

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INGENICO INC.,
Petitioner,

v.

IOENGINE, LLC,
Patent Owner.

IPR2019-00416
Patent 8,539,047 B2

Before ELIZABETH M. ROESEL, SHEILA F. McSHANE, and
SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Granting Petitioner's Motion to Exclude
Dismissing Patent Owner's Motion to Exclude
35 U.S.C. § 318(a); 37 C.F.R. § 42.64(c)

INTRODUCTION

A. Background and Summary

Ingenico Inc. ("Petitioner") filed a Petition to institute an *inter partes* review of claims 1–21, 23–25, 27, and 28 of U.S. Patent No. 8,539,047 B2

(Ex. 1001, “the ’047 patent”). Paper 1 (“Petition” or “Pet.”). IOENGINE, LLC (“Patent Owner”) filed a Patent Owner Preliminary Response. Paper 6. In accordance with our authorization (Paper 12), Petitioner filed a Preliminary Reply (Paper 13, “Pet. Claim Construction Reply”) and Patent Owner filed a Preliminary Sur-Reply (Paper 17, “PO Claim Construction Sur-Reply”). We instituted an *inter partes* review of claims 1–21, 23–25, 27, and 28 of the ’047 patent on all grounds of unpatentability alleged in the Petition. Paper 20 (“Institution Decision” or “Inst. Dec.”).

After institution of trial, Patent Owner filed a Response (Paper 35, “PO Resp.”), Petitioner filed a Reply (Paper 39, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 43, “PO Sur-reply”).

Both parties also filed motions to exclude, which have been fully briefed. See Papers 47, 51, 53 (briefing related to Petitioner’s Motion to Exclude); Papers 48, 50, 55 (briefing related to Patent Owners’ Motion to Exclude).

An oral hearing was held on March 31, 2020, and the record contains a transcript of this hearing. Paper 59 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–21, 23–25, 27, and 28 of the ’047 patent are unpatentable.

B. Real Parties in Interest

Petitioner identifies (i) Ingenico Inc., (ii) Ingenico Corp., and (iii) Ingenico Group S.A. as the real parties in interest. Pet. 3.

Patent Owner identifies IOENGINE, LLC as the real party in interest. Paper 4, 2 (Patent Owner’s Mandatory Notices).

C. Related Matters

The parties identify the following district court proceedings involving the '047 patent: (i) *Ingenico Inc. v. IOENGINE, LLC*, No. 1:18-cv-00826-UNA (D. Del.) and (ii) *IOENGINE, LLC v. Paypal Holdings, Inc.*, No. 1:18-cv-00452-UNA (D. Del.). Pet. 2–3; Paper 4, 2. The parties also identify other *inter partes* review proceedings involving the '047 patent and two related patents, U.S. Patent Nos. 9,059,969 and 9,774,703. Paper 7, 2 (Patent Owner's Revised Mandatory Notices); Paper 8, 2 (Petitioner's Updated Mandatory Notices).

Petitioner also identifies U.S. Application Nos. 15/712,714 and 15/712,780, which Petitioner states are pending patent applications that claim the benefit of the '047 patent. Pet. 3.

D. The '047 Patent

The '047 patent issued September 17, 2013, from an application filed November 19, 2010, and asserts the benefit of an application, which was filed March 23, 2004. Ex. 1001, codes (22), (45), (63).

The '047 patent is titled “Apparatus, Method and System For a Tunneling Client Access Point” and discloses “a tunneling client access point (TCAP) that is a highly secure, portable, power efficient storage and data processing device.” Ex. 1001, codes (54), (57). According to the '047 patent, “the TCAP connects to an AT [(access terminal)] and a user employs the AT's user input peripherals for input, and views the TCAP's activities on the AT's display.” *Id.* at code (57); *see also id.* at 2:52–3:6 (summarizing the disclosure).

An objective of the '047 patent is to provide a portable computing and storage device “in an extremely compact form.” Ex. 1001, 1:19–21, 2:25–28. Another objective is to allow users “to employ traditional large

user interfaces they are already comfortable with” and to provide greater portability, greater memory footprints, draw less power, and provide better security for data on the device, as compared with personal digital assistants (PDAs), such as the Palm Pilot. *Id.* at 1:21–24, 2:28–39.

To achieve these objectives, the ’047 patent discloses a TCAP that can be plugged into a desktop or laptop computer and has “a highly portable ‘thumb’ footprint.” Ex. 1001, 2:39–42, 2:46–48; *see also id.* at 21:55–56 (“The TCAP may be packaged in plugin sticks, often, smaller than the size of a human thumb.”). The TCAP uses the computer’s user interface and input/output (I/O) peripherals, while providing its own storage, execution, and/or processing resources. *Id.* at 2:43–46. According to the ’047 patent, the TCAP provides “the equivalent of a plug-n-play virtual private network (VPN)” and “accessing of remote data in an easy and secure manner.” *Id.* at 2:48–51.

Figure 1 of the ’047 patent is reproduced below:

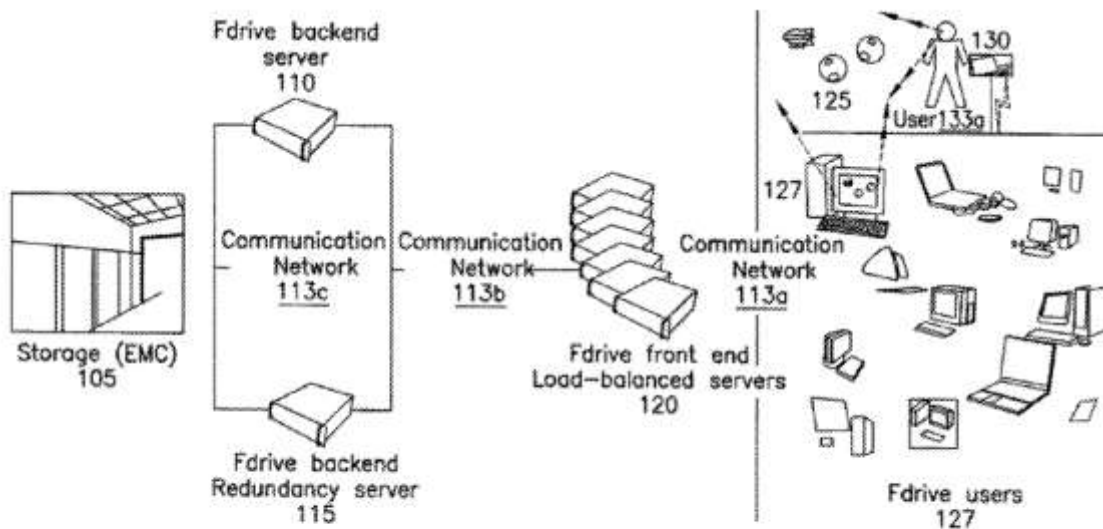


Fig. 1

Figure 1 illustrates a topology between a TCAP and a TCAP server.

Ex. 1001, 3:42–44. As shown in Figure 1, the topology includes remote storage 105; servers 110, 115, and 120; communication networks 113a, 113b, and 113c; access terminals 127; TCAP 130; and user 133a. *Id.* at 3:44–53, 3:65–4:21, Fig. 1. According to the '047 patent, TCAP 130 may be connected to an AT 127, e.g., a server, workstation, desktop computer, laptop, or PDA, by a universal serial bus (“USB”) connection or a wireless protocol, such as Bluetooth or WiFi. *Id.* at 3:57–58. The '047 patent discloses that “[o]nce the TCAP has engaged with an AT, it can provide the user with access to its storage and processing facilities.” *Id.* at 3:63–64.

According to the '047 patent, “[i]f the AT is connected to a communication network 113, the TCAP may then communicate beyond the AT.” Ex. 1001, 3:65–66. In this manner, “the TCAP can provide extended storage and/or processing resources by engaging servers 110, 115, 120, which have access to and can provide extended storage 105 to the TCAP through the AT.” *Id.* at 3:67–4:3. Such communications may occur over various communications networks 113, such as the Internet, a local area network (LAN), a wide area network (WAN), a high speed LAN, or a fiber-channel. *Id.* at 4:3–10, 4:15–21.

The '047 patent describes the user experience as follows:

Thus, to the user 133a, the contents of the TCAP 130 appear on the AT as being contained on the TCAP 125 even though much of the contents may actually reside on the servers 115, 120 and/or the servers' storage facilities 105. In these ways, the TCAP “tunnels” data through an AT. The data may be provided through the AT's I/O for the user to observe without it actually residing on the AT. Also, the TCAP may tunnel data through an AT across a communications network to access

remote servers without requiring its own more complicated set of peripherals and I/O.

Ex. 1001, 4:22–31.

Figure 10 of the '047 patent is reproduced below:

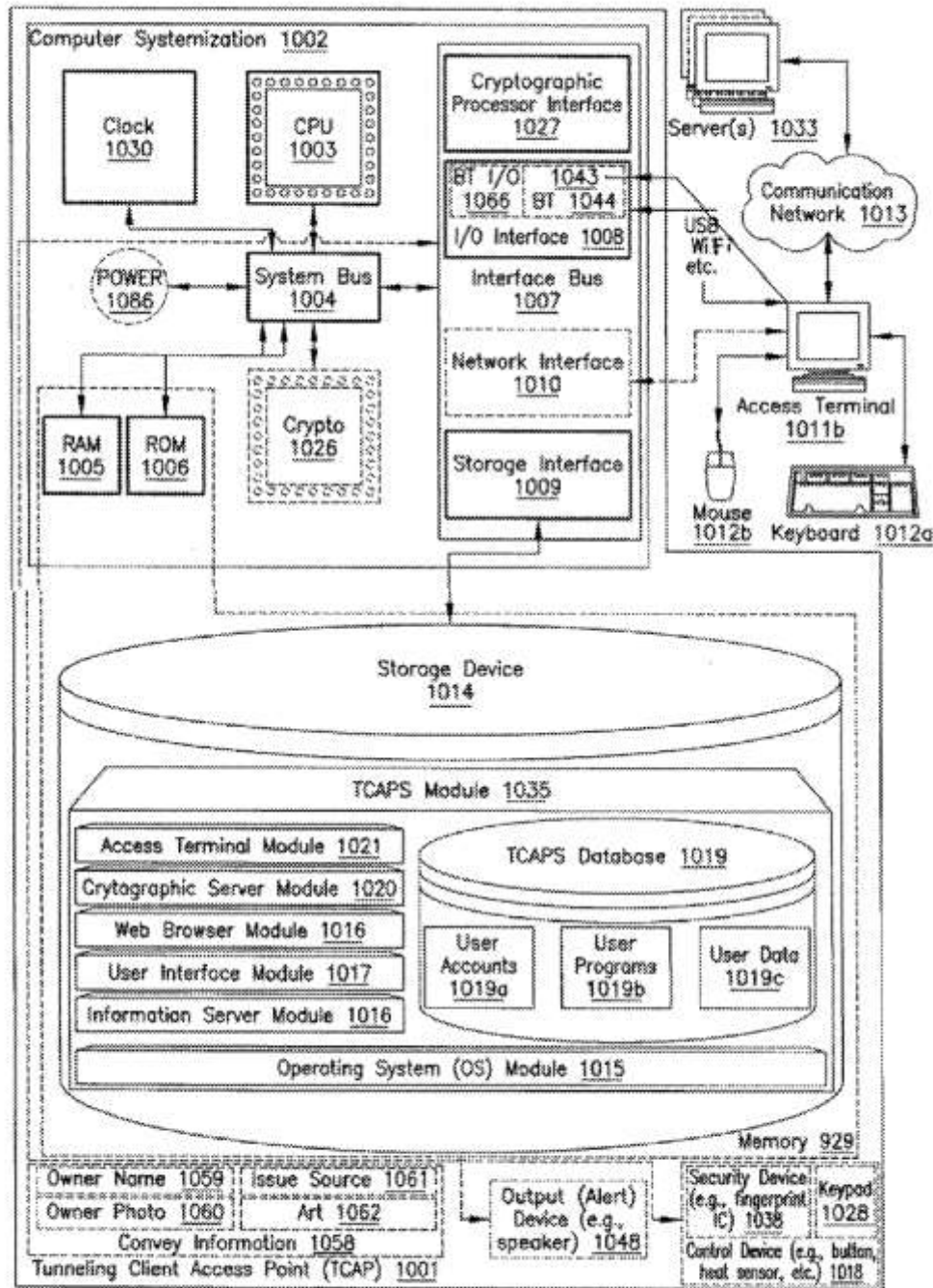


Fig.10

Figure 10 is a block diagram illustrating a TCAP controller 1001, which “may serve to process, store, search, identify, instruct, generate, match, and/or update data within itself, at a TCAPS, and/or through an AT.”

Ex. 1001, 3:30–31, 21:45–52. Figure 10 shows that TCAP controller 1001 includes a central processing unit (“CPU”) 1003, system bus 1004, random access memory (“RAM”) 1005, read only memory (“ROM”) 1006, interface bus 1007, input output (“I/O”) interface 1008, storage interface 1009, network interface 1010, storage device 1014, and power source 1086, among other structures. *Id.* at 22:50–58, 23:21–25, 23:37–43, Fig. 10. The ’047 patent discloses that TCAP controller 1001 may be connected to access terminal 1011b, which may be connected to user input devices, e.g., keyboard 1012a and mouse 1012b, and to communications network 1013. *Id.* at 21:61–67.

E. Illustrative Claims

Petitioner challenges claims 1–21, 23–25, 27, and 28 of the ’047 patent. Pet. 1. Claims 1, 24, and 27 are independent claims. Claim 1 is illustrative of the subject matter of the challenged claims, and reads as follows:

1. A portable device, comprising:
 - (a) an external communications interface configured to enable the transmission of a plurality of communications between the portable device and a terminal comprising a terminal processor, a first input component, a first output component, and a network interface;
 - (b) a processor; and
 - (c) a memory having executable program code stored thereon, including:
 - (1) first program code which, when executed, causes an interactive user interface to be presented on the

first output component, wherein the interactive user interface is configured to enable the user to cause the portable device processor to execute program code stored on the portable device memory;

(2) second program code which, when executed, enables the portable device to (i) receive a communication resulting from user interaction with the interactive user interface and (ii) cause a communication to be sent through the terminal network interface to a communications network node; and

(3) third program code which, when executed by the portable device processor in response to a communication resulting from user interaction with the interactive user interface, causes a communication to be transmitted to a communications network node;

wherein the portable device is configured to effect the display on the first output component of processing activity of program code stored on the portable device memory; and

wherein the portable device is configured to communicate with the terminal and to communicate through the terminal network interface with the communications network node.

Ex. 1001, 30:61–31:27.

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–21, 23–25, 27, and 28 would have been unpatentable on the following grounds:

	Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
1	1, 3, 4, 6–21, 23–25, 27, 28	102(b)	Iida ²

¹ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Because the ’047 patent issued from an application filed before March 16, 2013, we apply the pre-AIA versions of the statutory bases for unpatentability.

² US 2003/0020813 A1, published Jan. 30, 2003 (Ex. 1003).

	Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
2 ³	2	103(a)	Iida, Genske ⁴
3	5	103(a)	Iida, Imbrie ⁵
4	10, 17	103(a)	Iida, Aganovic ⁶
5	1–4, 6–21, 23–25, 27, 28	103(a)	Iida, Genske
6	5	103(a)	Iida, Genske, Imbrie
7	10, 17	103(a)	Iida, Genske, Aganovic

ANALYSIS

A. *Legal Standards*

1. *Anticipation*

A patent claim is unpatentable under 35 U.S.C. § 102 if “the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.”

Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000). “A single prior art reference may anticipate without disclosing a feature of the claimed invention if such feature is necessarily present, or inherent, in that reference.” *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 958 (Fed. Cir. 2014). Moreover, the reference must also “disclose[] within the

³ Petitioner presented two alternative grounds for asserting that claim 2 is unpatentable in light of Iida and Genske. In Ground 2, reflected in this row, Petitioner argued Iida teaches all of the limitations recited in claim 1 and relied on Genske solely for the additional limitation recited in claim 2. The subsequent reference refers to Ground 5, in which Petitioner relied on the combination of Iida and Genske to teach the limitations recited in claim 1.

⁴ US 2002/0065872 A1, published May 30, 2002 (Ex. 1004).

⁵ US 2002/0169002 A1, published Nov. 14, 2002 (Ex. 1005).

⁶ US 6,105,042, issued Aug. 15, 2000 (Ex. 1006).

four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). However, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009).

2. Obviousness

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under 35 U.S.C. § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. “While the sequence of these questions might be reordered in any particular case,” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the U.S. Court of Appeals for Federal Circuit has “repeatedly emphasized that an obviousness inquiry requires examination of all four *Graham* factors and that an obviousness determination can be made only after consideration of each factor,” *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1335 (Fed. Cir. 2016), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017) (en banc).

B. Level of Ordinary Skill in the Art

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v.*

Union Oil Co. of Cal., 713 F.2d 693, 696–697 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.*

Petitioner argues that a person having ordinary skill in the art

would have had a Bachelor of Science degree in Electrical Engineering, Computer Science, Computer Engineering or related discipline, and experience in programming software and firmware for computer peripheral devices and databases/servers and would have had a working understanding of computer hardware, operating systems, encryption, data storage, user interfaces, and peripheral and portable device communication protocols (e.g., parallel ports, serial ports, RS-232, USB, Bluetooth, WiFi and the like).

Pet. 11–12 (citing Ex. 1002 ¶ 13).

In the Institution Decision, we adopted Petitioner’s description of a person having ordinary skill in the art. Inst. Dec. 17–19.

Patent Owner does not challenge that determination. PO Resp. 3. Accordingly, for the reasons given in the Institution Decision, we adopt Petitioner’s proposed level of ordinary skill.

C. Claim Construction

We construe claims “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2020). Specifically, we apply the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc). Under that standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13.

“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes claim constructions for six claim limitations: “interactive user interface,” “communications network,” “WiFi,” “intermediary node,” “router,” and “redundant array of independent disks.” Pet. 12–16. In addition to addressing the construction of “interactive user interface,” Patent Owner proposes a construction for the term “communicate through the terminal network interface with the communications network node” / “cause a communication to be sent through the terminal network interface to a communications network node.” PO Resp. 10–29.

Having considered the arguments of the parties, both those directed to claim construction and the prior art, we determine that the only terms in need of explicit construction are “interactive user interface” and “communicate through the terminal network interface with the communications network node” / “cause a communication to be sent through the terminal network interface to a communications network node.”

1. “*Interactive User Interface*”

a) *The Parties’ Arguments*

Petitioner argues that “interactive user interface” as recited in the ’047 patent is “a display with which a user may interact to result in the computer taking action responsively.” Pet. 13; *see also id.* at 12–13 (discussing reasons for the proposed construction). Specifically, Petitioner argues that the term is not used in the Specification of the ’047 patent and that the

ordinary meaning of “a user interface is an interface that enables a user to interact with a computer.” *Id.* at 12 (citing Ex. 1002 ¶ 28).

Petitioner further argues that “the interactive user interface is a display presented on the output component of the terminal.” Pet. 13. According to Petitioner, a number of displays are shown in the drawings of the ’047 patent and some of “the displays respond to text inputs from an input component to elicit a responsive action from the terminal.” *Id.* Petitioner further argues that “[i]nteractive has been defined as ‘mutually or reciprocally active.’” *Id.* (quoting Ex. 1020, 3).

Patent Owner argues that the phrase “interactive user interface” means “a display containing interface elements with which a user may interact to result in the terminal taking action responsively by responding to the user.” PO Resp. 10.

With regard to interface elements, Patent Owner argues the concept of interface elements “is introduced by direct reference to ‘**interaction interface elements**.’” PO Resp. 10–11 (citing Ex. 1001, 1:52–62; Ex. 2099 ¶ 43). Patent Owner further argues that “[t]he specification repeatedly makes clear that interaction interface elements of the [interactive user interface] are what allow the user to interact with, or ‘engage’ the [interactive user interface].” *Id.* at 11; *see also id.* at 11–14. According to Patent Owner, although the Specification contains qualifying language, the “qualifying language simply indicates that the lists provide examples of the necessary interaction interface elements—not that the interaction interface elements are themselves optional.” *Id.* at 15 (emphasis omitted).

Patent Owner further argues that “[w]ithout interaction interface elements the interface would lack ‘interactivity,’ *i.e.*, it would present information to a user but without any ability for the user to *interact* or

engage with it.” PO Resp. 16. Patent Owner also argues that Petitioner’s expert agreed, in both his declaration and testimony, that an interactive user interface has interaction interface elements and that users interact with the interactive user interface through those elements. *Id.* at 16–17 (citing Ex. 1002 ¶ 28; Ex. 2110, 15:10–16; Inst. Dec. 21); PO Sur-Reply 3 (citing Ex. 1002 ¶ 28; Ex. 2110, 15:10–16; Ex. 1001, 26:9–14, Ex. 2099 ¶¶ 43–50). Patent Owner also argues that its construction is consistent with the description in a pioneering paper and the Board’s discussion of Iida in the Institution Decision. PO Resp. 17–18 (citing Paper 20, 79).

With regard to taking action responsively, Patent Owner argues that Petitioner agrees “that it is the terminal that must take action in response to the user interaction.” PO Resp. 18–19 (emphasis omitted); *see also* PO Sur-Reply 2. Patent Owner further argues that requiring the portable device to take action renders other claim limitations superfluous and is inconsistent with the use of an interactive user interface with products that do not have a portable device. *Id.* at 19–21, 22–24. Patent Owner further argues that the prosecution history “makes clear that it is the terminal that takes responsive action to the user’s interaction with the [interactive user interface].” PO Resp. 21.

In its Reply, Petitioner argues that it is the portable device that must respond to the user interaction. *See* Pet. Reply 1–3. Specifically, Petitioner argues this is supported by an example in the Specification and the claim language, such as the third computer code limitation. *Id.*

Petitioner also argues that “[t]he claims do not require a ‘[graphical user interface (GUI)]’ with ‘interface elements,’ as a GUI is only one type of user interface the specification says ‘may’ be used.” Pet. Reply 3.

Additionally, Petitioner argues that “the user interacts with the [interactive user interface] through manipulation of an input device.” *Id.* at 4.⁷

b) Our Analysis

In the Institution Decision, we concluded that, for purposes of Institution, “interactive user interface” means “a display with which a user may interact to result in the portable device taking action responsively.” Inst. Dec. 25. Based on the arguments of the parties during the trial, we determine that the original construction was erroneous. For the reasons set forth below, we conclude that the term “interactive user interface” encompasses “a display *containing interface elements* with which a user may interact to result in a computer taking action responsively.” No further construction is necessary.⁸ *See Nidec*, 868 F.3d at 1017.

In construing the claims, our analysis begins with, and remains centered on, the language of the claims themselves. *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). “[A]lthough the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments.” *Phillips*, 415 F.3d at 1323.

⁷ During the Oral Hearing, Petitioner also argued that requiring interface elements was inconsistent with original claim 95, which recited an audio user interface. Tr. 8:2–18. However, because that argument was not presented in the Petition or Reply (*see* Tr. 26:10–20), it is not timely and we do not consider it. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019 (“CTPG”), 85–86, available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

⁸ For example, because none of the prior art involves an audio user interface, we do not determine whether the limitation is broad enough to encompass an audio user interface that does not use a display.

We agree with Patent Owner’s proposed construction to the extent it requires “interface elements.” Both Petitioner and Patent Owner agree that the “interactive user interface” must be interactive. See Pet. 13; PO Resp. 10. Moreover, Petitioner and its expert agree that the interaction is with elements of the user interface—that is, interface elements. See Ex. 1002 ¶ 28 (Geier Declaration) (“[A] user interface includes a combination of elements . . . which create the way a user interacts with a computer.”); Ex. 2110, 15:10–16 (“Q. . . . The point is that the interactive user interface has to have elements with which the user interacts. Correct? A. . . . [T]here’s going to be some sort of element that the user is going to interact with.”); Pet. 12–13 (“This is consistent with a dictionary definition for ‘user interface’ as being the ‘combination of menus, screen design, keyboard commands, command language and help screen, which create the way a user interacts with a computer.’” (citing Ex. 1019, 3)). Thus, an “interactive user interface” requires a “display containing interface elements with which a user may interact.”⁹

Additionally, we disagree with both Petitioner and Patent Owner that the construction of “interactive user interface” should include an identification of what responds to the interaction. See Pet. 12–13 (arguing that interacting with an “interactive user interface” “result[s] in the computer taking action responsively”); PO Resp. 18–24 (arguing that it is a specific

⁹ In view of the open ended term “such as” in the Specification, interface elements are not limited to “computer interaction interface elements such as check boxes, cursors, menus, scrollers, and window.” See Ex. 1001, 1:52–56; PO Resp. 15 (acknowledging that this qualifying language “such as” “indicates that the lists provide *examples* of the necessary interaction interface elements”).

computer—the terminal—that must take responsive action). In light of that agreement, the only issue for us to determine is which computer must take the responsive action. And because claim 1 recites two different computers—the terminal and the portable device—and does not specify which computer takes responsive action to the user interaction with the interactive user interface, Petitioner’s proposed construction conforms with the claim language.

This construction is consistent with how a person having ordinary skill in the art would understand the term user interface. Specifically, The Computer Glossary defines a user interface as “[t]he combination of menus, screen design, keyboard commands, command language and help screens, *which create the way a user interacts with a computer.*” Ex. 1019, 3 (emphasis added). Consistent with our construction, it describes an interface in terms of how a user interacts with a computer.

As Patent Owner correctly points out, not all interactive user interfaces that exist generally in the art are associated with a portable device. PO Resp. 20–21. Therefore, in contrast to the preliminary construction in the Institution Decision, we do not define an interactive user interface as requiring that the portable device respond to a user interacting with the interface; instead, we simply refer to a generic computer.

Merely referring to a generic computer as opposed to identifying either to terminal or portable device is consistent with the Specification of the ’047 patent. For example, the Specification describes how, in response to a user interacting with the interface, the AT (terminal) may treat the TCAP (portable device) as memory and retrieve information from the TCAP. Ex. 1001, 4:46–54. In that circumstance, the terminal is taking responsive action. However, the Specification continues and describes how

in other cases, the TCAP processor handles the requirements to process and spool files while the AT is used only as a mechanism for user input and output. *Id.* at 4:54–65. Thus, the Specification of the '047 patent supports either computer taking responsive action.

Accordingly, for the reasons discussed above, we conclude that “interactive user interface” means “a display containing interface elements with which a user may interact to result in a computer taking action responsively.”¹⁰

2. *The Communication Limitation*

a) *The Parties' Arguments*

Claim 1 recites that second program code enables the portable device to “cause a communication to be sent through the terminal network interface to a communications network node,” that the third program code “causes a communication to be transmitted to a communications network node,” and that “the portable device is configured to communicate with the terminal and to communicate through the terminal network interface with the communications network node.” Ex. 1001, 31:11–19, 31:24–27. As a shorthand, we refer to these limitations as the “communication limitation.”

Patent Owner argues that the “communication limitation” means to “communicate/cause a communication to be sent through the terminal’s network interface with the/to a communications network node, without the terminal having access to information being communicated.” PO Resp. 24

¹⁰ We note that including “interface elements” in the construction is in accordance with the position taken by Patent Owner related to this claim term. See PO Resp. 10–24. We further note that the revised language—“to result in a computer taking action responsively”—is taken from Petitioner’s proposed construction. See Pet. 12–13.

(citing Ex. 2099 ¶¶ 57–64). Specifically, “[t]he concept of ‘tunneling’ through a terminal is of central importance to the ’047 Patent, appearing in the title, abstract, summary of invention and throughout the specification.” *Id.*; see also *id.* at 24–25 (discussing Specification); PO Sur-Reply 6. Patent Owner further argues that:

The repeated and consistent emphasis on tunneling in every embodiment in the patent, and in the patent’s title and abstract, illustrates what the invention is overall: allowing two trusted devices, a portable device and a network device, to communicate with each other by tunneling information through a third, untrusted “conduit” device, while preserving the security of sensitive information by blocking the untrusted conduit device from accessing it.

PO Resp. 26; see also *id.* at 26–27 (discussing the *VirnetX*¹¹ line of cases); PO Sur-Reply 6. According to Patent Owner, “requiring an explicit definition, disavowal, or disclaimer of scope [is] an overly restrictive approach rejected by the Federal Circuit in *Phillips* and its progeny.” PO Sur-Reply 7.

Additionally, Patent Owner argues that Petitioner’s expert admitted during his deposition that “a [person having ordinary skill in the art] would have understood that, in the context of communications from one device ‘through’ an intermediary, to another, the content is not accessible to intermediary devices.” PO Resp. 27; see also *id.* at 28 (quoting Mr. Geier’s testimony); PO Sur-reply 7–8.

¹¹ *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308 (Fed. Cir. 2014); *Eon-Net LP v. Flagstar Bancorp.*, 653 F.3d 1314 (Fed. Cir. 2011); *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365 (Fed. Cir. 2016); *In re Abbott Diabetes Care Inc.*, 696 F.3d 1142 (Fed. Cir. 2012).

Petitioner argues Patent Owner improperly reads “without the terminal having access to information being communicated” into the “communication[] limitation.” See Pet. Claim Construction Reply 1–4 (emphasis omitted). According to Petitioner, in a district court proceeding involving the ’047 patent, Patent Owner did not seek a construction of the “communication[] limitation.” *Id.* at 1 (citing Ex. 1024). Petitioner further argues that Patent Owner’s expert opined in that district court proceeding that the claims of the ’047 patent do not require tunneling. *Id.* at 1–4 (citing Ex. 1022 ¶ 48).

Petitioner also argues that Patent Owner’s proposed construction is inconsistent with the use of “cause” in the “communication limitation.” Pet. Claim Construction Reply 4–5. According to Petitioner, Patent Owner’s expert opined that “[t]he claimed invention does not require that the portable device or program code communicate with a network; it only requires they cause a communication to be sent to a network.” *Id.* at 4 (quoting Ex. 1022, 20) (emphasis omitted). Petitioner argues that because the terminal originates the communication with the communication network, it must have access to the information being communicated: “If the terminal originates the network communication, then the terminal certainly has access to the information being communicated. Thus, [Patent Owner’s] current argument for the ’047 patent claims requiring ‘without the terminal having access to information being communicated’ is clearly inconsistent with its prior position.” *Id.* at 5 (emphasis omitted).

Petitioner also argues that Patent Owner’s proposed claim construction “commits ‘one of the cardinal sins of patent law’ - importing a limitation from the specification into the claims.” Pet. Reply 5. According to Petitioner, “[w]here the patentee has not acted as its own lexicographer

and there is no clear and unmistakable disclaimer, such attempts to limit the claims to an embodiment in the specification are improper.” *Id.* (citing *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016)). Petitioner further argues that, in this case, “[t]he *Virnetx* line of cases is inapplicable because ‘through’ is a lay term having an ordinary meaning in the context of communicating – ‘by way of.’” *Id.* (footnote omitted).

Petitioner also argues Mr. Geier’s testimony regarding “through” was directed to Iida, not the ’047 patent or a general usage. Pet. Reply 5–6. For example, Petitioner argues “Mr. Geier never said that the specification requires that access is prevented; he only said that in Iida access would be unnecessary to pass the communication through to a server.” *Id.* at 6.

b) Our Analysis

We are not persuaded by Patent Owner’s argument that the “communication limitation” is limited to communication in which the terminal does not have access to the transmitted information.

We start with the words of the claims. The claims do not expressly recite “tunneling” or otherwise state that the terminal does not have access to the information being communicated. *See, e.g.*, Ex. 1001, 31:11–19, 31:24–27 (“communication limitation” of claim 1). Thus, based on the ordinary meaning of the words of the claims, the “communication limitation” does not require tunneling—that is that the communication must take place “without the terminal having access to information being communicated.”

This stands in contrast to the claims of the related '006 patent.¹² Unlike the claims of the '047 patent, certain claims of the '006 patent, such as claim 1, specifically recite a “portable *tunneling* storage and processing apparatus.” Ex. 1013, 30:60–31:43 (emphasis added). In addition to reciting “tunneling” in the claim, claim 1 of the '006 patent also explicitly requires encrypting the data by the portable device, thus preventing the terminal from accessing the data. *Id.* Encrypting data is a type of tunneling. *See* Tr. 48:18–25. In fact, each and every claim of the '006 patent explicitly recites either tunneling or a type of tunneling (encryption). *Id.* at 49:1–6. Thus, the claims of the '006 patent demonstrate that the patent applicant knew how to claim tunneling and the lack of similar language in the claims of the '047 patent shows that the patent applicant did not intend to so limit the claims in the '047 patent.

Although Patent Owner directs us to various portions of the '047 patent that discusses tunneling or encrypting data, we do not read those requirements from the Specification into the claims. The Federal Circuit has held that that a patent applicant can act as his own lexicographer and limit the scope of the claim based on statements in the Specification:

Our case law has recognized that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” [*Phillips*, 415 F.3d] at 1316. When the patentee acts as its own lexicographer, that definition governs. *See id.* “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d

¹² US 7,861,006 B2, issued Dec. 28, 2010 (Ex. 1013). The '006 patent issued from the parent application of the '047 patent. *See* Ex. 1001, code (63).

1362, 1365 (Fed. Cir. 2012) (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). We have also found instances where “the specification may reveal an intentional disclaimer, or disavowal, of claim scope.” *Phillips*, 415 F.3d at 1316. In those situations, it is again the inventor’s disavowal that is dispositive of the claim construction. *See id.* “To disavow claim scope, the specification must contain ‘expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.’” *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1306 (Fed. Cir. 2011) (quoting *Epistar Corp. v. Int’l Trade Comm’n*, 566 F.3d 1321, 1335 (Fed. Cir. 2009)).

Cont’l Circuits LLC v. Intel Corp., 915 F.3d 788, 796–97 (Fed. Cir. 2019).

At most, the sections discuss various embodiments that, for example, encrypt data. *See, e.g.*, Ex. 1001, 13:2–4, 27:28–28:15. But it is not proper to read limitations from embodiments into the claims:

Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.

SuperGuide Corp. v. DirecTV Enters., Inc., 358 F.3d 870, 875 (Fed. Cir. 2004)). “[A]lthough the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments.” *Phillips*, 415 F.3d at 1323.

Not limiting the “communication limitation” to communications in which the terminal does not have access to information being communicated is also consistent with the ordinary meaning of the word “through.” “Through” means “used as a function word to indicate movement into at one side or point and out at another and especially the opposite side of,” “by way

of,” or “used as a function word to indicate passage from one end or boundary to another.” Ex. 3002 (Merriam-Webster Dictionary). Based on the ordinary meaning of the word “through,” the communication must travel from the portable device to the communications node “by way of” the terminal network interface of the terminal. But the ordinary meaning of the word “through” does not prohibit the terminal from having access to the information. Nor has Patent Owner directed us to anything in the ’047 patent that persuades us that the inventor intended to give “through” a special meaning.

Nor are we persuaded by Patent Owner’s citations of *VirnetX* and its progeny.

In *VirnetX*, the Federal Circuit’s construction was premised on the undisputed assertion that the term “secure” did not have a plain and ordinary meaning and had to be defined by reference to the specification. *VirnetX*, 767 F.3d at 1317 (“As an initial matter, we note that there is no dispute that the word ‘secure’ does not have a plain and ordinary meaning in this context, and so must be defined by reference to the specification.”). In this case, as discussed above, “through” has an ordinary meaning. Accordingly, it is inappropriate to rely on *VirnetX* to import limitations from the specification into the claims. See *Sanofi-Aventis U.S. LLC v. Mylan GmbH*, No. 17-9105 (SRC), 2019 WL 2067373 (D.N.J. May 9, 2019) (not applying *VirnetX* because the claim limitation has an ordinary meaning).

Similarly inapplicable is *GPNE*. Although the Federal Circuit held that the district court did not err by construing the term “node” to mean a pager, it did so because (1) “GPNE concedes that the specification consistently refers to ‘nodes’ as ‘paggers’” and (2) “the inventor’s Rule 131 declaration consistently and exclusively describes the invention as a system

of pagers.” *GPNE*, 830 F.3d at 1370–71. In contrast, Patent Owner has not pointed to any language—let alone repeated and consistent language—in which the ’047 patent states that “through” means a communication without the terminal having access to information being communicated. See PO Resp. 24–27. Although the cited sections of the ’047 patent discuss tunneling and encrypting the data, there is nothing tying tunneling and encrypting to the word “through” or the “communication limitation.”

Similarly inapplicable is *Eon-Net*. In *Eon-Net*, the Federal Circuit held that the terms “file” and “document” are limited to information derived from a hard copy document because the specification defined the invention in those terms. *Eon-Net*, 653 F.3d at 1321–22. For example, in that case, the specification stated that “[t]he invention is directed to a system for efficiently processing information originating from hard copy documents,” more specifically to “a hard copy document application program interface which minimizes the need to manually process hard copy documents.” *Id.* at 1321 (emphasis added). Similarly, the court held that the summary of the invention “defines the ‘invention’ as providing ‘an application program interface which inputs a diversity of hard copy documents using an automated digitizing unit and which stores information from the hard copy documents in a memory as stored document information.’” *Id.* (emphasis added). In contrast, in this case, Patent Owner does not point us to repeated language tying tunneling to the invention. To the contrary, although the abstract of the ’047 patent states that the TCAP “enables the user to observe data stored on the TCAP without it being resident on the AT,” the abstract uses the word “may” to indicate that tunneling the data through the AT to a communication network is possible, but not required. Ex. 1001, code (57).

Additionally, the '047 patent further describes how the AT (terminal) may retrieve information from the TCAP. *Id.* at 4:50–54; *see also id.* at 6:9–10 (describing how the TCAP “may be accessed and manipulated as a standard storage device through the AT’s operating system”). The ability of the terminal to retrieve data from the portable device implies that the terminal can have access to the data. Thus, unlike in *Eon-Net*, the disclosure is not consistent in describing the necessity of preventing the terminal from having access to the data on the TCAP.

Also inapplicable is *Abbott*. In *Abbott*, the Federal Circuit held the board’s claim construction was incorrect because (1) it was inconsistent with disparaging remarks in the patent about external cables and wires and (2) every embodiment showed a sensor without external cables in wires. *Abbott*, 696 F.3d at 1149. In contrast, in this case, (1) not every embodiment of the '047 patent prevents the AT/terminal from retrieving data from the TCAP (*e.g.*, Ex. 1001, 4:50–54) and (2) Patent Owner has not identified any disparaging remarks. Thus, *Abbott* is inapplicable to the facts of this case. *See Astek Holdings, Inc. v. CoolIT Sys. Inc.*, No. C-12-4498 EMC, 2013 WL 6327691, *6 (N.D. Cal. Dec. 3, 2013) (distinguishing *Abbott* where “[n]o such disparagement of indirect coupling is contained in the specification at issue in the case at bar”).

We are also not persuaded that Mr. Geier—Petitioner’s expert—testified that “‘through’ an intermediary, to another, [means that] the content is not accessible to intermediary devices.” *See* PO Resp. 27 (emphasis omitted). Placing Mr. Geier’s testimony in context of the questions he was asked—which focused on the disclosure of Iida—shows that he was simply discussing how he believed the devices in Iida operated and not providing a construction of the '047 patent. *See* Ex. 2110, 117:15–120:1 (Geier Dep.).

Specifically, beginning on page 111 of the deposition, the questions focused on Iida. *Id.* at 111:7–18. Then, in the middle of the testimony Patent Owner relies upon, Mr. Geier explicitly refers to Iida:

Q. So you're saying that information being transferred through the terminal means that the terminal can't access the data?

A. I'm just giving you what I think a person of ordinary skill in the art would understand. If you move content such as image data from something like a camera to a server and it goes through the terminal, that you wouldn't -- that doesn't mean you're going to be accessing it at the terminal. I imagine, and I implement this, maybe you could, I don't know why you'd want to access it at the terminal if the intent is to move it from the portable device to the server. *And based on the way that Iida explains the establishment of this communications network through dialing through the access points and all this*, that it's establishing an end-to-end communications network from the camera to the server.

Id. at 117:15–118:10 (emphasis added). Nothing in the remainder of the cited testimony would indicate that either the questions or answers related to anything but Iida.

Moreover, Mr. Geier never testified that that terminal could not access the data; instead, he simply stated that the terminal “wouldn't be accessing the content.” Ex. 2110, 118:15–119:4. The terminal not accessing the content—because there is no need for it to do so—is not the same as the terminal not having the ability to access the content.

Accordingly, we conclude that the “communication limitation” is not limited to communications sent through the terminal without the terminal having access to information being communicated. No further construction of the term is required for the purposes of this Decision. *See Nidec*, 868 F.3d at 1017.

D. Ground 5: Obvious over Iida and Genske

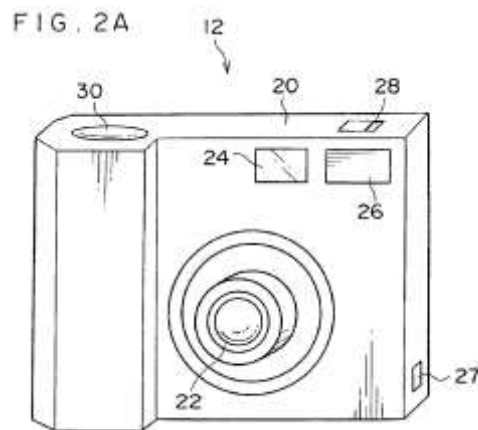
Petitioner argues that claims 1–4, 6–21, 23–25, 27, and 28 would have been obvious over Iida and Genske. Pet. 57–62; *see also* Pet. 17–53.

1. Iida (Ex. 1003)

Iida is titled “Image Photographing System” and discloses a digital still camera and “an image saving area dedicated to the user [that] is opened on an image server connected to the Internet.” Ex. 1003, codes (54), (57). Iida discloses an image photographing and ordering system and method for allowing a user to photograph images and to order prints. *Id.* at code (57), ¶ 2. The system includes a photographing device, such as a digital still camera or a digital video camera, which is lent to a user in exchange for a rental fee. *Id.* ¶ 12. The photographing device comprises “a communication component which can communicate with a communication apparatus having a function of communicating with an image server connected to a computer network,” for example, the Internet. *Id.* ¶¶ 13, 14. According to Iida, the communication apparatus is equipment that is possessed by the user and can be carried by the user, such as a portable telephone, personal digital assistant (PDA), wearable computer, or mobile computer. *Id.* ¶ 14.

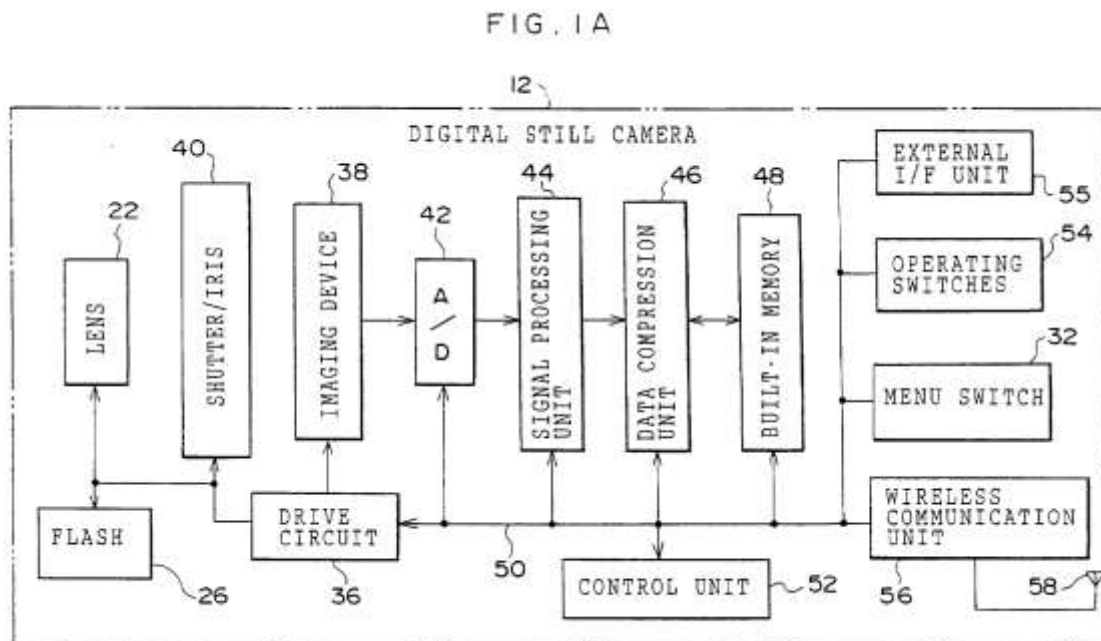
Iida discloses an embodiment of an image photographing and ordering system that includes digital still camera 12, portable terminal 14, and image server 18 connected to the Internet. Ex. 1003 ¶¶ 57, 70, Figs. 1A, 1B, 1C, 2A, 2B. According to Iida, portable terminal 14 may be the user’s portable telephone or a PDA, wearable computer, or mobile computer. *Id.* ¶¶ 57, 144.

Figure 2A of Iida is reproduced below.



Iida's Figure 2A is a perspective view showing the external appearance of digital still camera 12. Ex. 1003 ¶¶ 52, 58. As shown in Iida's Figure 2A, digital still camera 12 includes terminal 27 for transmitting/receiving information between digital still camera 12 and an information processor such as a personal computer (PC). *Id.* ¶ 58.

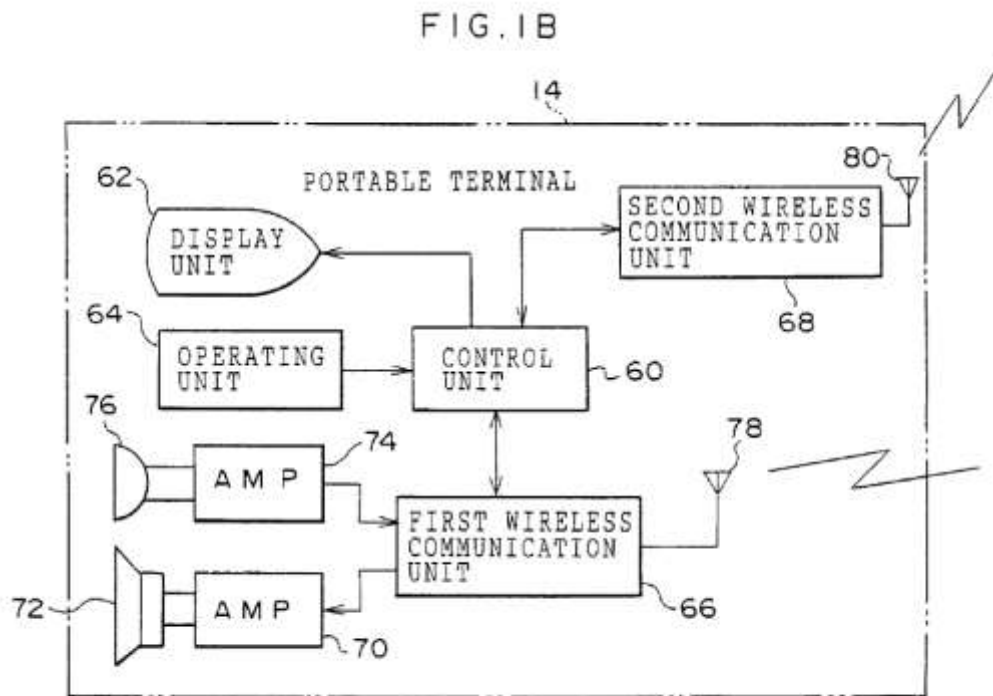
Figure 1A of Iida is reproduced below:



Iida's Figure 1A is a block diagram showing the schematic construction of digital still camera 12. Ex. 1003 ¶¶ 51, 57. As shown in Iida's Figure 1A,

digital still camera 12 includes external I/F unit 55, wireless communication unit 56, and antenna 58, among other structures. *Id.* ¶ 66. Iida discloses that external I/F unit 55 is “for transmitting/receiving information to/from the PC via the terminal 27.” *Id.* According to Iida, “[a]n antenna 58 is connected to the wireless communication unit 56 for performing wireless communication via the antenna 58 with the portable terminal 14 possessed by the user.” *Id.*

Figure 1B of Iida is reproduced below:

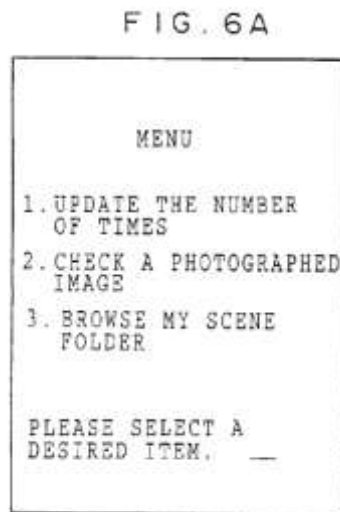


Iida Figure 1B is a block diagram showing the schematic construction of portable terminal 14. Ex. 1003 ¶¶ 51, 57, 68. According to Iida, portable terminal 14 may be the user’s portable telephone or a PDA, wearable computer, or mobile computer. *Id.* ¶¶ 57, 144.

As shown in Iida Figure 1B, terminal 14 includes control unit 60, display unit 62, operating unit 64, wireless communication units 66 and 68, and antennas 78 and 80, among other structures. *Id.* ¶ 68. According to

Iida, control unit 60 comprises a CPU, a ROM and a RAM. *Id.* Display unit 62 comprises an LCD. *Id.* Operating unit 64 comprises “a ten-keys, touch pad or the like.” *Id.* Iida discloses that wireless communication unit 66 and antenna 78 communicate with a telephone network, and wireless communication unit 68 and antenna 80 communicate with camera 12. *Id.* ¶ 69. According to Iida, the telephone network is connected via the Internet to image server 18, which comprises storage medium 88 having image data saving areas where users of rented digital still cameras 12 can store image data. *Id.* ¶ 70, Fig. 1B.

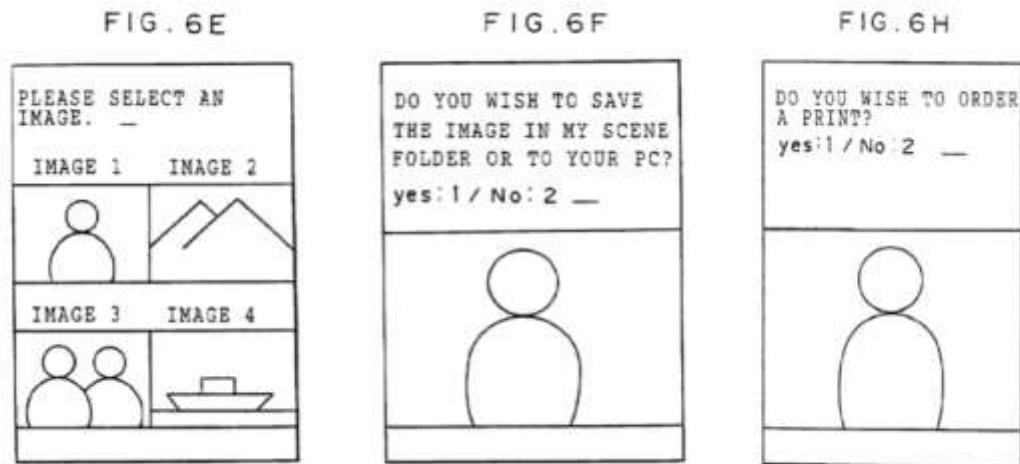
Figure 6A of Iida is reproduced below.



Iida Figure 6A shows an example menu screen that is displayed on the display unit 62 of portable terminal 14. Ex. 1003 ¶¶ 56, 83. Under the control of control unit 52 of camera 12, information for expressing the menu screen is read from the camera’s ROM and transmitted to portable terminal 14 via wireless communication units 56 (of camera 12) and 68 (of terminal 14). *Id.* ¶ 83. Control unit 60 of portable terminal 14 analyzes the received information and uses it to display the menu screen on display unit 62. *Id.*

The user can select a menu item by inputting a number assigned to that item using operating unit 64 of portable terminal 14. *Id.* ¶¶ 84, 85, Fig. 4A (steps 206, 208). Control unit 60 transmits the user's selection to digital still camera 12, where it is processed by control unit 52. *Id.* ¶¶ 84, 85 (Figs. 4B–4D).

Figures 6E, 6F, and 6H of Iida are reproduced below.



Iida Figures 6E, 6F, and 6H show menu screens for allowing a user to select, save, and order prints of photographed images. Ex. 1003 ¶¶ 93–107, 126–138. From the menu screen in Figure 6A, the user can select the menu item “Check a photographed image” or the menu item “Browse My Scene Folder.” *Id.* ¶¶ 83, 93, 126. When either of these menu items is selected, a plurality of numbered photographed images is displayed on display unit 62 of portable terminal 14 to create an image selection screen, as shown in Figure 6E. *Id.* ¶¶ 93–96, 126–128, Fig. 4C (step 232), Fig. 4D (steps 254–262). Using operating unit 64, the user may input an instruction for scrolling (changing-over) the image selection screen to display additional images. *Id.* ¶¶ 97, 98, 130, 131. From the image selection screen, the user may select one of the images by inputting its number using operating unit 64, and the

selected image is then enlarged and displayed on an image check screen (Figure 6F) or a browse screen (Figure 6H). *Id.* ¶¶ 94, 96, 97, 99, 100, 130–133, Fig. 4C (step 236), Fig. 4D (step 266). From the image check screen (Figure 6F), the user may select whether to save the displayed image. *Id.* ¶¶ 99, 101–107, Fig. 4C (steps 238–250). From the browse screen (Figure 6H), the user may select whether to order prints of the displayed image. *Id.* ¶¶ 132, 135–138, Fig. 4D (steps 268–276).

Iida discloses that a user may elect to have a photographed image saved either to a PC possessed by the user or to a folder in an image data saving area dedicated to the user on a storage medium associated with image server 18, which Iida refers to as “My Scene Folder.” Ex. 1003 ¶¶ 76, 99, 101, 105, 106, Figs. 1C, 4C (step 241), 6F. If the user’s PC has been designated as the save destination for the image, the user connects digital still camera 12 to the user’s PC with a communication cable and the photographed image data is transferred and saved to a built-in hard disk drive (HDD) or storage medium of the user’s PC. *Id.* ¶ 106, Fig. 4C (step 249). If, on the other hand, the “My Scene Folder” has been designated as the save destination for the image, then the photographed image data to be saved in the image data saving area is transferred to image server 18 via portable terminal 14, a specified access point, and the Internet. *Id.* ¶¶ 107, 113, 114, Fig. 4C (steps 242, 244, and 246).

2. *Genske (Ex. 1004)*

Genske is titled “System and Method for Dynamic Uploading and Execution of Applications and Drivers Between Devices” and is directed to “a digital camera device . . . which may be occasionally connected to a multitude of different ‘host’ devices, such as a Palm™ handheld computer or a cellular phone.” Ex. 1004 ¶ 21, code (54). Genske describes the “basic

system,” including digital camera hardware (*id.* ¶¶ 22–43), “host” computer hardware (*id.* ¶¶ 44–52) and basic system software (*id.* ¶¶ 53–55). Genske discloses that computer software stored on the host computer for directing the operation of the host computer includes “a graphical user interface (GUI),” which receives “user commands and data in a graphical (e.g., ‘point-and-click’) fashion.” *Id.* ¶¶ 54, 55. According to Genske, these inputs may be acted upon by the host computer in accordance with instructions from the host computer’s operating system or the client applications modules stored in the host computer’s fixed storage. *Id.*

3. *Analysis of Claims 1, 24, and 27*¹³

a) *Undisputed Claim Limitations*

Claim 1 recites, *inter alia*,

[a] portable device comprising: (a) an external communications interface configured to enable the transmission of a plurality of communications between the portable device and a terminal comprising a terminal processor, a first input component, a first output component, and a network interface; (b) a processor; and (c) a memory having executable program code stored thereon”

Ex. 1001, 30:61–31:2.

Petitioner argues Iida teaches each of those limitations. See Pet. 17–19 (citing Ex. 1002 ¶¶ 45–47; Ex. 1003). Specifically, Petitioner argues “Iida’s portable digital camera 12 has all the hardware components required of the portable device by claim 1, including the ‘external communications

¹³ Petitioner and Patent Owner rely on substantially the same arguments for claims 1, 24, and 27. See Pet. 40 (stating that “the detailed explanation of anticipation [for claims 24 and 27] can be found above with regard to claim 1”); PO Resp. 50–62 (arguing claims 1, 24, and 27 as a group). Although we refer to claim 1, our analysis applies equally to claims 24 and 27.

interface’ configured to communicate with a ‘terminal.’” *Id.* at 17 (citing Ex. 1002 ¶¶ 45–46); *see also id.* at 18–19 (citing Ex. 1003 ¶¶ 65, 66, 68, 69, 111, Figs. 1A, 1B; Ex. 1002 ¶ 45). Petitioner further argues “[t]he terminal referred to in claim 1 corresponds to Iida’s ‘portable terminal 14,’ which also has all the hardware components that claim 1 sets forth for the terminal.” *Id.* at 17 (citing Ex. 1002 ¶¶ 45–46); *see also id.* at 18–19 (citing Ex. 1003 ¶¶ 68, 69, Fig. 1B; Ex. 1002 ¶ 45). Petitioner also argues Iida’s camera 12 includes “an external communications interface (‘wireless communication unit 56’) for communicating with terminal 14, which has all the elements set forth in claim 1 for the terminal, including its own network interface (‘first wireless communication unit 66’)” for communicating with the internet. *Id.* at 18 (citing Ex. 1002 ¶ 45; Ex. 1003 Fig. 1C). In addition, Petitioner argues Iida’s camera 12 includes its own processor and memory that reside within the camera. *Id.* at 18–19 (citing Ex. 1002 ¶ 45; Ex. 1003 ¶ 65).

Claim 1 further recites “wherein the portable device is configured to effect the display on the first output component of processing activity of program code stored on the portable device memory.” Ex. 1001, 31:20–23. Petitioner argues Iida teaches that limitation. *See* Pet. 26. Specifically, Petitioner argues Iida teaches that “[c]amera 12 causes the display of processing activity of program code. For example, it causes displays of the updating of the number of shots left (see [0089]), the saving of image data (see step 252 in Fig. 4C), and printing (see step 276 of Fig. 4D and [0136]).” *Id.* (citing Ex. 1002 ¶ 51); *see also id.* (citing Ex. 1003 ¶ 89).

Based on the undisputed evidence before us and the reasons set forth in the Petition, including the Geier Declaration, which are not addressed by Patent Owner (*see generally* PO Resp.), we find that Iida teaches “a portable

device” including a “portable device comprising: (a) an external communications interface configured to enable the transmission of a plurality of communications between the portable device and a terminal comprising a terminal processor, a first input component, a first output component, and a network interface; (b) a processor; and (c) a memory having executable program code stored thereon” and “wherein the portable device is configured to effect the display on the first output component of processing activity of program code stored on the portable device memory” as recited in claim 1.

a) *“First Program Code . . .”*

Claim 1 further recites that the executable program code stored in the portable device’s memory includes “first program code which, when executed, causes an interactive user interface to be presented on the first output component, wherein the interactive user interface is configured to enable the user to cause the portable device processor to execute program code stored on the portable device memory.” Ex. 1001, 31:3–8. As a shorthand, we refer to this limitation as “the first program code.”

(1) *Petitioner’s Arguments*

Petitioner argues Iida teaches “the first program code.” Pet. 19–21. Specifically, Petitioner argues Iida’s “Camera 12 is not provided with a display and instead uses the terminal’s display unit 62 to show images.” *Id.* at 21 (citing Ex. 1003 ¶¶ 59, 82, 95, 99). Petitioner further argues that “the user acts upon items presented on the display screen to effect a responsive action by the computer process running according to the flow charts of Figs. 4A–4D.” *Id.* (citing Ex. 1002 ¶ 48). According to Petitioner, by selecting a choice on the screen—such as by a key or touch pad—the “selection determines what computer process happens next.” *Id.* (citing Ex. 1003

¶ 68). Petitioner further argues that the software for executing the functions is stored in the memory of camera 12, which “has control unit 52 that executes the code.” *Id.* (citing Ex. 1003 ¶ 65).

Petitioner further argues that a person of ordinary skill in the art would have substituted a graphical user interface (“GUI”), such as the type discussed in Genske, in place of Iida’s menu screens. *See* Pet. 57–62. Specifically, Petitioner argues Genske teaches that a terminal, such as a Palm handheld computer, can include a GUI. *Id.* at 57 (citing Ex. 1004 ¶¶ 21, 55, Fig. 2). Petitioner further argues that a person of ordinary skill in the art would have understood how to develop software for presenting graphical user interfaces on a variety of devices including “clickable inputs such as buttons, checkboxes, graphical icons or clickable text for users to directly interact with by use of a cursor or touch screen.” *Id.* at 58–59 (citing Ex. 1002 ¶¶ 91–92; Ex. 1004 ¶ 123; Ex. 1018). Petitioner also argues that a person having ordinary skill in the art would have used code for a graphical user interface in order for the camera to communicate with devices that use a graphical user interface. *Id.* at 59–60 (citing Ex. 1002 ¶¶ 95–97). According to Petitioner, the GUI of Genske is an “interactive user interface” as recited in claim 1. *Id.* at 58–60.

Petitioner also argues that a person having ordinary skill in the art would have combined the teachings of Iida with Genske’s GUI in order “to accommodate communication with terminals having a GUI, such as GUI 215 and the GUI in a Palm™ handheld computer disclosed by Genske.” Pet. 59 (citing Ex. 1002 ¶ 95); *see also* Pet. Reply 19 (“To satisfy customers who own Palm PDAs, a [Person of Ordinary Skill in the Art (“POSITA”)] would have written suitable code for a camera to implement Iida’s photographing system.”). Petitioner further argues that “[t]o deprive owners of the GUI on

their phones or PDAs, would be contrary to the purpose of Iida of making a camera that can communicate through the devices possessed by the user.”

Pet. 59 (citing Ex. 1002 ¶ 96).

(2) Patent Owner’s Arguments

Patent Owner argues that Petitioner has not shown “that the GUI is configured to enable the user to cause the portable device processor to execute code.” PO Resp. 53. According to Patent Owner, although Genske mentions a GUI, “[t]here is no disclosure or discussion of using that GUI to interact with the **camera** of Genske.” *Id.* Patent Owner further argues that Genske’s “communications with the server are not based on user interaction with an interface on the phone at all,” instead, Patent Owner argues that “Genske discloses that the camera has its **own** interface to receive input from users.” *Id.* at 54.

Patent Owner also argues that “the GUI is only described in the **computer** embodiment, never in the **phone** embodiment.” PO Resp. 55; *see also id.* at 58 (arguing that “[t]he computer embodiment should be given no weight because is not relevant for the proposed combination with Iida’s camera-based system”). Moreover, according to Patent Owner, even the phone-camera embodiment “has no communication channel that both responds to communications resulting from user interaction, and causes a communication to be sent to the server.” *Id.* at 55.

Patent Owner also presents four arguments relating to the reason to combine Iida and Genske. *See* PO Resp. 50–52, 57–63; PO Sur-reply 16–18. Patent Owner’s arguments will be discussed in more detail in our analysis section.

(3) *Our Analysis*

Petitioner has shown that the combination of Iida and Genske teaches the “first program code” limitation recited in claim 1. Specifically, Iida teaches that camera 12—which Petitioner maps to the portable device—includes “[a] control unit 52, which includes a CPU [and] a ROM (which stores therein a program for executing digital camera control processing to be explained later).” Ex. 1003 ¶ 65. Iida further teaches that “the control unit 52 reads, from the ROM or the like, information which expresses the menu screen . . . and instructs this unit 56 to transmit the information to the portable terminal 14.” *Id.* ¶ 83. Therefore, Iida teaches a camera (the portable device) that stores computer code for generating menus (first program code) in its memory.

The menu screens are displayed on the display unit of the portable terminal. Ex. 1003 ¶¶ 82, 83. A user may input a response to the information displayed on the various menu screens via the operating unit of the portable terminal. *Id.* ¶ 84. After the user inputs a response, the information is transmitted from the portable terminal to digital camera. *Id.* The portable camera then determines “which of the choices displayed on the menu screen has been selected” and implements that choice. *Id.* For example, this can result in a new menu screen being displayed on the portable device. *Id.*

Additionally, Genske teaches that a camera can be connected to a number of different computers—including a mobile computer such as a Palm handheld computer—and that some of those computers—including the Palm handheld computer—have a graphical user interface “for receiving user commands and data in a graphical (e.g., ‘point-and-click’) fashion.” Ex. 1004 ¶¶ 21, 55; *see also* Ex. 1002 ¶ 90. Because a user directly interacts

with interface elements of Genske's graphical user interface to enter commands, Genske teaches using an "interactive user interface" as recited in claim 1. *See* Ex. 1002 ¶¶ 90, 92, 97; Ex. 2099 ¶¶ 43, 48.

Petitioner has also shown why a person of ordinary skill in the art would have upgraded the menu screens disclosed in Iida to a graphical user interface of the type disclosed in Genske. *See* Ex. 1002 ¶¶ 85–97. Specifically, a person having ordinary skill in the art would have designed a product that would take advantage of the graphical user interface of devices, such as the Palm handheld computer, that used a graphical user interface. *See* Ex. 1002 ¶¶ 95, 97. That is, a person having ordinary skill in the art would have implemented the various menu screens taught by Iida so that they would be presented as a graphical user of the type used in Genske. *See* Ex. 1002 ¶ 95. Accordingly, a person having ordinary skill in the art would have combined Iida's camera with Genske's GUI and that combination teaches the "first program code" limitation recited in claim 1.

We do not agree with Patent Owner's arguments. With regard to the teachings of the references, Patent Owner focuses narrowly on the elements of Genske and how incorporating those elements into Iida would not result in the "first program code" limitation. *See* PO Resp. 53–56. However, "[t]he question in an obviousness inquiry is whether it would have been obvious to a person of ordinary skill in the art to combine the relevant disclosures of the two references, not whether each individual reference discloses all of the necessary elements." *Game & Tech Co. v. Wargaming Grp. Ltd.*, 942 F.3d 1343, 1352 (Fed. Cir. 2019). Additionally, "[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Instead, the relevant issue is "what

the combined teachings of the references would have suggested to those of ordinary skill in the art.” *Id.* “Combining the *teachings* of references does not involve an ability to combine their specific structures.” *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973); *see also In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (“It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements.” (citing *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc))).

The issue presented by Petitioner’s obviousness ground is not whether it would have been obvious to incorporate various elements from Genske into Iida. The relevant issue is whether it would have been obvious to modify Iida’s menu screens to be an interactive graphical user interface, like the one disclosed in Genske. Pet. 59. As discussed above, the answer to that question is yes.

We also do not agree with any of Patent Owner’s four arguments relating to the reason to combine Iida and Genske.

First, Patent Owner argues that a person having ordinary skill in the art would have no reason to combine Iida and Genske. *See* PO Resp. 50–52; PO Sur-reply 16–17. Specifically, Patent Owner argues that the evidence shows what a person having ordinary skill in the art “could” have done, not what they would have done and that Iida and Genske “have conflicting purposes and radically different approaches.” PO Resp. 51–52; PO Sur-reply 16–17. Patent Owner further argues that because a GUI can still have a prompt-based text interface in a window, “Petitioner’s purported motivation to combine is thus inapposite.” PO Resp. 52.

We do not agree. Although Mr. Geier occasionally uses the word “could” in his testimony, taken as a whole, his testimony discusses what a

person having ordinary skill in the art would have done. *Compare* Ex. 1002 ¶ 90 (describing what a user could do), *with* ¶ 95 (describing how a person having ordinary skill in the art would have combined the references). Thus, Mr. Geier’s testimony focuses primarily on what a person having ordinary skill in the art would have been motivated to do and provides a sufficient reason to combine Iida and Genske. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”), *cited with approval in KSR*, 550 U.S. at 418.

We also do not agree with Patent Owner that Iida and Genske are so different that a person of ordinary skill in the art would not have combined them. Prior art is analogous and may be used in combination to prove that a claimed invention would have been obvious when the different references are: (1) from the same field of endeavor as the claimed invention; or (2) reasonably pertinent to the particular problem faced by the inventor, if the art is not from the same field of endeavor. *In re Bigio*, 381 F.3d 1320, 1325–26 (Fed. Cir. 2004). “The Supreme Court’s decision in *KSR* . . . directs us to construe the scope of analogous art broadly.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010). “The field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field.” *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016).

Although Patent Owner’s argument focuses on the specific point of novelty of each of the references, that is not the proper analysis. Instead, we must broadly consider the field of endeavor. *See Unwired*, 841 F.3d at 1001. That is, although the point of novelty of Iida may be the use of an

inexpensive camera and the point of novelty of Genske may be injecting software from the camera to a terminal, in a broader sense they both—like the '047 patent—relate to connecting portable devices such as cameras to computer terminals. *See, e.g.*, Ex. 1003, code (57) (“After the user photographs images with the digital still camera, image data for images, which the user selects, is saved in the image data saving area via a portable apparatus”); Ex. 1004 ¶ 21 (“In particular, the following description focuses on an embodiment of the present invention in a digital camera device, the currently-preferred embodiment, which may be occasionally connected to a multitude of different ‘host’ devices, such as a Palm[™] handheld computer or a cellular phone.”); *see also* Ex. 1002 ¶ 79 (“[B]oth Genske and Iida are directed to digital cameras that can communicate with devices like cellular phones or PDAs or mobile computers. . . .”). More importantly, Petitioner has shown that a person having ordinary skill in the art would have been motivated to modify Iida’s menu screens to be an interactive graphical user interface, like the one disclosed in Genske, in order to take advantage of touch screens and graphical user interfaces available on devices, such as the Palm handheld computer. *See* Ex. 1002 ¶¶ 95, 97. Therefore, Petitioner has shown that a person having ordinary skill in the art would have had a reason to combine the specific teachings of Iida and Genske.

We are not persuaded by Patent Owner’s argument that, having made the decision to use a GUI such as used in Genske, the person having ordinary skill in the art would have used text elements instead of taking advantage of the interface elements of a GUI. It makes no sense to upgrade Iida’s menu screens to a GUI without taking advantage of the GUI’s interactive “point-and-click” capabilities. *See* Ex. 1002 ¶ 96.

Second, Patent Owner argues that “modifying Iida with Genske would be ineffective because the basic functionality and purpose of Iida is incompatible with that of Genske.” PO Resp. 57 (citing Ex. 2099 ¶ 127); *see also id.* at 57–58. Specifically, Patent Owner argues “the Petition fails to provide any explanation of how—or if—injection of software would work in the Iida system, or with users’ mobile phones of varying makes and models and employing varying operating systems and versions.” *Id.* at 57. Patent Owner further argues that “replacing the mobile phone with a robust computer” of Genske’s GUI embodiment would “defeat Iida’s purposes of providing a rental camera that works on-the-go with a mobile phone that the user carries with them.” *Id.* at 58; *see also* PO Sur-reply 18–19 (discussing Genske’s different embodiments).

We do not agree. As discussed above, the issue is not whether a person having ordinary skill in the art would have combined *all* of Genske with *all* of Iida, but whether a person having ordinary skill in the art would have combined Genske’s teaching of a GUI to upgrade the menu screens in Iida. *See Keller*, 642 F.2d at 425; *Nievelt*, 482 F.2d at 968; *Mouttet*, 686 F.3d at 1332. Although Patent Owner argues that combining the entirety of Iida and Genske would be ineffective, Patent Owner has not argued that the specific modifications Petitioner relies on would be ineffective. As such, Patent Owner’s argument misses the mark.

Moreover, contrary to Patent Owner’s argument, Genske teaches a mobile device with a GUI, not just a computer. *See* PO Resp. 58 (arguing “that the standard computer GUI is only used in Genske’s *computer* embodiment, never in the *phone* embodiment”). Specifically, Genske teaches using a Palm handheld, which uses a GUI. *See* Ex. 1004 ¶ 21 (discussing the Palm handheld computer); Ex. 1002 ¶ 90 (“The Palm™

handheld computer . . . was known to include a touch screen for use in interacting with a GUI.”).

Third, Patent Owner argues combining Iida and Genske will reduce terminal compatibility. PO Resp. 58–60; PO Sur-reply 17–18. Specifically, Patent Owner argues that “replacing Iida’s text interface with a GUI on the portable apparatus would make it compatible with ***fewer, not more, devices*** circa 2004.” PO Resp. 58; *see also* PO Sur-reply 17. According to Patent Owner, because “many push-button phones that existed in 2004 could not have supported a GUI, modifying Iida’s camera to us a GUI would have defeated Iida’s purpose of providing users with a rental camera compatible with the widest possible range of user devices.” PO Resp. 59; *see also* PO Sur-reply 17. Instead, according to Patent Owner, a person having ordinary skill in the art would have used Iida’s static image which “would make the camera compatible with the vast majority of portable phones at the time.” PO Sur-reply 18 (citing Ex. 2099 ¶¶ 131–138); PO Resp. 59–60.

We do not agree with Patent Owner that a reduction in terminal compatibility teaches away from combining Iida and Genske. Patent Owner’s economics argument is inapposite. “That a given combination would not be made by businessmen for economic reasons does not mean that persons skilled in the art would not make the combination because of some technological incompatibility.” *In re Farrenkopf*, 713 F.2d 714, 718 (Fed. Cir. 1983); *Velander v. Garner*, 348 F.3d 1359, 1368 (Fed. Cir. 2003) (“expense, time, and effort involved” are distinct from likelihood of success). Thus, although Patent Owner may have provided reasons why a business person might not have wanted an interface with limited use, Patent Owner’s reasons do not rebut the evidence that shows what a person having ordinary skill in the art would have been motivated to do.

Moreover, Mr. Geier testified, based on actual past business practice, that a businessperson at the relevant time would have made multiple products for different customer bases:

Q. Wouldn't the designer have to consider the situation in which the -- some users would want to have a GUI but other users might have flip phones with no GUI?

A. I imagine there's a range of customers that they have. Again, it's just like at Monarch Marking Systems, we had a portable device that had a DOS-based operating system that you would write software that would have more character-oriented menus versus we also had a PDA, a Palm III that was integrated within that barcode scanner that we could develop GUI applications in. We would sell the GUI ones to the ones that wanted GUIs and we'd write the applications with a graphical user interface using Windows-type development tools. And the other we developed with DOS programming languages. *So we had a product -- two different products, one for one customer base and one for another customer base.*

Ex. 2110, 255:11–256:7 (emphasis added). We find Mr. Geier's testimony, which is based on his real world experience, credible and persuasive.

On the other hand, Dr. Butler's opinion is not supported by any testimony regarding how businesses actually responded to that issue. See Ex. 2099 ¶¶ 131–132. Accordingly, we find Mr. Geier's testimony more credible and find that a businessperson would have sought a product that would give certain customers a GUI while providing a non-GUI user interface for those who did not have a compatible phone.

Fourth, Patent Owner argues that “[t]he substantial technical challenge in giving Iida's camera the ability to switch between a GUI and non-GUI interface . . . would have dissuaded a” person having ordinary skill in the art from making the combination. PO Resp. 61–62. Specifically, Patent Owner argues the version of Java at the relevant time would not

support Java’s Remote Method Invocation (RMI) feature. *Id.* at 61 (citing Ex. 2099 ¶¶ 140–144). According to Patent Owner, “[w]ithout Java RMI, a [person having ordinary skill in the art] would have to develop a suitable protocol from scratch,” which would have involved substantial effort. *Id.* (citing Ex. 2099 ¶¶ 140–144). Patent Owner argues Petitioner’s motivation to combine argument is deficient because it does not “address such tradeoffs and alternative designs.” *Id.* at 62.

We do not agree. Petitioner did not rely on the RMI feature to enable the combination; instead, Mr. Geier’s testimony submitted with the Petition focused on using a different Java tool:

[A person having ordinary skill in the art] would have known to use Java’s AWT (Abstract Window Toolkit) and Swing to implement the GUI’s user interface screens, comprising buttons, checkboxes and menus for users to interact with. Moreover, Genske includes a full description of the Java environment, incorporated by reference from a Java white paper.

Ex. 1002 ¶ 92 (citing Ex. 1004 ¶ 123; Ex. 1018). Mr. Geier further testified as to how the person having ordinary skill in the art would have used those features to create a GUI. *Id.* Mr. Geier also testified that “to program a camera of Iida so that it produces displays and interactions on a graphical user interface of a terminal disclosed by Genske would have involved well-known methods predictably yielding a system that can perform the communication functions taught by Iida.” *Id.* Finally, Mr. Geier testified how a person having ordinary skill in the art could have implemented that program code on the camera to “send[] instructions to a terminal to display menus and graphics on the terminal’s GUI display” without RMI. *See id.* ¶ 94. Because Petitioner and Mr. Geier were not relying on RMI to create the GUI for Iida’s camera, it is not relevant that RMI was not available.

This is consistent with the disclosure of the '047 patent. During the oral hearing, Patent Owner was asked how the '047 patent enabled the protocols that Dr. Butler indicated would have involved substantial effort to be developed by scratch. Tr. 32:22–34:3. In response, Patent Owner identified columns 28 through 29 of the '047 patent. *Id.* at 44:17–45:7. However, the cited section of the Specification simply states that an “access terminal module enabling access of information between the TCAP and access terminal may be developed by employing standard development tools such as . . . Java.” Ex. 1001, 28:59–67. Notably, there is no disclosure of the protocols that Dr. Butler testified would require “substantial effort.” See Ex. 1001, 28:46–29:14; Ex. 2099 ¶ 144. Instead, the '047 patent simply identifies the same tools—standard Java development tools—that Mr. Geier testifies the person having ordinary skill in the art would have used. *Compare* Ex. 1001, 28:46–29:14, *with* Ex. 1002 ¶¶ 92–95. Because Dr. Butler’s testimony is inconsistent with the enabling disclosure of the '047 patent, we find his testimony regarding the substantial effort needed to develop the necessary programing not credible.

Accordingly, for the reasons discussed above, it would have been obvious to a person having ordinary skill in the art to upgrade Iida’s menu screens to a GUI such as the type used in Genske.

b) “*Second Program Code Which . . . Cause[s] a Communication to Be Sent . . .*”

Claim 1 further recites that the executable program code stored in the portable device’s memory includes “second program code which, when executed, enables the portable device to (i) receive a communication resulting from user interaction with the interactive user interface and (ii) cause a communication to be sent through the terminal network interface

to a communications network node.” Ex. 1001, 31:9–14. As a shorthand, we refer to this limitation as the “second program code.”

(1) The Parties’ Arguments

Petitioner argues Iida teaches “the second program code.” Pet. 21–24. Specifically, Petitioner argues the steps disclosed in Iida’s Figure 4C “are performed by control unit 52 of camera 12, based on program code stored on the camera’s ROM.” *Id.* at 24 (citing Ex. 1003 ¶¶ 54, 65). Petitioner further argues “these steps generate a user interface on the terminal’s screen (step 236), receive instructions from the user (steps 238-241), and transfer image data over network 16 to a server (steps 242-246).” *Id.* (citing Ex. 1002 ¶ 49). Petitioner also argues “[t]he image data transferred from camera 12 to image server 18 passes to and through various communication network nodes including, access point 86, nodes on the Internet and image server 18.” *Id.* (citing Ex. 1002 ¶ 49).

Petitioner further argues that it does not matter that the terminal “include[s] code establishing itself as a node on a network.” Pet. Reply 11. According to Petitioner, “[t]he fact that the terminal must take[] such action is not relevant to whether the camera (portable device) includes code that enables it to cause a communication to a communications network node as claimed.” *Id.* Petitioner also argues that Iida functions in the same manner as the terminal and device in the ’047 patent. *Id.* (citing Ex. 1001, 3:65–66).

Patent Owner argues Iida does not teach the “second program code.” PO Resp. 40–43; PO Sur-reply 11–13, 20–21. Specifically, Patent Owner argues that certain of Iida’s steps—such as step 242—that Petitioner is relying on “cannot meet the element because ***the necessary code is not stored on the camera of Iida.***” PO Resp. 40; *see also id.* at 41 (“Step 242, includes execution of code stored on (and executed by) the phone (terminal)

of Iida to provide necessary location information.” (emphasis omitted) (citing Ex. 1003 ¶¶ 20–22, 107–109, 112, 127, Figs. 4C–D, 5; Ex. 2110, 143:13–155:2)). According to Patent Owner, Iida does not meet the “second program code” element because, in Iida, a communication cannot be sent through the terminal network interface to a communications network node “without executing program code stored on the phone.” *Id.* at 42 (citing Ex. 2099 ¶¶ 93–95).

Patent Owner further argues that Iida does not disclose the “communication limitation” that is part of the “second program code.” PO Resp. 37–39; PO Sur-reply 11. Specifically, Patent Owner argues “there is no disclosure in Iida of *any* ability to **secure** communications between the camera and server, or to prevent the portable apparatus of Iida from having access to images being sent or saved.” PO Resp. 38 (citing Ex. 2099 ¶ 51).

(2) Our Analysis

Petitioner has shown that the combination of Iida and Genske teaches the “second program code” limitation recited in claim 1. Specifically, Iida teaches using code stored on the camera to “determine[] whether or not any instruction has been inputted by the user, and when the determination is affirmative, the routine proceeds to one of several branches of processing in accordance with a content of the inputted instruction.” Ex. 1003 ¶ 96; *see also id.* ¶ 101. Iida further teaches that as a result of that communication from the user, the camera sends data—such as image information—through portable terminal 14 to an access point over the internet. *Id.* ¶ 114; Ex. 1002 ¶ 49. Accordingly, Iida teaches the “second program code” limitation.

Although Patent Owner argues that communication-related program code and functionality are stored on Iida’s terminal (PO Resp. 40–42), Patent Owner’s argument is not sufficient to defeat Petitioner’s showing that

program code stored on Iida's camera (portable device) performs the functions recited in claim 1 for "second program code." Pet. 21–24; Ex. 1002 ¶ 49; Ex. 1003 ¶¶ 54, 65. The "second program code" is required to perform two actions: (1) receive a communication and (2) cause a communication to be sent. Ex. 1001, 31:9–14. Nothing in the claim language requires that all communication-related program code resides on the portable device, as opposed to the terminal. Nor does the claim require that the second program code determines where the information will be sent, how the communication link is created, or what specific path will be used. Although Iida's step 242 is performed by the terminal to establish a communication link, it is the camera that receives a communication and causes a communication to be sent over the communication link established by the terminal. *See* Ex. 1003, Fig. 4C.

Moreover, Iida's description of using the terminal to establish a link with a communications network is consistent with the description of how the '047 patent operates. Specifically, the '047 patent refers to the TCAP as being able to use a communications network that the terminal is connected to. Ex. 1001, 3:65–66.

Patent Owner's remaining argument regarding the "communication limitation" is premised on a claim construction that would prevent Iida's portable terminal 14 from having access to the information passing through it. However, because we rejected that claim construction, Patent Owner's arguments are not commensurate with the scope of the claims. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

c) "Third Program Code . . ."

Claim 1 further recites that the executable program code stored in the portable device's memory includes "third program code which, when

executed by the portable device processor in response to a communication resulting from user interaction with the interactive user interface, causes a communication to be transmitted to a communications network node.”

Ex. 1001, 31:15–18. As a shorthand, we refer to this limitation as the “third program code.”

Petitioner argues that the combination of Iida and Genske teaches “the third program code.” Pet. 24–26, 57–62. Specifically, Petitioner argues Iida’s “Fig[ure] 4D shows step 278 (which generates the user interface of Fig. 6I), step 280 (which receive[s] and process[es] the instructions from the user), and step [282] (which cause[s] a communication from control unit 52 to be transmitted to a communications network node, e.g., image server 18).” *Id.* at 26; *see also id.* at 24–25 (citing Ex. 1003 ¶¶ 54, 139, 140). Petitioner further relies on Genske for teaching a graphical user interface and user interaction with that interface. *Id.* at 57–62. According to Petitioner, the combination of Iida and Genske’s graphical user interface teaches the “third program code.” *Id.* at 60–61.

As discussed above in Section II.D.3(b)(3), Genske teaches a graphical user interface that a user interacts with and a person of ordinary skill in the art would have had sufficient rationale to upgrade Iida’s menu screens to present a graphical user interface. Furthermore, Iida’s camera 12 will perform specific steps, including causing a communication to be sent, based on what the user inputs. *See* Sections II.D.3(b)(3), II.D.3(c)(2); *see also* Ex. 1003, Fig. 4D. Accordingly, the combination of Iida and Genske teaches “the third program code” limitation.

Patent Owner relies on the same arguments discussed above regarding the “first program code.” PO Resp. 53–56. For the reasons discussed above

in Section II.D.3(b)(3), we do not agree with Patent Owner’s arguments directed to the interactive user interface.

Additionally, Patent Owner argues that if Petitioner’s arguments are premised on simply replacing Iida’s menu screens with Genske’s GUI, there is no “third program code.” PO Sur-Reply 20. We disagree. We find that, with the exception of the user interface being an interactive user interface, Iida teaches all of the limitations recited in the “third program code” limitation. Upgrading Iida’s menu screens to a graphical user interface like Genske’s would not eliminate that functionality. See Ex. 1002 ¶¶ 93–95.

d) *“Wherein the Portable Device Is Configured to Communicate with the Terminal and to Communicate through the Terminal Network Interface with the Communications Network Node”*

Claim 1 further recites “wherein the portable device is configured to communicate with the terminal and to communicate through the terminal network interface with the communications network node.” Ex. 1001, 31:24–27.

Petitioner argues Iida teaches this limitation. See Pet. 26–27. Specifically, Petitioner argues that Iida discloses that “camera 12 communicates with terminal 14 and communicates through its network interface (first wireless communication unit 66) with the communication network node, including any of access point 86, nodes on the Internet 16 and the image server 18.” Pet. 27 (citing Ex. 1003 ¶¶ 66, 69, 113, Fig. 1C); see also Pet. 26 (citing Ex. 1003 ¶¶ 66, 69, 113, Fig. 4D).

Patent Owner argues, for the same reasons discussed above relating to the “communication limitation” that Iida does not disclose this limitation. See PO Resp. 37–39; PO Sur-reply 11 (summarized in Section II.D.3(c)(1), above).

For the reasons discussed above in Section II.D.3(c)(2), Petitioner has shown that Iida teaches this limitation.

*e) Objective Indicia of Nonobviousness*¹⁴

Patent Owner also presents arguments and evidence of objective indicia of nonobviousness that we consider below. PO Resp. 63–64; PO Sur-reply 22–23.

Objective indicia of nonobviousness may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012). “[O]bjective indicia may often be the most probative and cogent evidence of nonobviousness in the record,” and “help turn back the clock and place the claims in the context that led to their invention.” *Id.* at 1378. Evidence of objective indicia of nonobviousness “must always when present be considered en route to a determination of obviousness.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012); *see also Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc).

Objective indicia of nonobviousness are “only relevant to the obviousness inquiry ‘if there is a nexus between the claimed invention and the [objective indicia of nonobviousness].’” *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017) (quoting *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006)). For objective indicia of

¹⁴ Although we only discuss the objective evidence of nonobviousness in this section, the same analysis applies to determining whether each challenged claim was obvious over the asserted prior art.

nonobviousness to be accorded substantial weight, their proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016).

As the Federal Circuit recently explained, “a patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product ‘is the invention disclosed and claimed.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). That is, presuming nexus is appropriate “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Id.* (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). On the other hand, the patentee is not entitled to a presumption of nexus if the patented invention is only a component of a commercially successful machine or process. *Id.* Once “the patentee has presented a *prima facie* case of nexus, the burden of coming forward with evidence in rebuttal shifts to the challenger . . . to adduce evidence to show that the commercial success was due to extraneous factors other than the patented invention.” *Demaco*, 851 F.2d at 1392–93.

However, “[a] finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations.” *Fox Factory*, 944 F.3d at 1373. “To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the

claimed invention.” *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). “Ultimately, the fact finder must weigh the secondary considerations evidence presented in the context of whether the claimed invention as a whole would have been obvious to a skilled artisan.”

Lectrosonics, Inc. v. Zaxcom, Inc., IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential) (citing *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016)).

(1) *Commercial Success*

Patent Owner argues that “[t]he invention of the ’047 Patent has been a commercial success.” PO Resp. 63. Patent Owner directs us to two jury verdicts in which the juries “found infringement by dozens of different products and collectively awarded over \$12 million in damages for the sale of tens of thousands of infringing units.” *Id.* (citing Ex. 2021; Ex. 2022). According to Patent Owner, “[t]he objective commercial success of products embodying the claimed invention is independent of any particular prior art reference.” PO Sur-reply 22.

Petitioner argues that “[t]he two litigations referenced by Patent Owner were completed before the Iida patent was revealed in this *inter partes* review and thus they have no bearing on this proceeding.” Pet. Reply 24.

Patent Owner does not provide an analysis demonstrating that the infringing products were coextensive (or nearly coextensive) with the challenged claims. See PO Resp. 63. We, therefore, find that a presumption of nexus is inappropriate. See *Lectrosonics*, Paper 33 at 33; *Fox Factory*, 944 F.3d at 1374.

Nor has Patent Owner shown a nexus between the argued commercial success and the merits of the claimed invention. Patent Owner’s evidence

establishes that products that infringed the claims of the '047 patent were sold. *See* Ex. 2011 (jury verdict finding infringement); Ex. 2012 (jury verdict finding infringement). However, because there is no evidence that the alleged commercial success is due to claimed elements—either individually or as a whole—Patent Owner has not established the required nexus. Simply establishing that a product infringes the patent is not enough to show a nexus. *See Fox Factory*, 944 F.3d at 1377 (holding that a *prima facie* case of nexus cannot be made by simply showing that “the patent claims broadly cover the product that is the subject of the evidence of secondary considerations”).

Moreover, even if a nexus had been shown, there is insufficient evidence to show that the infringing products were a commercial success. The jury verdict forms simply identify the products found to infringe the '047 patent and the amount of damages. *See* Ex. 2021; Ex. 2022. There is no evidence—such as a high market share—establishing that those products were a commercial success. *See, e.g., In re Applied Materials, Inc.*, 692 F.3d 1289, 1300 (Fed. Cir. 2012) (“An important component of the commercial success inquiry in the present case is determining whether Applied had a significant market share.”); *Huang*, 100 F.3d at 140 (“This court has noted in the past that evidence related solely to the number of units sold provides a very weak showing of commercial success, if any.”); *In re Baxter Travenol Labs*, 952 F.2d 388, 392 (Fed. Cir. 1991) (“[I]nformation solely on numbers of units sold is insufficient to establish commercial success.”). Without more information, there is insufficient evidence to establish that the tens of thousands of infringing units were a commercial success.

(2) *Licensing*

Patent Owner argues that it has “licensed the ’047 Patent to Interactive Media Corp. (d/b/a ‘Kanguru Solutions’).” PO Resp. 63 (citing Ex. 2113). Petitioner does not address licensing. *See* Pet. Reply 24.

First, Patent Owner has not argued that the licensed products are coextensive with the claims of the ’047 patent, accordingly, there is no presumption of a nexus. *See Lectrosonics*, Paper 33 at 33.

Second, Patent Owner does not identify or explain any nexus between the challenged claims and the licensing activity. Based on the evidence cited by Patent Owner, the ’047 patent is one of several patents that were licensed. *See* Ex. 2113 (stating that Kanguru “maintains a licensing agreement for the IOENGINE portfolio” including, amongst several others, the ’047 patent). However, there is no evidence linking the demand for the license to the ’047 patent as opposed to the other patents in the IOENGINE portfolio.

Third, Patent Owner simply submits a copy of a website indicating that products are licensed, not a copy of the license agreement or any other underlying evidence regarding the circumstances of, or driving forces behind, the license agreements. The mere existence of a license, without more specific information about the circumstances surrounding the license, is not a good indicator of nonobviousness. *See EWP Corp. v Reliance Universal Inc.*, 755 F.2d 898, 907–08 (Fed. Cir. 1985). The current record therefore does not indicate whether these licenses arose out of recognition and acceptance of the claimed subject matter or for some other reason.

(3) *Industry Recognition/Skepticism*

Patent Owner also argues “the invention of the ’047 Patent was met with skepticism in the industry” and praise. PO Resp. 64. As evidence, Patent Owner directs us to Exhibit 2114.

As discussed below with regard to the evidentiary motions (Section H.1), we grant Petitioner’s motion to exclude exhibit 2114 and, therefore, there is no evidence supporting Patent Owner’s contention the claimed invention was met with skepticism and received industry recognition. Accordingly, we give those factors no weight.

However, even if Exhibit 2114 was admissible, Patent Owner has not sufficiently shown a nexus between the objective evidence of nonobviousness and the claimed invention.¹⁵

According to Petitioner, Exhibit 2114 does not establish a nexus because it does not “describe the claimed invention in sufficient detail” and “speaks generally about many ideas and fails to establish that the subject of the letter is the invention claimed in the ’047 patent.” Paper 47, 3 (citing Ex. 2114, 1–3); *see also* Paper 53, 3–4 (“Patent Owner does no more than draw vague inferences to the claimed invention. This is not enough.”).

Patent Owner argues that a sufficient nexus is shown because Exhibit 2114 discusses the ’047 patent and its embodiments. Paper 51, 6. Specifically, Patent Owner argues Mr. Harkabi refers to features relating to Figures 5, 6, 7, and 8 of the ’047 patent. *Id.* at 6–7.

In this case, because Patent Owner does not offer any evidence establishing that the claimed invention is coextensive with the product discussed in the letter, there is no presumption of nexus. *See Lectrosonics*, Paper 33 at 33.

¹⁵ We note that neither of the parties addressed nexus in their substantive briefs. The only discussion of nexus is in connection with Petitioner’s Motion to Exclude.

Moreover, Patent Owner has not met its burden of establishing a nexus between the industry praise and skepticism purportedly shown in Exhibit 2114 and the claimed invention. Specifically, the sections quoted by Patent Owner to show skepticism are related to an operating system. *See* PO Resp. 64 (citing Ex. 2114, 1). Patent Owner has not argued or presented any evidence that a new operating system is required by the challenged claims of the '047 patent. *Id.*; *see also* Ex. 2114, 1. Similarly, the language quoted for industry praise is in a section relating to a business plan for working with Pepsi. *Compare* PO Resp. 64 (quoting Ex. 2114), *with* Ex. 2114, 2–3 (section titled “Pepsi”). There is simply no evidence tying those plans to the challenged claims or showing that the claims are coextensive with the business plan. *See Lectrosonics*, Paper 33 at 34 (finding “Patent Owner has not demonstrated a nexus exists between the evidence presented and the merits of the claimed invention because the evidence is directed to features that are not required by the claims”).

(4) Conclusions on Objective Indicia of Nonobviousness

For the reasons explained above, we conclude that Patent Owner’s evidence purportedly showing commercial success, licensing, industry praise, and skepticism is not sufficient to outweigh Petitioner’s evidence of obviousness of the challenged claims.

f) Conclusion on Obviousness

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine that Petitioner has shown by a preponderance of the evidence that claims 1, 24, and 27 of the '047 patent would have been obvious over Iida and Genske.

4. *Whether Claims 7–20 Are Entitled to Patentable Weight*

a) *The Parties’ Arguments*

Petitioner argues that claims 7–20 “merely recite intended uses for the claimed portable device” and should not be given patentable weight.

Pet. 28. Specifically, Petitioner argues “[a] statement of intended use in an apparatus claim cannot distinguish over . . . prior art . . . that satisfies all the recited structural limitations and is capable of performing the recited functions.” *Id.* at 29 (citing *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). Petitioner further argues that, “unlike the limitation on claimed structure in *Catalina Marketing*, the recitations added by these dependent claims state merely an intended use or purpose for the portable device.” Pet. Reply 13 (footnote omitted) (referring to *Catalina Marketing Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 806 (Fed. Cir. 2002)).

Patent Owner argues that claims 7–20 recite not just the environment in which the device is used, but how the portable device is configured:

In particular, because each of Claims 7–20 further specify the communications network and/or the communications network node, and because the second “wherein” clause of Claim 1 requires that the portable device be **configured to communicate** with the communications network node, Claims 7-20 further specify how the portable device is **configured**.

PO Resp. 43 (citing *Nazomi Commc’ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1344 (Fed. Cir. 2014)); *see also* PO Sur-reply 13. Patent Owner further argues that the cases cited by Petitioner are of limited applicability because those case each involved preambles. PO Resp. 44. According to Patent Owner, *Catalina* makes it clear that the location of the limitation matters. *Id.* (citing *Catalina*, 289 F.3d at 810–11).

b) Our Analysis

“An intended use or purpose usually will not limit the scope of the claim because such statements usually do no more than define a context in which the invention operates.” *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003); *see also Schreiber*, 128 F.3d at 1477–78 (claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function). Although “[s]uch statements often . . . appear in the claim’s preamble,” a statement of intended use or purpose does not “necessarily” have to be recited in the preamble and can appear elsewhere in a claim. *In re Stencel*, 828 F.2d 751, 754 (Fed. Cir. 1987). Accordingly, the patentability of an apparatus claim “depends on the claimed structure, not on the use or purpose of that structure.” *Catalina*, 289 F.3d at 809.

Claim 1 is directed to a portable device, not the system in which the portable device is used. Claim 7¹⁶ depends from claim 1 and recites that “[t]he portable device of claim 1, wherein the communications network comprises a local area network.” Ex. 1001, 31:43–44. The additional limitation recited in claim 7 does not merely recite the environment in which the device is placed; instead, claim 7 requires that the portable device is configured to communicate using a specific “communications network.” Thus, claim 7 requires a specific type of functionality. Accordingly, claims 7 through 20 must be given patentable weight.

¹⁶ Neither Petitioner nor Patent Owner makes separate arguments for the different claims. *See* Pet. 29–29; PO Resp. 43–44. Claim 7 is representative and our analysis and conclusions are equally applicable to claims 8–20.

5. *Analysis of Claims 7 and 12*

Claim 7 depends from claim 1 and recites that “the communications network comprises a local area network.” Ex. 1001, 31:43–44. Claim 12 depends from claim 7 and further requires that “the communications network comprises a wireless local area network.” *Id.* at 31:53–54.

Petitioner argues that “Iida teaches operating the portable device on a network that includes HomeRF, wireless cellphone network, a telephone network and the Internet.” Pet. 30 (citing Ex. 1002 ¶ 56). According to Petitioner, “HomeRF is a wireless protocol that may be used between wireless communication unit 56 and terminal 14” and that the terminal uses a telephone network to connect to the internet. *Id.* (citing Ex. 1003 ¶¶ 66, 69, 70). Petitioner further argues that HomeRF network is a wireless “LAN and it is a component of the communications network between the wireless communication unit 56 and the image server 18.” *Id.* at 31 (citing Ex. 1002 ¶ 57).

Petitioner also argues that because “[t]he ’047 patent contemplates a communications network comprising multiple networks such as a wide area network 113b followed by a high speed LAN (local area network) 113c for communicating with remote storage 105,” there is “no basis for excluding one network along the way but not other networks along the way.” Pet. Reply 14 (citing Ex. 1001, 4:15–21, Fig. 1). Petitioner also argues that “Mr. Geier has explained that ‘[n]o modification to the camera is required because a communication may pass through a LAN (local area network) or a wireless LAN.’” *Id.* at 15 (alteration in original) (citing Ex. 1002 ¶ 55).

Patent Owner argues that “the ‘local area network’ of claims 7 and 12 must be ***between the terminal and the network node***.” PO Resp. 44–45. According to Patent Owner, because “Iida’s reference to HomeRF refers to

the connection ***between the camera and the portable phone***,” it is in the wrong location. *Id.* at 45 (citing Ex. 1003 ¶ 66).

Patent Owner further argues that because “[c]ommunication through a LAN requires that the device have a network address so that it can be identified by other network devices,” Iida’s camera would need to be modified to communicate via a LAN. PO Sur-reply 14 (citing Ex. 2013, 514). According to Patent Owner, if a LAN was used then “there would be no access point to dial up, hence no need for access point determination and dialing.” *Id.* (citing Ex. 1003 ¶¶ 107–110).

We find that Iida teaches that its camera can communicate wirelessly with the terminal. Ex. 1003 ¶ 66. Specifically, Iida teaches using HomeRF, which is a wireless local area network. *Id.*; Ex. 1002 ¶¶ 56–57. Accordingly, Iida teaches that the camera is configured to communicate over a (wireless) local area network as set forth in dependent claims 7 and 12.

We are also not persuaded by Patent Owner’s arguments on whether the use of HomeRF in Iida “relates to the wrong connection.” See PO Resp. 45 (emphasis omitted). Contrary to Patent Owner’s arguments, nothing in independent claim 1 or dependent claims 7 and 12 requires that the communications network be a network containing nodes. See PO Resp. 44–45. To the contrary, although claim 1—from which claims 7 and 12 depend—recites a communications network node, claim 1 does not recite a communications network or define where the communications network begins or ends. Thus, the HomeRF system described in Iida is a communications network because it allows the camera to communicate with the terminal. See Ex. 1002 ¶¶ 56–57.

Furthermore, as discussed above, claims 7 and 12 recite a portable device that is configured to work with specific elements. Thus, even if

Patent Owner is correct that the communications network must include a communications network node, the issue is not whether Iida teaches a local area network or a wireless local area network, but whether the camera described in Iida is configured to work with a local area network or a wireless local area network. Petitioner has shown that the answer to that question is yes:

The structure and configuration of the digital camera 12 of Iida is agnostic as to what networks may be encountered when communications are sent from its wireless communication unit 56 to the image server 18. *No modification to the camera is required* because a communication may pass through a LAN (local area network) or a wireless LAN.

Ex. 1002 ¶ 55 (emphasis added). Thus, no matter where the (wireless) local area network is located between the camera on one end and the image server on the other, the camera is configured to send the image over that (wireless) local area network. *See id.*

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine that Petitioner has shown by a preponderance of the evidence that claims 7 and 12 of the '047 patent would have been obvious over Iida and Genske.

6. *Analysis of Claims 9 and 11*

Claim 9 depends from claim 7 and recites that “the communications network node comprises a data storage system.” Ex. 1001, 31:47–48. Claim 11 depends from claim 7 and recites that “the communications network node comprises a printer.” Ex. 1001, 31:51–52.

With regard to claim 9, Petitioner argues that “Iida discloses large-capacity storage medium 88 connected to image server 18” and that individual users could store image data on that data storage system. Pet. 31–

32 (citing Ex. 1003 ¶¶ 70, 110; Ex. 1002 ¶ 59). Petitioner further argues that “the image server 18 and the storage medium together constitute the node on the communications network used as the data storage system.” *Id.* at 32 (citing Ex. 1002 ¶ 59).

With regard to claim 11, Petitioner argues that “[t]he network taught by Iida may further include MI network 90” or the internet. Pet. 33–34 (citing Ex. 1003 ¶ 71; Ex. 1002 ¶ 61). Petitioner further argues that “the MI network or Internet as taught by Iida is computer 94 connected to a printer 92.” *Id.* at 34.

Patent Owner argues as follows: “With respect to the additional limitations in the dependent claims, second program code would need to be configured differently if the network node were a data storage system (Claim 9) than it would if the network node were a printer (Claim 11).” PO Resp. 44 (citing Ex. 2099 ¶¶ 98–99).

We determine that Iida teaches the additional limitations recited in claims 9 and 11. With regard to claim 9, Iida teaches that the terminal can connect, via the internet, with an image server comprising a workstation and a large capacity storage medium, such as a hard disk. Ex. 1003 ¶¶ 68–70. Accordingly, Iida teaches that the camera is configured to communicate, via the terminal, with a data storage system. Ex. 1002 ¶ 59.

With regard to claim 11, Iida teaches that the image server discussed above is connected via an MI network 90 or the internet to computers possessed by print finishing dealers which may include printers. Ex. 1003 ¶ 71; Ex. 1002 ¶ 61.

Patent Owner’s Response directs us to Dr. Butler’s testimony. PO Resp. 44 (citing Ex. 2099 ¶¶ 98–99). However, we do not find Dr. Butler’s testimony credible. Specifically, Iida expressly teaches using a camera that

can communicate with a data storage system and printer through the terminal. See Ex. 1003 ¶¶ 68–71. Dr. Butler’s conclusory testimony does not sufficiently explain why Iida would need to be modified in order to accomplish a function expressly disclosed in the reference. See Ex. 2099 ¶¶ 98–99. Because his testimony is inconsistent with the express disclosure of Iida, we find Dr. Butler’s testimony regarding the need to modify Iida not credible.

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine that Petitioner has shown by a preponderance of the evidence that claims 9 and 11 of the ’047 patent would have been obvious over Iida and Genske.

7. Analysis of Claim 25

Claim 25 depends from claim 24 and recites that “executing the first program code stored on the portable device memory causes the terminal processor to present an interactive user interface on the first output component.” Ex. 1001, 32:41–44.

Petitioner argues Iida teaches the limitation recited in claim 25. Pet. 45–46 (citing Ex. 1003 ¶ 83). Specifically, Petitioner argues that “control unit 60 corresponds to the terminal processor and the control unit 60 is caused to present the interactive user interface, i.e., the menu screen, on the display unit 62.” *Id.* at 46; see also Pet. Reply 16 (“There is no dispute that when properly interpreted, Iida explicitly discloses ‘the control unit 60[of the portable terminal] . . . displays the menu screen on the display unit 62.’” (alteration in original) (quoting Ex. 1003 ¶ 83)). Petitioner further argues that “‘presented’ means ‘shown’ or ‘displayed’” and that the “[d]etermination of the content or arrangement and responding to

interactions are not implicated by the action of merely presenting on the first output component.” Pet. Reply 16.

Patent Owner argues that Iida’s camera dictates the detail of each of the static menu images presented on the terminal’s display and the terminal “is not involved in determining either the content or the arrangement of what is displayed.” PO Resp. 45; *see also* PO Sur-reply 14. Patent Owner further argues that the claim requires that the terminal take action in response to a user interacting with the interactive user interface. PO Resp. 46.

We determine Iida teaches the additional limitation recited in claim 25. Iida states that “the control unit 60 [of the portable terminal] judges the received information to be information for displaying a screen on the display unit 62, and *it displays the menu screen on the display unit 62.*” Ex. 1003 ¶ 83 (emphasis added). The “it” in the italicized language is the terminal’s processor. *See id.* Accordingly, Iida, upgraded to display a graphical user interface like Genske’s, teaches that program code stored and executed on the camera generates an interactive user interface, transmits the interactive user interface to the portable terminal, and a processor of the portable terminal causes the interface to be displayed on the terminal’s screen. *See* Ex. 1003 ¶ 83.

We do not agree with Patent Owner’s arguments. Patent Owner’s arguments are premised on an implicit claim construction that the terminal’s processor must control the contents of the interactive user interface and respond to a user’s interaction with the interactive user interface. However, neither requirement is supported by the plain and ordinary meaning of the words of the claim. Claim 25 simply requires the terminal to “present an interactive user interface” (Ex. 1001, 32:43–45) and “present” is broad enough to encompass showing. Nothing in the word “present” requires

either that the terminal generates the content of the interactive user interface or responds to a user interacting with it. Instead, these functions are performed by software executing on ***the portable device***. Claims 24 and 25 recite “executing first program code stored on the portable device memory” to cause the presentation of an interactive user interface, and claim 24 recites “executing third processing code stored on the portable device memory” in response to a communication resulting from user interaction with the interactive user interface. Ex. 1001, 32:20–25, 32:32–35, 32:41–44.

That “present” simply refers to showing or displaying is consistent with the ’047 patent’s other uses of the word “present.” For example, the ’047 patent states that “the user is presented with a login prompt 205 on the AT’s display mechanism, e.g., on a video monitor.” Ex. 1001, 4:40–41. Presented is used in that sentence to refer to showing or displaying. Nothing in that sentence requires that the prompt be generated by a certain device, just where it was shown. *See id.* at 4:33–45. Other uses also simply describe where the information is shown, not where an image is generated or where the response takes place. *See, e.g., id.* at 7:33–35, 8:38–42, 8:48–51.

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine that Petitioner has shown by a preponderance of the evidence that claim 25 of the ’047 patent would have been obvious over Iida and Genske.

8. Analysis of Claims 2–4, 6, 8, 10, 13–21, 23, and 28

Petitioner argues that the combination of Iida and Genske teaches the additional limitations recited in claims 2–4, 6, 8, 10, 13–21, 23, and 28. *See* Pet. 27–28, 31–39, 51–53, 61.

Patent Owner did not separately address Petitioner’s arguments directed to claims 2–4, 6, 8, 10, 13–21, 23, and 28. *See generally* PO Resp.; PO Sur-Reply.

Based on the evidence and arguments presented in the Petition, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2–4, 6, 8, 10, 13–21, 23, and 28 would have been obvious over the combined teachings of Iida and Genske.

E. Ground 6: Obvious over Iida, Genske, and Imbrie

Petitioner argues that claim 5 would have been obvious over Iida, Genske, and Imbrie. Pet. 62; *see also* Pet. 54–55.

1. Imbrie

Imbrie is titled “Secure and Accountable Wireless Printing System” and is directed to “[a] secure wireless printing system and method for printing data from a wireless device at a selected printing assembly while providing accountability and generating revenues from such usage.” Ex. 1005, codes (54), (57). Imbrie teaches how a user can print a data file from various devices, including a digital camera, by sending the file wirelessly to a computer with an attached printer. *Id.* ¶¶ 8, 34–36, Fig. 1. Imbrie also discloses various ways of wirelessly transmitting the information, including using WiFi. *Id.* ¶ 36.

2. Analysis of Claim 5

Claim 5 depends from claim 3, which depends from claim 1. Ex. 1001, 31:30–32, 31:36–38. Claim 5 recites that the external communication interface is “the wireless communication interface [that] employs WiFi connectivity protocol.” *Id.*

a) The Parties' Arguments

Petitioner argues Imbrie teaches the additional limitation recited in claim 5 and that a person having ordinary skill in the art would have combined the teachings of Iida, Genske, and Imbrie. Pet. 54–55, 62. Specifically, Petitioner argues Imbrie teaches several different methods of wireless communication, including IEEE-802.11b, otherwise known as Wi-Fi. *Id.* at 54 (citing Ex. 1005 ¶ 36).

Petitioner also argues that a person having ordinary skill in the art would have known that HomeRF, a wireless protocol recited in Iida, “went obsolete in 2003 when it was beaten out in the marketplace by wireless protocols, including [WiFi] and Bluetooth.” Pet. 54 (citing Ex. 1002 ¶ 81). Petitioner further argues “Wi-Fi was a recognized option for digital camera wireless communication protocol in the prior art for digital cameras” and “[i]n the absence of HomeRF from the market at the time of the ’047 patent application in 2004,” Wi-Fi was an obvious choice to a person having ordinary skill in the art. *Id.* (citing Ex. 1002 ¶ 82); *see also* Pet. Reply 18. According to Petitioner, “[i]n view of Imbrie and the popularity of [WiFi], it would have been a simple substitution to make use of Wi-Fi for wireless communication in a digital camera instead of either of Bluetooth or HomeRF” and that such a substitution “merely combines prior art elements according to well-known methods predictably yielding a system that can perform the actions described in Iida.” Pet. 55 (citing Ex. 1002 ¶ 84). Petitioner further argues that “[t]he benefits of Bluetooth are irrelevant when obviousness has already been established based on motivation to substitute Wi-Fi for HomeRF.” Pet. Reply 18–19.

Patent Owner argues that a person having ordinary skill in the art would not have combined Imbrie with Iida because “the systems described

in the two references are for entirely different purposes.” PO Resp. 47. According to Patent Owner, “Imbrie is for nothing more than printing documents from a wireless device, Ex. 1005, Abstract, [0002], [0008], and the Petition identifies no reason that someone would want to combine Imbrie with Iida’s inexpensive rental digital camera.” *Id.*

Patent Owner further argues that because “WiFi’s primary purpose is to allow networking, not point-to-point communication as would be required to communicate between Iida’s camera and portable apparatus,” the person having ordinary skill in the art would not have replaced Bluetooth and HomeRF with WiFi. *Id.* at 48 (citing Ex. 2099 ¶¶ 112–115). Patent Owner further argues that using Iida’s portable apparatus to connect to the camera would prevent it from using WiFi to connect to the local area network. *Id.*

b) Our Analysis

Imbrie teaches using WiFi to connect a camera with another device. Ex. 1005 ¶ 36.

We further find that a person of ordinary skill in the art would have used WiFi to connect Iida’s camera and portable terminal. Specifically, Iida teaches using HomeRF to connect the camera to the portable terminal. Ex. 1003 ¶ 66. However, the unrebutted testimony of Mr. Geier’s shows that, by 2003, HomeRF was an obsolete system which had been “beaten out in the marketplace by other wireless protocols, including [WiFi] and Bluetooth.” Ex. 1002 ¶ 81. We credit Mr. Geier’s well-reasoned testimony that, because HomeRF had become obsolete, a person having ordinary skill in the art would have been motivated to replace it with one of the systems that had replaced it in the marketplace, such as WiFi. *Id.* ¶¶ 82–84. Based on Mr. Geier’s testimony, we further find that a person of ordinary skill in

the art would have been able to implement using WiFi with Iida's system. *See id.* ¶¶ 83–84.

We do not agree with Patent Owner's arguments.

First, we do not agree with Patent Owner that Iida and Imbrie are so different that a person of ordinary skill in the art would not have combined them. Patent Owner's argument improperly focuses on the specific point of novelty of each of the references and does not broadly consider the field of endeavor. *See Unwired Planet*, 841 F.3d at 1001. Instead, we determine that the references are analogous art to the claimed invention and would be combined because they both address issues surrounding connecting portable devices to computers, just like the '047 patent. *See Ex. 1002* ¶¶ 82–83 (both Iida and Imbrie teach wireless protocols that can connect devices).

Second, we do not agree with Patent Owner that there was no need to substitute WiFi for HomeRF because Bluetooth was specifically mentioned in Iida and was still available in 2004 and today. As the Supreme Court held in *KSR*, “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” 550 U.S. at 417. The Supreme Court further held that “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.*

Petitioner has shown both (1) why market forces would suggest using WiFi—“the ‘most common wireless local area network’ at the time”—over HomeRF—which was no longer on the market—and (2) that “the use of WiFi in the wireless communication interface of Iida merely combines prior art elements according to well-known methods predictably yielding a system

that can perform the actions described in Iida.” Ex. 1002 ¶¶ 82–83.

Accordingly, although a person having ordinary skill in the art could have used Bluetooth, Petitioner has shown why a person having ordinary skill in the art would have been motivated to replace HomeRF with its market successor, WiFi.

Third, we do not find adequate record support for Patent Owner’s argument that “a WiFi chip cannot operate simultaneously in both ‘ad-hoc’ mode (in which individual devices communicate directly with each other) and ‘infrastructure’ mode (used for networks).” PO Resp. 48 (emphasis omitted) (citing Ex. 2099 ¶¶ 112–115). We have reviewed Dr. Butler’s testimony and do not find support for Patent Owner’s proposition. *See* Ex. 2099 ¶¶ 112–115. Moreover, although Dr. Butler testifies about the challenges associated with using a WiFi in an ad hoc mode, he also testifies that “802.11 (Wi-Fi) can be set up to form an ad hoc network” necessary for point to point communications. Ex. 2099 ¶ 114.

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine that Petitioner has shown by a preponderance of the evidence that claim 5 of the ’047 patent would have been obvious over Iida, Genske, and Imbrie.

F. Ground 7: Obvious over Iida, Genske, and Aganovic

Petitioner argues that claims 10 and 17 would have been obvious over Iida, Genske, and Aganovic. Pet. 63; *see also* Pet. 55–57.

1. Summary of Aganovic

Aganovic is titled “Multi-User Information Management System Adapted for Efficient, Remote, On-Demand Document Management, Storage and Retrieval” and “relates to document management systems capable of multi-user, remote, document management, storage and retrieval

operation.” Ex. 1006, code (54), 1:10–12. Aganovic teaches using “a Redundant Array of Inexpensive Disks (RAID), which allows for high capacity and data transfer speed, while providing the safety of backup storage. The RAID is ideally of the network-attached variety.” *Id.* at 5:58–63.

2. *Claims 10 and 17*

Claims 10 and 17 both indirectly depend from claim 1 and recite that the communications network node is a “redundant array of independent disks.” Ex. 1001, 31:47–50, 31:61–65.

a) *The Parties’ Arguments*

Petitioner argues Aganovic teaches the additional limitation recited in claims 10 and 17 and that a person having ordinary skill in the art would have combined the teachings of Iida, Genske, and Aganovic. Pet. 55–57, 63. Specifically, Petitioner argues Iida teaches “a portable device, camera 12, which interacts with image server 18 and its connected ‘large-capacity storage medium 88 comprising a hard disk or the like.’” Pet. 56 (quoting Ex. 1003 ¶ 70). Petitioner further argues Aganovic teaches using “a Redundant Array of Inexpensive Disks (RAID)^[17] for an information management system calling for a large capacity memory” that is accessible through the internet. *Id.* at 56 (citing Ex. 1006, 5:55–61). According to Petitioner, a person having ordinary skill in the art would have combined Aganovic’s RAID with Iida’s data storage system because it is a simple

¹⁷ Petitioner asserts that a “Redundant Array of Inexpensive Disks as used in Aganovic . . . was also known as a Redundant Array of Independent Disks as claimed in the ’047 patent.” Pet. 55 (citing Ex. 1002 ¶ 85; Ex. 1007, 2 n.1).

substitution that would achieve predictable results. *Id.* at 56–57 (citing Ex. 1002 ¶ 86).

Patent Owner argues that a person having ordinary skill in the art would not have “combine[d] Iida and Aganovic because their systems are for entirely different purposes.” PO Resp. 49. Specifically, Patent Owner argues that “Iida’s system is for providing a lower-cost, rental alternative to more-expensive digital cameras” while “Aganovic’s system is a general-purpose computer that can be used for remote data storage and retrieval.” *Id.* at 49–50.

Patent Owner further argues that Petitioner fails to show a reason to combine the references: “But Petitioner cannot show a claim obvious merely by alleging that ‘each of its elements was, independently, known in the prior art.’” PO Resp. 50 (citing *KSR*, 550 U.S. at 418).

b) Our Analysis

Iida teaches using an image server connected to “a large-capacity storage medium 88 comprising a hard disk or the like.” Ex. 1003 ¶ 70. Iida describes the large-capacity storage medium as including “a large number of image data saving areas for separately saving image data for individual users, with the image data having been obtained by the users, who have rented the digital still cameras 12 of this embodiment.” *Id.*

Aganovic teaches using a RAID as a data storage system that “allows for high capacity and data transfer speed, while providing the safety of backup storage.” Ex. 1006, 5:55–61.

We credit Mr. Geier’s well-reasoned testimony that a person having ordinary skill in the art would have been motivated to use a known RAID system as taught by Aganovic as the high-capacity storage medium required by Iida. *See* Ex. 1002 ¶¶ 86–87. Mr. Geier’s testimony is supported by the

cited disclosures of Iida and Aganovic, as discussed above. Ex. 1003 ¶ 70; Ex. 1006, 5:55–61. Such a modification would have provided Iida’s large capacity data system with the advantages of Aganovic’s RAID system. *Id.*; *see also* Ex. 1006, 5:55–61.

For the reasons set forth below, we have considered Patent Owner’s arguments, but are nevertheless persuaded that Petitioner has shown a reason to combine the relevant teachings of Iida and Aganovic.

First, we do not agree with Patent Owner that Iida and Aganovic are so different that a person of ordinary skill in the art would not have combined them. Patent Owner’s argument focuses on the specific point of novelty of each of the references and does not broadly consider the field of endeavor. *See Unwired Planet*, 841 F.3d at 1001. Instead, the references are analogous and would be combined because they both address issues surrounding storing data at a remote location, which is also an issue addressed by the ’047 patent. *See* Ex. 1002 ¶¶ 85–86 (both Iida and Aganovic teach storing data at a remote location).

Second, we do not agree with Patent Owner that Petitioner has not sufficiently shown a reason to combine the references. Petitioner is not simply arguing that the invention is obvious because the elements are known. Instead Petitioner and Mr. Geier provide “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *Kahn*, 441 F.3d at 988). Specifically, Mr. Geier testified as to an advantage of a RAID system—resiliency—and that a person having ordinary skill in the art would have used a RAID with Iida’s invention to achieve that advantage. Ex. 1002 ¶ 87.

We have considered the entirety of the evidence submitted by the parties, including the objective evidence of nonobviousness, and determine

that Petitioner has shown by a preponderance of the evidence that claims 10 and 17 of the '047 patent would have been obvious over Iida, Genske, and Aganovic.

G. Other Grounds

Having found that all of the challenged claims unpatentable, we decline to address Petitioner's other challenges. Specifically, we decline to address the parties' arguments directed to whether certain claims of the '047 patent are anticipated by Iida (Petitioner's Ground 1) or any obviousness claims premised on the anticipation of the independent claims (Petitioner's Grounds 2 through 4). *See Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, Nos. 2019-1594, 2019-1604, 2019-1605, 2020 WL 2071962, *4 (Fed. Cir. Apr. 30, 2020); *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984) (holding that once a dispositive issue is decided, there is no need to decide other issues).¹⁸

H. Evidentiary Motions

Patent Owner and Petitioner each filed motions to exclude certain evidence. We first address Petitioner's motion, and then turn to Patent Owner's motion.

1. Petitioner's Motion to Exclude

Petitioner filed a motion to exclude Exhibit 2114 as not authenticated under Federal Rule of Evidence 901, hearsay under Rules 801–803, and not

¹⁸ No inference should be drawn from the Panel's decision not to address arguments directed to whether certain claims of the '047 patent are anticipated by Iida (Petitioner's Ground 1) or any obviousness arguments premised on the anticipation of the independent claims (Petitioner's Grounds 2 through 4). Specifically, we make no finding on whether Iida discloses an "interactive user interface" as recited in claim 1.

relevant under Rules 401 and 402. For the reasons set forth below, we grant Petitioner’s motion and exclude Exhibit 2114.

a) Authentication

Petitioner, relying on *Linear*,¹⁹ argues Exhibit 2114 has not been authenticated because it “contains no identification of an author, a recipient, or the genuineness of its contents, and further is not accompanied by testimony attesting to its authenticity.” Paper 47, 2. Petitioner further argues that any “distinctive characteristics” of Exhibit 2114 are insufficient for authentication and the exhibit is not self-authenticating. *Id.*; Paper 53, 1–2 (citing Wright & Miller, 31 *Fed. Prac. & Proc. Evid.* § 7109 (1st ed.)).

Patent Owner argues that “[t]here are no magic words required to authenticate a document; in fact, ‘[a]uthentication is a “relatively low[] hurdle,” and may be proved through a variety of methods, including circumstantial evidence.’” Paper 51, 4 (second and third alterations in original) (quoting *Zen Design Grp., Ltd. v. Scholastic, Inc.*, No. 16-12936, 2019 WL 2996190, at *2 (E.D. Mich. July 9, 2019)). Patent Owner further argues that “Ex. 2114 contains several characteristics evincing its reliability to be what Patent Owner claims it is: an August 2003 letter from Dan Harkabi to Scott McNulty,” namely that the letter clearly identifies the author and recipient and references Dan Harkabi’s company, MDRM. *Id.* at 4–5. Patent Owner also argues *Linear* is inapposite because, in that case, “the letters were ‘not signed, [were] not on company letterhead, and [bore] no outward indicia of having ever been mailed to a customer.’” *Id.* at 5 (alterations in original) (quoting *Linear*, 275 F.3d at 1055).

¹⁹ *Linear Tech. Corp. v. Micrel, Inc.*, 275 F.3d 1040, 1055–56 (Fed. Cir. 2001).

Federal Rule of Evidence 901(a) states: “To satisfy the requirement of authenticating or identifying an item of evidence, the proponent must produce evidence sufficient to support a finding that the item is what the proponent claims it is.”

We find Petitioner’s reliance on *Linear* persuasive. In that case, the Federal Circuit affirmed an order excluding certain letters found in the files of a former sales representative which were “not signed, [were] not on company letterhead, and bear no outward indicia of having ever been mailed to a customer.” *Linear*, 275 F.3d at 1055. As in *Linear*, Exhibit 2114 is not signed and there is no evidence or indicia indicating it was ever mailed. See Ex. 2114. Although it has the logo MDRM on it, there is no evidence in the record that the logo is a letterhead or is even a logo of the company that Dan Harkabi worked for. See generally Paper 51. Moreover, “[w]hile earlier cases often assumed that the use of letterhead paper is sufficient to establish authenticity, that conclusion is now undermined by the current widespread availability of photocopy machines, scanners, and computer software capable of forging any letterhead.” Wright & Miller, 31 *Fed. Prac. & Proc. Evid.* § 7109 (1st ed.) (citing *Total Containment, Inc. v. Environ Prod., Inc.*, 921 F. Supp. 1355, 1370 (E.D. Pa. 1995), *aff’d in part, vacated in part*, 106 F.3d 427 (Fed. Cir. 1997)).

In the absence of any supporting testimony, Patent Owner has not met its burden of showing that Exhibit 2114 is what the Patent Owner claims it is.

b) Hearsay

Petitioner also argues Exhibit 2114 is inadmissible hearsay because it is a statement made outside of this *inter partes* review proceeding and being offered for the truth of the matter asserted. Paper 47, 1–2. Petitioner further

argues that although courts allow industry praise into the record over a hearsay objection, that does not apply to an individual's favorable review. Paper 53, 4–5 (citing *Sonos, Inc. v. D&M Holdings Inc.*, No. 14-1330-WCB, D.I. 504, slip op. 6 (D. Del. Dec. 8, 2017) (Bryson, J.)).

Patent Owner argues that “[i]t is well established that, when offered as objective indicia of non-obviousness, neither skepticism nor praise is hearsay because it is not being offered for the truth of the matter asserted.” Paper 51, 2 (citing *Sonos*, slip op. 10–12; *Cisco Sys. Inc. v. Centripetal Networks, Inc.*, IPR2018-01437, Paper 40 at 32 (PTAB Jan. 23, 2020) (Final Written Decision)). According to Patent Owner, because Exhibit 2114 is being offered to show the views of the industry and skepticism, it is not being offered for the truth of the matter asserted. *Id.* at 3.

We find Judge Bryson's well-reasoned decision in *Sonos* instructive. *Sonos* draws a distinction between two types of industry praise. On one hand, “to the extent that the evidence is relevant to show that persons in the industry praised Sonos's claimed inventions, such evidence is admissible over a hearsay objection.” *Sonos*, slip op. at 6. Thus, for example, “articles describing awards or the equivalent conferred on the patented invention . . . present the clearest examples of evidence of industry praise, at least when it is clear the praise is directed to the merits of the claimed invention.” *Id.* at 6–7.

On the other hand, “that principle does not justify the admission of the full text of every document that contains a favorable comment about Sonos or its products from any source. In order to be admissible, *the evidence must reflect praise in the industry, not just an individual's favorable view of the product.*” *Id.* at 5 (emphasis added). As a result, “[d]ocuments that reflect simply favorable comments about a company and its products are more

problematical” as they are “simply hearsay comments about . . . products.” *Id.* at 5, 7.

In this case, Exhibit 2114 reflects personal opinions of the author. *See* PO Resp. 64. Even if the author was an industry leader, nothing in Exhibit 2114 indicates that he is speaking on behalf of an industry group or presenting an industry award. *See* Ex. 2114. Rather, the author is merely giving his own personal opinions. *See id.* Thus, Exhibits 2114 is being offered for the truth of the matter asserted and is inadmissible hearsay. *See Sonos*, slip op. 5–7.

c) Relevancy

The gravamen of Petitioner’s argument regarding the lack of relevancy is that Patent owner has not shown a sufficient nexus between Exhibit 2114 and the claimed invention. Paper 47, 3 (arguing that Exhibit 2114 does not establish a nexus because it does not “describe the claimed invention in sufficient detail” and “speaks generally about many ideas and fails to establish that the subject of the letter is the invention claimed in the ’047 patent” (citing Ex. 2114, 1–3)); *see also* Paper 53, 3–4 (“Patent Owner does no more than draw vague inferences to the claimed invention. This is not enough.”). However, nexus is a substantive requirement, not an evidentiary threshold. Accordingly, we do not address Petitioner’s arguments in the context of the Motion to Exclude.

d) Conclusion

For the reasons set forth above, we grant Petitioner’s motion to exclude Exhibit 2114 on two separate grounds.

2. Patent Owner’s Motion

Patent Owner seeks to exclude (1) a portion of Exhibit 1011 as hearsay, (2) Exhibits 1016 and 1017 as hearsay, and (3) Exhibits 1031–1035

as irrelevant. Paper 48. To the extent Mr. Geier testified about or relied on Exhibits 1011, 1016, and 1017, Patent Owner does not seek to exclude that testimony. *See* Paper 55, 2 (“Patent Owner’s evidentiary argument regarding Exhibit 1011 relates to the attorney argument in Petitioner’s Reply. This attorney argument does not mention [Mr.] Geier.”), 4 (“Here, Mr. Geier’s opinion may be admissible, but Ex. 1016 is not.”).

We do not rely on Exhibits 1011, 1016, 1017, or 1031–1035 in making our ultimate determination on the patentability of the challenged claims. Accordingly, we need not decide Patent Owners’ motion and we dismiss that Patent Owners’ motion as moot.

I. Constitutional Challenge

In its Sur-reply, Patent Owner raises two constitutional challenges:

The Board cannot Constitutionally decide this case and should dismiss it, because (1) APJs are principal officers, but are not appointed and confirmed by the President and Senate, *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019); and (2) retroactive application of IPRs to pre-AIA patents such as the ’047 Patent violates the Takings and Due Process Clauses of the Fifth Amendment.

PO Sur-reply 23.

With regard to the Appointment Clause challenge, that has been addressed by the Federal Circuit’s decision in *Arthrex*, 941 F.3d at 1337 (“This as-applied severance . . . cures the constitutional violation.”); *see also Arthrex, Inc. v. Smith & Nephew, Inc.*, 953 F.3d 760, 764 (Fed. Cir. 2020) (Moore, J., concurring in denial of rehearing) (“Because the APJs were constitutionally appointed as of the implementation of the severance, *inter partes* review decisions going forward were no longer rendered by unconstitutional panels.”). Accordingly, we do not consider this issue any further.

With regard to the Takings and Due Process Clause challenge, we note that challenges to retroactive application of IPRs to pre-AIA patents have been addressed by the Federal Circuit in *Celgene Corp. v. Peter*, 931 F.3d 1342, 1357–1363 (Fed. Cir. 2019), *cert. denied* 2020 WL 3405867 (June 22, 2020) (Takings Clause) and *Sound View Innovations, LLC v. Hulu, LLC*, Nos. 2019-1865, 2019-1867, slip op. at 9–9 (Fed. Cir. July 2, 2020) (non-precedential) (Due Process Clause). Accordingly, we do not consider this issue any further.

CONCLUSION²⁰

For the foregoing reasons, we conclude that Petitioner has demonstrated by a preponderance of the evidence the unpatentability of claims 1–21, 23–25, 27, and 28 of the '047 patent. Specifically, Petitioner has demonstrated by a preponderance of the evidence that (1) claims 1–4, 6–21, 23–25, 27, and 28 would have been obvious under 35 U.S.C. § 103(a) in light of Iida and Genske; (2) claim 5 would have been obvious under 35 U.S.C. § 103(a) in light of Iida, Genske, and Imbrie; and (3) claims 10 and 17 would have been obvious under 35 U.S.C. § 103(a) in light of Iida, Genske, and Aganovic. We declined to address Petitioner's remaining arguments (Petitioner's Grounds 1 through 4). We grant Petitioner's Motion

²⁰ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

to Exclude Exhibit 2114 and dismiss as moot Patent Owner's Motion to Exclude.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–21, 23–25, 27, and 28 of the '047 patent are held unpatentable;

FURTHER ORDERED that Petitioner's motion to exclude Exhibit 2114 is *granted*;

FURTHER CONCLUDE that Patent Owner's motion to exclude is *dismissed as moot*; and

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

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 3, 4, 6–21, 23–25, 27, 28	102(b) ²¹	Iida		
2 ²²	103(a) ²³	Iida, Genske		
5	103(a) ²⁴	Iida, Imbrie		
10, 17	103(a) ²⁵	Iida, Aganovic		
1–4, 6–21, 23–25, 27, 28	103(a)	Iida, Genske	1–4, 6–21, 23–25, 27, 28	
5	103(a)	Iida, Genske, Imbrie	5	
10, 17	103(a)	Iida, Genske, Aganovic	10, 17	
Overall Outcome			1–21, 23–25, 27, 28	

²¹ As explained above, because we determined the challenged claims unpatentable in light of Iida and Genske, we declined to address this ground.

²² Petitioner presented two alternative grounds for asserting that claim 2 is unpatentable in light of Iida and Genske. In Ground 2, reflected in this row, Petitioner argued Iida taught all of the limitations recited in claim 1 and relied on Genske solely for the additional limitation recited in claim 2. The subsequent row refers to Ground 5, in which Petitioner relied on the combination of Iida and Genske to teach the limitations recited in claim 1.

²³ As explained above, because we determined the challenged claims unpatentable in light of Petitioner’s alternate ground based on Iida and Genske (Ground 5), we declined to address this ground.

²⁴ As explained above, because we determined the challenged claims unpatentable in light of Iida, Genske, and Imbrie, we declined to address this ground.

²⁵ As explained above, because we determined the challenged claims unpatentable in light of Iida, Genske, and Aganovic, we declined to address this ground.

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