *Id.* ¶ 61.

5. Wired (Ex. 1013)

Wired is an online article that describes the Nest Learning Thermostat, titled “How to Make Nest’s Thermostat Your Smart-Home Hub.” Wired, 1. The article describes how the device is not only a

thermostat, but also connects to other devices to control them, by being “interoperable with compatible devices.” *Id.* Described is a “service called If This Then That (IFTTT) has pre-made recipes that can connect your devices. You can use the service to program your devices to run routines, react to triggers, or pass commands to other devices in your home.” *Id.* at 2.

D. Alleged Ground of Unpatentability Over Cahill and Deros (Ground 2)

Petitioner contends that claims 1–20 of the ’118 patent are unpatentable under 35 U.S.C. § 103 as obvious over Cahill in view of Deros. Pet. 39–81. Patent Owner opposes. Prelim. Resp. 21–39. Having considered the arguments and evidence before us, we determine that the record establishes that it is more likely than not that Petitioner would prevail on this asserted ground of unpatentability.

With respect to claim 1, Petitioner explains Cahill and Deros disclose, to the extent it is limiting, the preamble, limitation [1P]: “[a] system for controlling and securing a plurality of smart devices within a unit of a multi-family residential or commercial property, the system comprising,” Pet. 48–50 (citing Ex. 1005 (Cahill) ¶ 3, Fig. 5; Ex. 1002 (Dumas Decl.) ¶¶ 169, 171; Ex. 1007 (Deros) ¶¶ 2, 3, 11, 85). Petitioner contends that Cahill discloses limitation [1a]: “a smart hub comprising: one or more processors; a memory communicatively coupled to the one or more processors,” *id.* at 50–51 (citing Ex. 1002 (Dumas Decl.) ¶ 173; Ex. 1005 (Cahill) ¶ 61). Petitioner relies on the combination of Cahill and Deros to account for limitation [1b]: “a first communication interface configured to communicatively couple the one or more processors to a Long Range (LoRa) wide area network (LoRaWAN) communication link,” *id.* at 51–54 (citing Ex. 1005 (Cahill)

¶¶ 43, 46, Fig. 1, 3; Ex. 1002 (Dumas Decl.) ¶¶ 174–177; Ex. 1007 (Deros), Fig. 1, ¶ 38). Petitioner contends that the combination of Cahill and Deros accounts for limitation [1c]: “a second communication interface configured to communicatively couple the one or more processors to the plurality of smart devices and to a user device associated with an occupant of the unit via a non-LoRaWAN communication link,” *id.* at 54–58 (citing Ex. 1005 (Cahill) ¶¶ 65, 86, 87, 96; Ex. 1007 (Deros) ¶¶ 38, 39; Ex. 1002 (Dumas Decl.) ¶¶ 179–186). Petitioner asserts that the combination of Cahill and Deros accounts for limitation [1d]: “where the one or more processors are configured to: receive control information via the LoRaWAN communication link from a property management platform for the multi-family residential or commercial property, the control information including a request for a status check associated with an electronic door lock,” *id.* at 58–60 (citing Ex. 1005 (Cahill), Figs. 2, 3, ¶¶ 58, 65, 71, 72, 91, 95; Ex. 1007 (Deros) ¶ 75; Ex. 1002 (Dumas Decl.) ¶¶ 187–190). Petitioner argues that Cahill accounts for limitation [1e]: “identify at least one smart device of the plurality of smart devices based on the control information, the at least one smart device including the electronic door lock, transmit a command derived from the control information to the at least one smart device via the non-LoRaWAN communication link,” *id.* at 60–61 (citing Ex. 1005 (Cahill) ¶ 91; Ex. 1002 (Dumas Decl.) ¶¶ 191–192). Petitioner submits that the combination of Cahill and Deros discloses limitation [1f]: “receive status information from the electronic door lock via the non-LoRaWAN communication link based on transmission of the command, and transmit the status information to the property management platform for the multi-family residential or commercial property via the LoRaWAN

communication link,” *id.* at 61–62 (citing Ex. 1005 (Cahill) ¶¶ 58, 61, 64, 65, Figs. 3, 4; Ex. 1002 (Dumas Decl.) ¶¶ 193–194).

With respect to the motivation to combine Cahill and Deros, Petitioner argues that a person of ordinary skill “would have been motivated to modify Cahill’s smart hub (lock updater 120) to incorporate a LoRa communication link as taught by Deros.” Pet. 39. Petitioner notes that

Cahill discloses a non-exhaustive list of short range and long range smart hub communication protocols including “wi-fi, wi-fi direct, infrared (IR) wireless communication, satellite communication, broadcast radio communication, Microwave radio communication, Bluetooth, Bluetooth Low Energy (BLE), Zigbee, near field communication (NFC), and radio frequency (RF) communication, USB, Firewire, Ethernet, etc., ***but are not limited thereto***,” to communicate with the ACS. (Ex.1005 ¶[0046].) Cahill also discloses lock updater 120 “may communicate at frequencies ranging ***from 0.001 MHz through 3000 MHz, but is not limited thereto***.” (Id.)

Pet. 39–40.

Petitioner further notes that “Deros discloses that ‘IOT module 102 is configured to communicate with the enterprise server 106 through a gateway 121 (such as the internet) using Wi-Fi, ***LoRa***, 3G, 4G, LTE, Ethernet, ***or any suitable wired or wireless protocol***.’” *Id.* at 40 (citing Ex. 1007 (Deros) ¶ 38). Petitioner submits that “LoRa networks use frequency ranges within the range expressly disclosed in Cahill of 0.001-3000 MHz, namely LoRaWAN operates in the Sub-GHz frequency in North America, ranging from 902MHz-928MHz.” *Id.* (citing Ex. 1002 (Dumas Decl.) ¶¶ 151–154). Petitioner contends that “[u]sing a known LoRaWAN protocol, as disclosed in Deros, would be a simple substitution of one long range communication protocol (e.g., satellite, broadcast radio, and/or microwave) for another and would obtain predictable results of wide area long range communications,

just like with satellite, broadcast radio, and/or microwave communication protocols.” *Id.* at 40–41 (Ex. 1002 (Dumas Decl.) ¶ 155). Petitioner further contends that using LoRaWan “would involve applying a known technique (use of LoRa) to a known device (a smart hub with long range communication abilities) ready for improvement to yield predictable results of low power, long range communication abilities under a known standard of LoRa.” *Id.* at 41 (citing Ex. 1002 (Dumas Decl.) ¶ 155).

We find that Petitioner has shown sufficiently that the combination of Cahill and Deros accounts for the limitations of claim 1, and that Petitioner has shown a motivation to combine Cahill and Deros. Patent Owner raises several arguments why claim 1 would not have been obvious over the combination of Cahill and Deros. We consider them each in turn.

1. “property management platform”

Patent Owner argues that the combination of Cahill and Deros fails to account for the “property management platform” recited in limitation [1d]. Prelim. Resp. 21–28. Patent Owner contends the ’118 patent “is clear that ‘property management’ functions are **additional** functionality above and beyond ‘security’ functions.” *Id.* at 23 (citing Ex. 1001 (’118 patent), 8:48, 9:9). Patent Owner further contends “Petitioner has not shown how [the prior art it relies on] discloses the ‘property management’ aspect of the claimed ‘property management platform,’” because, according to Patent Owner, “Cahill relates solely to security.” *Id.* Patent Owner also argues that the Petition is unclear as to what exactly it is mapping to the “property management platform.” *Id.* at 23–28.

We find that Petitioner has shown sufficiently that the combination of Cahill and Deros accounts for the claimed “property management platform.”

To begin with, on this record, we disagree with Patent Owner’s contention that the “property management platform” requires additional functionality above and beyond security functions. Prelim. Resp. 22–23. Patent Owner provides no construction for the term or sufficient justification for limiting the term in the manner proposed. *Id.* In particular, we do not believe, on this record, that the references in the specification to “security and property management” justifies reading additional required functionality into the term “property management platform.”

As Petitioner explains, Cahill discloses that signals and information are communicated to and from Access Control System (ACS) 110/210 and lock updater 120/220 via wired or wireless network. Pet. 58 (citing Ex. 1005 (Cahill), Figs. 2, 3, ¶¶ 65, 71, 72, 91, 95). Petitioner explains that such signals and information include “information regarding each of the plurality of offline locks 130 . . . , commands to control the offline locks 130, status types of the offline locks....” *Id.* (Ex. 1005 (Cahill) ¶ 58). Patent Owner’s arguments that Petitioner’s mapping is “unclear” are also unpersuasive. *See* Prelim. Resp. 23–24. We can readily discern that the property management platform is mapped to ACS 110/220 of Cahill, and find Cahill sufficiently clear and Mr. Dumas’s testimony understandable. *See* Ex. 1002 (Dumas Decl.) ¶¶ 95, 187. Thus, we find this sufficient, at this stage of the proceeding, to show that, at least, Cahill accounts for this limitation.

2. “LoRaWAN”

Patent Owner contends Petitioner (1) fails to explain why a POSITA would have been motivated to combine Cahill and Deros to include LoRaWAN and (2) cannot show that Deros discloses the LoRaWAN

limitation. Prelim. Resp. 28–37. With respect to the motivation to combine, Patent Owner asserts that Petitioner’s substitution theory rests on a “false premise.” *Id.* at 30. Patent Owner contends that “Cahill’s listing of satellite, broadcast radio, and microwave is nothing more than a disclosure of different frequency bands,” and “[t]hey are not types of ‘protocols,’ as Petitioner’s ‘simple substitution’ theory assumes.” *Id.* We disagree. Patent Owner is correct that some of the things listed in the passage do not appear to be protocols, but, at least several of them are, including the well-known wi-fi and Bluetooth protocols.

Patent Owner also argues that, “[r]egardless, Petitioner’s ‘simple substitution’ theory also fails because it is not substantiated with evidence and reasoning.” *Id.* Patent Owner asserts that “Petitioner does not demonstrate or explain *why* it would have been a ‘simple’ substitution to modify Cahill’s system by employing a LoRaWAN in place of satellite, broadcast radio, and/or microwave transmissions.” *Id.* We do not find this contention persuasive. Deros and Cahill provide evidence that substituting one known communication protocol or method for another was well within the skill in the art. As Cahill and Deros make clear, any number of known communication methods may be used interchangeably, and were known by those of ordinary skill in the art. *See* Ex. 1005 (Cahill) ¶ 46; Ex. 1007 (Deros) ¶ 38. Indeed, the ’118 patent supports this understanding of the level of ordinary skill. The ’118 patent provides no detailed explanation of the LoRa standard or how it operates, assuming that a person of ordinary skill would already know that. For example, the ’118 patent states

First communication interface of server 130 may be configured to communicate with smart hub 110 via Long Range (LoRa) wide area network (LoRaWAN) communication link 112 and

second communication interface of server 130 may be configured to communicate with the one or more communication networks via a non-LoRaWAN communication link, such as a Institute of Electrical and Electronics Engineers (IEEE) 802.11 communication link, an Ethernet communication link, and the like. . . . The LoRa gateway 136 may be configured to relay information received from the server 130 to one or more smart hubs using the LoRaWAN communication link 112 and to relay information received from one or more smart hubs via the LoRaWAN communication link 112 to the server 130. *It is noted that although communication link 112 may be described herein as a LoRaWAN communication link or LoRa-based communication link, it should be understood that communication link 112 may be a communication link within a low-power, wide area network (LPWAN) or another type of network topology utilizing low power- or LoRa-based communication links.* For example, in an embodiment, communication link 112 may utilize narrowband-Internet of Things (NB-IoT) communication links, Sigfox-based communication links, Weightless communication links, and the like.

Ex. 1001, 6:3–29 (emphasis added). Here, the ’118 patent’s own disclosure is consistent with our finding that it would have been well within the level of skill in the art to make this substitution. *See Uber Tech. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020) (“The specification of the ’593 patent is entirely silent on how to transmit user locations and maps from a server to a user’s mobile device, suggesting that a person of ordinary skill in the art was more than capable of selecting between the known methods of accomplishing this.”).

“The motivation-to-combine analysis is a flexible one.” *Intel Corp. v. PACT XPP Schweiz AG*, --- F.4th ----, 2023 WL 2469631, at *4 (Fed. Cir. Mar. 13, 2023). “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 420. And

“[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421. So, “in many cases[,] a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. Similarly, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417. Here, both references suggest that a wide variety of known wireless interfaces can be used. Deros teaches that one of those known interfaces is LoRa. Thus, on the current record, Petitioner has shown sufficiently that Cahill suggests that any one of a number of known communication techniques can be used for an interface to couple one or more processors of the smart hub to a LoRaWAN link.

Finally, Patent Owner contends that “Petitioner’s obviousness argument also fails because it lacks any rationale for deviating from Deros’s teaching of providing LoRa functionality in a gateway that is separate and distinct from the IOT module (Petitioner’s alleged smart hub).” Prelim. Resp. 34. In particular, Patent Owner argues that in Deros, the “first interface” that Petitioner points to is part of a separate device—gateway 121. *Id.* Thus, the LoRa communication link relied on by Petitioner is not part of IOT module 102, which Petitioner equates with the claimed “smart hub.” *Id.*

We are not persuaded by Patent Owner’s argument. It does not matter whether Deros teaches that its “smart hub” includes the LoRa functionality as part of the IOT module or as a device connected to the IOT module, because Cahill teaches that communication functionality can be directly incorporated into the “smart hub.” *See, e.g.*, Pet. 52–53 (“Cahill discloses a

smart hub (lock updater 120) including a first interface (transmitter 115 and receiver 124) to communicatively couple the one or more processors to a wide area network (WAN) communication link (e.g., satellite, broadcast radio, microwave communication link).”). “[I]t is not necessary that [two pieces of prior art] be physically combinable to render obvious” the asserted patent. *Allied Erecting and Dismantling Co., Inc. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (quoting *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983)). Rather, the question is whether the claimed inventions “are rendered obvious by the teachings of the prior art as a whole.” *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (noting that whether one prior art reference can be incorporated into another is “basically irrelevant.”) In evaluating the combination of Cahill and Deros, the prior art undisputedly discloses a smart hub with a communication interface, which can include a variety of known communication interfaces, such as LoRa. Thus, the combined teachings of Cahill and Deros account for the limitation.

3. “Smart Hub” Limitations

Patent Owner argues that “[a]ll of the Challenged Claims require a ‘smart hub’ with ‘one or more processors’ that [i] ‘receive control information’ and [ii] ‘transmit a command derived from the control information.’” Prelim. Resp. 37 (citing *inter alia* limitations [1d] and [1e]). Patent Owner notes that the cited portions of Cahill describe ACS 110 sending a “signal and information” to lock updater 120, which then sends a “signal and information” to locks 130. *Id.* at 37–38. Patent Owner asserts that Petitioner does not explain how the “signal and information” sent by ACS 110 and the “seemingly *identical* ‘signal and information’ sent by the lock updater 120 represent two aspects of the Challenged Claims—i.e., the

claimed ‘control information’ and the separately claimed ‘command derived from the control information.’” *Id.* at 38–39.

We find that Petitioner has shown sufficiently that Cahill teaches the disputed limitations. As Cahill explains,

The ACS 110 transmits a signal and information to the lock updater 120. In S102, the lock updater 120 sends a signal and information via Bluetooth communication to at least one of the plurality of offline locks 130. In S103, upon receipt of the Bluetooth signal, the at least one of the plurality of offline locks 130 wakes up from a low power mode and switches to an online mode. In S104, the at least one of the plurality of offline locks 130 changes its setting based on the information received from the lock updater 20. In S105, the at least one of the plurality of offline locks 130 switches back to the low power mode. The operations in FIG. 6 are directed to the method of changing a setting of at least one of the plurality of offline locks 130 within the offline lock system 100, but also may pertain to other types of control and/or information distribution to the offline locks 130, not limited to changing only of settings.

Ex. 1005 (Cahill) ¶ 91.

We disagree with Patent Owner’s suggestion that the “signal and information” are “identical.” In Paragraph 91, Cahill refers to each signal sent by the ACS or the lock updater as “a signal and information” not one as “a signal and information” and the other as “the signal and information.” *See id.* Cahill’s usage of “a signal and information,” for each, suggests that the two signals are different. Also, it is clear that the “signal and information” sent by the lock updater is related to the “signal and information” sent by the ACS, which at least suggests that the “signal and information” sent by the lock updater is “derived from” the “signal and information” sent by the ACS. *See* Ex. 1002 (Dumas Decl.) ¶¶ 191–192. We also find that Cahill teaches that the signal sent from lock adapter 20 is a

command because it causes the locks to switch modes and can cause them to change settings. Ex. 1005 (Cahill) ¶ 91. Thus, we find that Petitioner has shown sufficiently, on this record, that Cahill teaches or suggests this limitation.

4. Conclusion as to Claim 1

Having reviewed the evidence and arguments of both sides, we determine that, on this record, Petitioner has shown sufficiently that the combination of Cahill and Deros accounts for the limitations of claim 1, and that a person of ordinary skill would have been motivated to combine the references in the manner proposed. Accordingly, we determine that Petitioner has shown that it is more likely than not that claim 1 would have been obvious over the combination of Cahill and Deros.

5. Claims 2–20

Petitioner provides a detailed mapping for how the combination of Cahill and Deros accounts for the limitations of claims 2–20. Pet. 63–81. Petitioner also provides a motivation to combine Cahill and Deros. *Id.* at 39. At this stage of the proceeding, Patent Owner does not raise any arguments regarding these claims beside the arguments considered above with respect to claim 1. We have reviewed Petitioner’s evidence and argument and, at this stage, we find it sufficient. Accordingly, we find that, on the current record, Petitioner has shown that it is more likely than not that claims 2–20 would have been obvious over the combination of Cahill and Deros.

*E. Alleged Ground of Unpatentability Over Kraus and Deros
(Ground 3)*

Petitioner contends that the Kraus in combination with Deros renders obvious claims 1–20. Pet. 81–111. Patent Owner opposes. Prelim.

Resp. 40–48. Having considered the arguments and evidence before us, we determine that the record establishes that it is more likely than not that Petitioner would prevail on this asserted ground of unpatentability.

With respect to claim 1, Petitioner explains Kraus and Deros disclose, to the extent it is limiting, the preamble, limitation [1P]: “[a] system for controlling and securing a plurality of smart devices within a unit of a multi-family residential or commercial property, the system comprising,” Pet. 85–86 (citing Ex. 1006 (Kraus) ¶¶ 59, 93, Fig. 2; Ex. 1002 (Dumas Decl.) ¶¶ 250, 252; Ex. 1007 (Deros) ¶¶ 2, 3, 11, 85). Petitioner contends that Kraus discloses limitation [1a]: “a smart hub comprising: one or more processors; a memory communicatively coupled to the one or more processors,” *id.* at 87–88 (citing Ex. 1002 ¶ 254; Ex. 1006 (Kraus) ¶ 62). Petitioner relies on the combination of Kraus and Deros to account for limitation [1b]: “a first communication interface configured to communicatively couple the one or more processors to a Long Range (LoRa) wide area network (LoRaWAN) communication link,” *id.* at 88–90 (citing Ex. 1006 (Kraus) ¶¶ 64, 93, 76, Fig. 2; Ex. 1002 (Dumas Decl.) ¶¶ 256–259; Ex. 1007 (Deros), Fig. 1, ¶ 38). Petitioner contends that Kraus accounts for limitation [1c]: “a second communication interface . . . configured to communicatively couple the one or more processors to the plurality of smart devices . . . and to a user device . . . associated with an occupant of the unit via a non-LoRaWAN communication link,” *id.* at 91–93 (citing Ex. 1006 (Kraus) ¶¶ 61, 62, 63, 80, 86, Fig. 3; Ex. 1002 (Dumas Decl.) ¶¶ 262–264). Petitioner asserts that the combination of Kraus and Deros account for limitation [1d]: “where the one or more processors are configured to: receive control information via the LoRaWAN

communication link from a property management platform for the multi-family residential or commercial property, the control information including a request for a status check associated with an electronic door lock,” *id.* at 93–94 (citing Ex. 1006 (Kraus), Figs. 9, 11, ¶¶ 86, 102, 103; Ex. 1002 (Dumas Decl.) ¶ 267).

Petitioner argues that Kraus accounts for limitation [1e]: “identify at least one smart device of the plurality of smart devices based on the control information, the at least one smart device including the electronic door lock, transmit a command derived from the control information to the at least one smart device via the non-LoRaWAN communication link,” *id.* at 95 (citing Ex. 1006 (Kraus) ¶ 86; Ex. 1002 (Dumas Decl.) ¶¶ 269). Petitioner submits that the combination of Kraus and Deros discloses limitation [1f]: “receive status information from the electronic door lock via the non-LoRaWAN communication link based on transmission of the command, and transmit the status information to the property management platform for the multi-family residential or commercial property via the LoRaWAN communication link,” *id.* at 95–96 (citing Ex. 1002 (Dumas Decl.) ¶ 270).

With respect to the motivation to combine, Petitioner argues that “[i]t would have been obvious to a POSA to modify Kraus’s smart hub to incorporate the various communication links usable with Deros’ smart hub (IoT control module 102).” Pet. 82. Petitioner submits that “Kraus discloses a non-exhaustive list of communication wireless networking protocols used by wireless router 46 and gateway 50 to communicate with the property management platform, including a local-area network (LAN) via an Ethernet connection, ‘although other types of connections are possible’ such as ‘using an IEEE 802.11x-based wireless networking protocol.’” *Id.* (citing Ex. 1006

(Kraus) ¶ 64). Petitioner asserts that “Deros discloses that IoT module 102 is configured to communicate with a property management platform (enterprise server 106) ‘through a gateway 121 (such as the internet) using Wi-Fi, LoRa, 3G, 4G, LTE, Ethernet, or any suitable wired or wireless protocol.’” *Id.* (citing Ex. 1007 (Deros) ¶ 38). Petitioner argues that “[u]sing such well-known wireless network protocols as taught by Deros, in the system of Kraus, would involve merely substituting one well-known communication protocol for another with predictable results of long range wireless communications.” *Id.* (Ex. 1002 (Dumas Decl.) ¶ 244).

Petitioner notes that “Kraus discloses a ZWave communication link between the gateway and smart devices but states ‘[o]ther protocols for implementing an RF mesh network can be used as well, if desired.’” *Id.* at 83 (citing Ex. 1006 (Kraus) ¶ 61). Petitioner further notes that Deros discloses that “IOT module 102 is configured to communicate with the devices which comprise the IOT network 103 using ZWave, Bluetooth, or any suitable wired or wireless protocol.” *Id.* (citing Ex. 1007 (Deros) ¶ 38). Petitioner argues that “[u]sing Bluetooth with Kraus would involve mere substitution of one well-known communication protocol for another as taught by Deros. *Id.* (citing Ex. 1002 (Dumas Decl.) ¶ 245).

We find that Petitioner has shown sufficiently that the combination of Kraus and Deros accounts for the limitations of claim 1, and that Petitioner has shown a motivation to combine Kraus and Deros. Patent Owner raises several arguments why claim 1 would not have been obvious over the combination of Kraus and Deros. We consider them each in turn.

1. “*LoRaWAN*”

Patent Owner raises two arguments regarding the “Long Range (LoRa) wide area network (LoRaWAN) communication link” limitation of the challenged claims. Prelim. Resp. 40–43. First, Patent Owner asserts that Petitioner “fails to explain why a [person of ordinary skill in the art] would have been motivated to combine Kraus and Deros to provide the ‘Long Range (LoRa) wide area network (LoRaWAN) communication link.’” *Id.* at 41. Second, Patent Owner argues that Petitioner cannot show that Deros discloses a smart hub with a “Long Rang (LoRa) wide area network (LoRaWAN) communication link.” *Id.*

With respect to the motivation to combine, we find that Petitioner has shown an adequate motivation to combine Kraus and Deros. As with the Cahill in the Cahill and Deros challenge, “Kraus discloses a non-exhaustive list of communication wireless networking protocols used by wireless router 46 and gateway 50 to communicate with the property management platform, including a local-area network (LAN) via an Ethernet connection, ‘although other types of connections are possible’ such as ‘using an IEEE 802.11x-based wireless networking protocol.’” Pet. 82. Petitioner explains, supported by the testimony of Mr. Dumas, “[u]sing such well-known wireless network protocols as taught by Deros, in the system of Kraus, would involve merely substituting one well-known communication protocol for another with predictable results of long range wireless communications.” *Id.* (citing Ex. 1002 (Dumas Decl.) ¶ 244). As we discussed with respect to Cahill and Deros ground, the current record supports Petitioner’s contention that it was within the level of skill in the art to substitute LoRa for other known wireless communication protocols. Thus, on the current record,

Petitioner has shown sufficiently that Kraus suggests that any one of a number known communication techniques can be used for an interface to couple one or more processors of the smart hub to a LoRaWAN link.

We also are not persuaded by Patent Owner's contention that the combination fails because Deros fails to disclose that LoRa communication link is part of the smart hub (IOT Module). *See* Prelim. Resp. 42–43. As we explained in detail with the Cahill and Deros combination, this argument fails because the combined teachings of the references—Kraus and Deros—account for this limitation, even if Deros does not. In particular, Petitioner maps the claimed “smart hub” to Kraus's gateway 50 and wireless router 46. *See* Pet. 89 (showing an annotated version of Figure 2 identifying what Petitioner contends is the “smart hub”). Petitioner explains that

Kraus's smart hub includes an IP transceiver 50C “formats the signals it sends according to the communications protocol, e.g. Internet Protocol, used to connect the computer network 40 (e.g. the internet).” (Ex.1006 ¶[0064].) When using a wireless protocol, transceiver 50C is coupled to wireless router 46 “that communicates with a computer network 40 (e.g., a home network (wired or wireless), an Internet network, a **wide-area network**, a local-area network, etc.).” (*Id.* ¶[0093], FIG.2.) Kraus's smart hub (46, 50) is linked to a property management platform (computer 80 and/or mobile device 30 and/or program running on server 44) (*Id.* ¶[0076]) via wide-area network (WAN). (Ex.1002 ¶ 256).

Pet. 88–89.

Thus, Petitioner shows sufficiently that the combined teaching of Kraus and Deros would account for this limitation for substantially the same reasons explained above for the same argument raised for the combination of Cahill and Deros. *See supra* III.D.2.

2. *Property Management Platform*

Patent Owner argues that Petitioner's mapping of the "property management platform" to Kraus is defective. Prelim. Resp. 43–46. In particular, Patent Owner contends that "Petitioner offers no explanation for mapping Kraus's 'computer 80 and/or mobile device 30 and/or program running on server 44' and Deros's enterprise server 106/property owner server 108 to the '118 Patent's claimed 'property management platform.'" *Id.* at 45. Patent Owner asserts that Petitioner's "and/or" mapping is unclear. *Id.* at 45–46.

We disagree with Patent Owner's contention that Petitioner's mapping is insufficiently clear. Although we do not encourage the use of "and/or," we do not think that the mere use of "and/or" renders a petition deficient. Here, reviewing Petitioner's contentions in context of the Petition and Kraus, it is clear that Petitioner is relying on the functionality of the Moshi Server, which can be distributed in Kraus between networked computer 44, mobile device 30, or networked computer 80. *See* Ex. 1006 (Kraus) ¶¶ 76, 77 ("In one such construction where the RF mesh network gateway device 50 acts as a server, the gateway 50 is directly accessed and controlled remotely by a mobile device 30 or a networked computer 80 without an intervening networked computer server 44 (FIG. 1)."); Pet. 12 (noting possible distributed nature of functionality). Indeed, the '118 patent recognizes that the functionality of the "property management platform" may be distributed. *See* Ex. 1001, 4:37–43 ("It is noted that although FIG. 1 illustrates server 130 as a standalone device, it is to be understood that server 130 and the functionality described herein with respect to the server 130, may be implemented using more than one server or via a collection of

computing resources (e.g., processors, memory, communication interfaces, and the like) deployed in the cloud.”). Thus, we find that Petitioner has shown sufficiently that Kraus accounts for the claimed “property management platform”).

3. *Information and command*

Patent Owner contends Petitioner fails to adequately show the signals in Kraus disclose the claimed “control information” that “identif[ies] at least one smart device,” and a “command derived from the control information” found in limitation [1e]. Prelim. Resp. 46–48. In particular, Patent Owner argues that Paragraph 86 of Kraus, which Petitioner cites, “mentions the gateway device 50 just three times, and not one of those instances discloses the notion of identifying smart devices/locks based on received control information, much less generating a command based on control information.” *Id.* at 47.

On this record, we disagree with Patent Owner’s contention that Kraus does not disclose the claimed “control information” received by the smart hub that the smart hub uses to “identify at least one smart device” and “transmit a command derived from the control information.” In particular, we find that the cited paragraph of Kraus describes that signals may be generated by “network gateway device 50” or “by individual devices 60, 62, 64, 66 on the network.” Ex. 1006 (Kraus) ¶ 86. The paragraph goes on to disclose that “[a]n individual device 60, 62, 64, 66 may generate a signal in response to a request for status or other information from another device.” *Id.* As an example, Kraus explains “the door lock 60 may report whether it is in the locked or unlocked state in response to a status query.” This “report” is sent from the control devices to the gateway device “in response to a

status query” and that the door lock may “control devices,” and that the gateway device 50 may generate signals in response to commands, which we find is sufficient, on this record, to meet this claim limitation.

4. Conclusion as to Claim 1

Having reviewed the evidence and arguments of both sides, we determine that, on this record, Petitioner has shown sufficiently that the combination of Kraus and Deros accounts for the limitations of claim 1, and that a person of ordinary skill would have been motivated to combine the references in the manner proposed. Accordingly, we determine that Petitioner has shown that it is more likely than not that claim 1 would have been obvious over the combination of Kraus and Deros.

5. Claims 2–20

Petitioner provides a detailed mapping for how the combination of Cahill and Deros accounts for the limitations of claims 2–20. Pet. 93–111. Petitioner also provides a motivation to combine Kraus and Deros. *Id.* at 83–85. At this stage of the proceeding, Patent Owner does not raise any arguments regarding these claims beside the arguments considered above with respect to claim 1. We have reviewed Petitioner’s evidence and argument and, at this stage, we find it sufficient. Accordingly, we find that, on the current record, Petitioner has shown that it is more likely than not that claims 2–20 would have been obvious over the combination of Kraus and Deros.

F. Remaining Grounds

For Ground 1, Petitioner asserts that claims 1–20 are unpatentable for lack of written description support under 35 U.S.C. § 112(a). Pet. 29–39.

Patent Owner opposes. Prelim. Resp. 6–21. As we preliminarily conclude that Petitioner demonstrates that it is more likely than not that it will prevail on its challenge to claims 1–20 based on obviousness in view of Cahill and Deros and obviousness in view of Kraus and Deros, we institute review on all challenged claims on all grounds set forth in the Petition, including Petitioner’s written description challenge to claims 1–20 and obviousness challenges to claims 1–3 and 5–20 based on Kraus and Ho and claim 4 based on Kraus, Ho, and Wired. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1354 (2018); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018).

We note that, with respect to the written description challenge, Petitioner appears correct that the written description does not expressly disclose a connection between the smart hub and the user device. *See* Pet. 31–39. However, we note that Patent Owner does identify portions of the specification that it asserts would demonstrate possession to a person of ordinary skill, *see* Prelim. Resp. 13–14 (citing Ex. 1001 (’118 patent), 10:28–33). These portions may be sufficient, so we note the parties should address Patent Owner’s contention that a person of ordinary skill would understand that the “smart devices” disclosed as connecting to the “smart hub” in the specification would have included “user devices,” such as “smartphones” and a “smart watch.” As for the Ho grounds, we note that the parties should further develop the record as to whether Ho is entitled to the filing date of the Singapore priority application.⁵ *See* Prelim. Resp. 57–60.

⁵ When discussing the priority of Ho, the parties should consider the differences between establishing priority under the AIA and the law before the AIA. *See Punumbra, Inc. v. RapidPulse, Inc.*, IPR2021-01466, Paper 24, at 17–25 (PTAB Mar. 10, 2023).

IV. CONCLUSION

After considering the arguments presented in the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has demonstrated that it is more likely than not that at least one of the claims challenged in the Petition is unpatentable.

At this stage of the proceeding, the Board has not made a final determination as to the construction of any claim term or the patentability of any challenged claim.

Our determinations at this stage of the proceeding are based on the evidentiary record currently before us. We will base any final decision on the full record developed during trial.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 324, a post-grant review of claims 1–20 of the '118 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 324 and 37 C.F.R. § 42.4(b), post-grant review of the '118 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

PGR2022-00059
Patent 11,189,118 B2

FOR PETITIONER:

Gregory S. Gewirtz
Jonathan A. David
Wilfred V. Patrick
David G. Leach
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP
litigation@lernerdavid.com
ggewirtz@lernerdavid.com
jdavid@lernerdavid.com
wpatrick@lernerdavid.com
dleach@lernerdavid.com

FOR PATENT OWNER:

Joshua A. Griswold
Kenneth Darby
Kim Leung
FISH & RICHARDSON P.C.
IPR54577-0006IP1@fr.com
PTABInbound@fr.com
griswold@fr.com
kdarby@fr.com
leung@fr.com

Eagle H. Robinson
Robert Greeson
Erik Janitens
Lu Ling
NORTON ROSE FULBRIGHT US LLP
eagle.robinson@nortonrosefulbright.com
robert.greeson@nortonrosefulbright.com
erik.janitens@nortonrosefulbright.com
lu.ling@nortonrosefulbright.com