

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO. LTD.,  
SAMSUNG ELECTRONICS AMERICA, INC. and APPLE, INC.,  
Petitioner,

v.

NEONODE SMARTPHONE LLC,  
Patent Owner.

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IPR2021-00145  
Patent 8,812,993 B2

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Before MICHELLE N. ANKENBRAND, KARA L. SZPONDOWSKI, and  
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

Petitioners Samsung Electronics Co. Ltd., Samsung Electronics America, Inc., and Apple Inc. (collectively, “Petitioner”)<sup>1</sup> filed a Petition (Paper 6, “Pet.”) under 35 U.S.C. §§ 311–319 requesting *inter partes* review of claims 1–8 of U.S. Patent No. 8,812,993 B2 (Ex. 1001, “the ’993 patent”). Patent Owner Neonode Smartphone LLC (“Neonode”)<sup>2</sup> filed a Preliminary Response (Paper 23, “Prelim. Resp.”).

Under the authority delegated to us by the Director under 37 C.F.R. § 42.4(a), we may institute an *inter partes* review when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018); *see also* 37 C.F.R. § 42.108(c) (2019). Applying that standard, we institute an *inter partes* review of all the challenged claims of the ’993 patent for the reasons explained below. This is a preliminary decision, and we will base our final written decision on the full trial record, including any timely response by Neonode.

## II. BACKGROUND

### A. RELATED PROCEEDINGS

The parties identify the following as related matters: *Neonode Smartphone LLC v. Apple Inc.*, No. 6:20-cv-00505 (W.D. Tex. filed June 8,

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<sup>1</sup> According to the Petition, the named Petitioners are the real parties in interest. Pet. 93.

<sup>2</sup> Neonode identifies itself as the real party in interest. Paper 7, 2.

2020); and *Neonode Smartphone LLC v. Samsung Electronics Co. Ltd.*, No. 6:20-cv-00507 (W.D. Tex. filed June 8, 2020). Pet. 93–94; Paper 7, 2.

B. THE '993 PATENT (EX. 1001)

The '993 patent relates to a user interface on a device that has a touch-sensitive display screen. *See* Ex. 1001, 1:14–17, code (57). Figure 1 of the '993 patent, reproduced below, illustrates such a user interface:

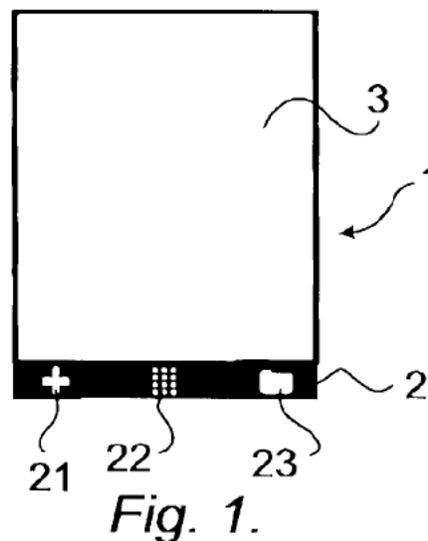


Figure 1 depicts a touch-sensitive area (1) on a mobile handheld device. Ex. 1001, 3:30–31, 3:57–60. It is divided into a menu area (2) and a display area (3). *Id.* at 3:60–61. Menu area 2 is a narrow strip along the lower part of touch-sensitive area 1 that contains predefined functions 21 (a general application-dependent function), 22 (a keyboard), and 23 (a task and file manager). *Id.* at 4:9–14.

Figure 2, reproduced below, shows how to activate the functions in menu area 2:

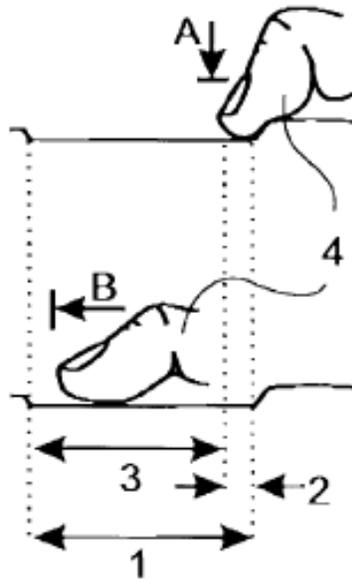


Fig. 2.

Figure 2 of the '993 patent illustrates a touch gesture by which a user may activate functions 21, 22, or 23 in area 2. *See* Ex. 1001, 4:15–19. This gesture begins when object 4 (in this case a finger) touches the display at point A within representation 21, 22, or 23, and moves in direction B away from menu area 2 into display area 3. *Id.*

Figure 3, reproduced below, illustrates the touch screen after function 21 has been activated:

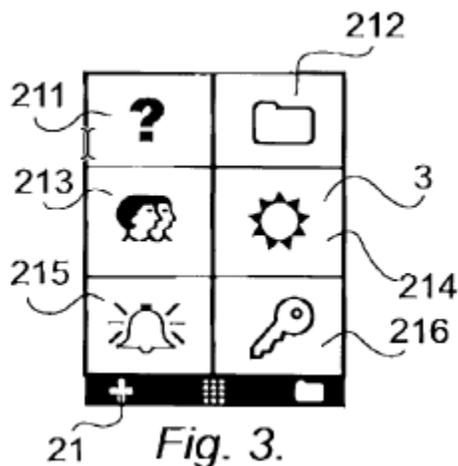


Fig. 3.

Ex. 1001, 3:33. Figure 3 shows that after a user activates function 21 with the gesture as illustrated in Figure 2, display area 3 displays icons 211–216, which each represent services or functions depending on the currently active application. *Id.* at 4:20–23. If there is no currently active application, the icons may represent services or settings of the operating system, such as background picture, clock alarm 215, users 213, and help 211. *Id.* at 4:36–40. Analogously, selecting function 22 activates a keyboard, and selecting function 23 activates a library of available applications and files on the device. *Id.* at 4:43–45, 5:3–5, Figs. 5–6.

Figure 4, reproduced below, illustrates how a user selects one of icons 211–216 in Figure 3:

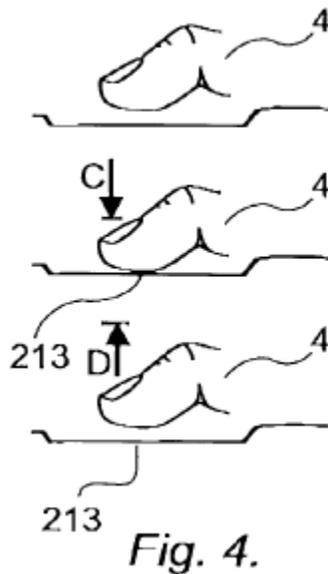


Figure 4 is a schematic illustration showing object 4 (a finger) selecting function 213 by “tapping C, D on corresponding icon 213.” Ex. 1001, 4:41–42.

C. CHALLENGED CLAIMS AND GROUNDS

Sole independent claim 1, which exemplifies the other challenged claims, is as follows:

- [1.pre] 1. A non-transitory computer readable medium storing instructions, which, when executed by a processor of an electronic device having a touch-sensitive display screen, cause the processor to enable a user interface of the device,
- [1.a] the user interface comprising at least two states, namely,
- [1.b] (a) a tap-present state, wherein a plurality of tap-activatable icons for a respective plurality of pre-designated system functions are present, each system function being activated in response to a tap on its respective icon, and
- [1.c] (b) a tap-absent state, wherein tap-activatable icons are absent but an otherwise-activatable graphic is present in a strip along at least one edge of the display screen for transitioning the user interface from the tap-absent state to the tap-present state in response to a multi-step user gesture comprising
- [1.d] (i) an object touching the display screen within the strip, and  
(ii) the object gliding on the display screen away from and out of the strip.

Ex. 1001, 6:50–65 (formatting and reference letters added). Claims 2–8, which Petitioner also challenges, depend directly from claim 1. *See id.* at 6:66–7:21.

Petitioner argues eight grounds (1A–D and 2A–D) for *inter partes* review, as summarized in the following table:

| Ground | Claim(s)<br>Challenged | 35 U.S.C. §         | References                                   |
|--------|------------------------|---------------------|--|
| 1A     | 1–3, 7, 8              | 103(a) <sup>3</sup> | Hisatomi, <sup>4</sup> Ren <sup>5</sup>      |
| 1B     | 4                      | 103(a)              | Hisatomi, Ren, Allard-656 <sup>6</sup>       |
| 1C     | 5                      | 103(a)              | Hisatomi, Ren, Tanaka <sup>7</sup>           |
| 1D     | 6                      | 103(a)              | Hisatomi, Ren, Kodama <sup>8</sup>           |
| 2A     | 1–3, 7, 8              | 103(a)              | Hansen, <sup>9</sup> Gillespie <sup>10</sup> |
| 2B     | 4                      | 103(a)              | Hansen, Gillespie, Allard-656                |
| 2C     | 5                      | 103(a)              | Hansen, Gillespie, Tanaka                    |
| 2D     | 6                      | 103(a)              | Hansen, Gillespie, Kodama                    |

Pet. 1–2.

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<sup>3</sup> 35 U.S.C. § 103(a) (2006), *amended by Leahy–Smith America Invents Act*, Pub. L. No. 112-29 § 103, sec. (n)(1), 125 Stat. 284, 287, 293 (2011) (effective Mar. 16, 2013). The '993 patent issued from an application filed on December 4, 2011, which is before the effective date of this amendment to section 103. *See* Ex. 1001, code (22).

<sup>4</sup> Hisatomi et al., JP 2002-55750A, published Feb. 20, 2002 (Ex. 1005, including certified translation).

<sup>5</sup> Xiangshi Ren & Shinji Moriya, Rodkin, *Improving Selection Performance on Pen-Based Systems: A Study of Pen-Based Interaction for Selection Tasks*, 7 ACM Transactions on Computer-Human Interaction, Sept. 2000, at 384 (Ex. 1006).

<sup>6</sup> Allard et al., US 5,422,656, issued June 6, 1995 (Ex. 1007).

<sup>7</sup> Tanaka, US 5,249,296, issued Sept. 28, 1993 (Ex. 1008).

<sup>8</sup> Kodama et al., US 6,710,791 B1, filed Jan. 31, 1997, issued Mar. 23, 2004 (Ex. 1016).

<sup>9</sup> Hansen, US 5,821,930, issued Oct. 13, 1998 (Ex. 1029).

<sup>10</sup> Gillespie et al., US 2005/0024341 A1, filed Apr. 17, 2002, based on a provisional application filed May 16, 2001, published Feb. 3, 2005 (Ex. 1030).

In its Petition, Petitioner relies on the declaration of Dr. Benjamin B. Bederson. Ex. 1002. And for its Preliminary Response, Neonode relies on the declaration of Dr. Craig Rosenberg. Ex. 2001. At this preliminary stage, the parties do not challenge the declarants' qualifications to offer testimony as expert witnesses.

### III. DISCRETION TO DENY INSTITUTION

Before considering the merits of the Petition, we consider two threshold issues: Neonode argues that we should deny institution under the discretion afforded by either 35 U.S.C. §§ 314(a) or 325(d). For the reasons below, we decline to deny institution on either basis.

#### A. DENIAL OF INSTITUTION UNDER § 314(a)

The Director has discretion to deny institution under 35 U.S.C. § 314(a). *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018). The Board exercises that discretion on behalf of the Director. *See* 37 C.F.R. § 42.4(a). In determining whether to exercise that discretion, we are guided by the Board's precedential decision in *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential).

Citing *NHK Spring*, Neonode contends that the Board "should exercise its discretion to deny institution when institution would not be consistent with the objective of the AIA to 'provide an effective and efficient alternative to district court litigation.'" Prelim. Resp. 48 (quoting *NHK Spring*, Paper 8 at 20). According to Neonode, this condition exists here because Hisatomi, a foreign reference asserted under 35 U.S.C. § 102(a) (*see* Pet. 2), was published within a year of the '993 patent's earliest priority date, and Neonode believes it can antedate Hisatomi by showing conception

and reduction to practice before Hisatomi's publication date. Prelim. Resp. 55. Likewise, Neonode argues that it can antedate Gillespie, which Petitioner asserts under § 102(e). *See id.*; Pet. 2–3.

But according to Neonode, the Hague Convention procedures needed to obtain discovery on these issues from key witnesses in Sweden are sufficiently time-consuming that it would hamper Neonode's ability to defend its patent within the compressed time frame of an *inter partes* review. *See* Prelim. Resp. 53–56 (citing Ex. 2010 (declaration by Jakob Falkman, a lawyer practicing in Sweden)). Thus, Neonode contends that “deferring to the district court would allow discovery on this issue to be completed in a manner that accommodates the requirements of Swedish law, and would enable the priority issue to be fully and fairly litigated.” *Id.* at 56.

For the reasons below, we do not find Neonode's arguments persuasive, and we decline to deny institution on this basis.

### 1. *Background*

For Grounds 1A–D, Petitioner asserts that Hisatomi is prior art under § 102(a). Pet. 2. Hisatomi has a publication date of February 20, 2002. Ex. 1005, code (43). For Grounds 2A–D, Petitioner asserts that Gillespie is prior art under § 102(e) and is entitled to a priority date of May 16, 2001. Pet. 3 n.2 (citing *Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1373 (Fed. Cir. 2015)); Ex. 1030, code (60) (claiming priority to a provisional application filed May 16, 2001<sup>11</sup>).

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<sup>11</sup> Petitioner has not, at this stage, provided evidence that Gillespie is entitled to the priority date of its provisional application.

The '993 patent claims priority to a parent application filed on December 10, 2002. Ex. 1001, code (63); Prelim. Resp. 48. But Neonode argues that, in now-terminated litigation in the Southern District of Florida, its representatives testified “that reduction to practice and conception occurred much earlier.” Prelim. Resp. 48 (citing Ex. 2005 (Fed. R. Civ. P. 30(b)(6) testimony by designees Joseph Shain and Thomas Eriksson)). According to Neonode, this testimony indicates that “Neonode began working on the first commercial embodiment of the invention claimed in the '993 Patent, the N1 Phone, in 2001.” *Id.* (citing Ex. 2005, 8:18–21). Neonode states that “[t]hose primarily involved were Thomas Eriksson and inventor Magnus Goertz.” *Id.* (citing Ex. 2005, 8:20–22).

In particular, Neonode contends that Goertz and Eriksson, who are respectively the founder and co-founder of Neonode, attended the March 2002 CeBIT conference in Germany where they demonstrated a prototype of the N1 Phone and handed out literature describing the device. Prelim. Resp. 48–49 (citing Ex. 2005, 10:3–6, 12:22–13:1, 14:6–15:9, 16:18–24).

Neonode also submits a Quick Start Guide for the N1 Phone, which describes the device’s operating system in a manner that Neonode contends embodies the claims of the '993 patent. Ex. 2012; Ex. 2011 (declaration of counsel Philip Graves, testifying that he obtained the Quick Start Guide (Ex. 2012) from a box containing the Neonode N1 phone). Although the Quick Start Guide does not appear to be dated and there is no evidence of record that it was prepared in the 2001–2002 time frame, Neonode argues that “[i]t is reasonable to infer that the N1 phone demonstrated in March 2002 functioned in the same way” as described in the Quick Start Guide. Prelim. Resp. 51.

Neonode argues that in order to obtain and produce evidence to this effect antedating Hisatomi and Gillespie, “Neonode will need testimony from the inventor, Mr. Goertz, as well as corroborating evidence in the form of documents or, possibly, testimony of a third party witness such as Mr. Eriksson.” Prelim. Resp. 51. But according to Neonode, Messrs. Goertz and Eriksson are residents of Sweden and neither of them is subject to the jurisdiction of the United States. *Id.* at 51–52 (citing Ex. 2007, Ex. A).

The parties have broached this discovery issue in the related co-pending litigations in the Western District of Texas, and the court issued Letters of Request to obtain discovery from Messrs. Goertz and Eriksson on March 9 and April 20, 2021. Prelim. Resp. 52–53 (citing Ex. 2009); *see also* Ex. 3002 (Letter of Request in *Neonode Smartphone LLC v. Samsung Electronics Co. Ltd.*, No. 6:20-cv-00507 (W.D. Tex. April 20, 2021)).

Neonode also submits testimony from Jacob Falkman, an attorney practicing in Sweden, stating that as a practical result of the Hague Convention discovery process, “it may take more than six months, excluding any time expended obtaining the issuance of a Letter of Request from a U.S. court or other authority, to obtain discovery of broad categories of documents from a witness in Sweden.” Ex. 2010 ¶ 18; *see also* Prelim. Resp. 53–55. Thus, Neonode argues that “it is highly unlikely that the discovery from Mr. Goertz and Mr. Eriksson will be available to Neonode to prove the ’933 Patent’s true priority date in time for its response to the Petition.” Prelim. Resp. 55.

## 2. Discussion

Having considered Neonode’s arguments, we do not believe the circumstances of this case to warrant the discretionary denial of institution

under § 314(a). Namely, Grounds 2A–D are not implicated by Neonode’s arguments for exercising discretion to deny institution under § 314(a), and, as discussed below, Petitioner has demonstrated a reasonable likelihood it will prevail as to these grounds. *See infra* part IV.D. Accordingly, we do not find the particular facts and evidence to weigh in favor of exercising discretion to deny institution of *inter partes* review.

Furthermore, it is still speculative as to whether the corroborative evidence will be sufficient to antedate Hisatomi and Gillespie, as it has yet to be identified. *See* Prelim. Resp. 51 (“Neonode will need testimony from the inventor, Mr. Goertz, *as well as corroborating evidence in the form of documents or, possibly, testimony of a third party witness such as Mr. Eriksson.*” (emphasis added)). Accordingly, it is speculative as to whether Neonode will pursue this argument during the course of trial.

If Neonode does present arguments and evidence to this extent, the burden of persuasion is on Petitioner to show unpatentability by a preponderance of the evidence, and that burden never shifts to Neonode. *See Dynamic Drinkware*, 800 F.3d at 1378 (citing 35 U.S.C. § 316(e)). For its Patent Owner Response, Neonode only has the burden of production, or the burden of coming forward with evidence that Hisatomi or Gillespie, or both, are “not prior art because the asserted claims in the [’993] patent are entitled to the benefit of a filing date (constructive or otherwise) prior to” the publication date of Hisatomi or the priority date of Gillespie. *Id.* at 1380.

To meet its initial burden of production, Neonode would not necessarily need the broad discovery the parties are seeking in district court under the Hague Convention. Because Mr. Goertz is the founder of Neonode and the named inventor of the ’993 patent, and Mr. Eriksson is Neonode’s

co-founder who has previously testified in district court about this subject on behalf of Neonode (*see* Prelim. Resp. 48–49; Ex. 2005), we find it reasonable to expect that Neonode could obtain evidence supporting the conception and reduction to practice of its own patent within the time frame of an *inter partes* review, at least sufficiently to meet its initial burden of production. If Petitioner presents evidence in its Reply that the invention was not actually reduced to practice as Neonode argues, Neonode will also have the opportunity to present rebuttal arguments in its Sur-Reply, including the argument that Petitioner has not met its burden of persuasion. *See* 37 C.F.R. § 42.23.

To the extent that Neonode cannot obtain sufficient evidence to meet its burden of production before the due date for its Patent Owner Response, or if Neonode obtains additional evidence after filing its Patent Owner Response that it wishes to be considered at trial, we are open to resolving those issues as the circumstances warrant. We may, for example, extend due dates or authorize additional briefing. *See* 37 C.F.R. § 42.5(a)–(c).

For the foregoing reasons, we decline to exercise our discretion to deny institution of *inter partes* review under § 314(a).

**B. DENIAL OF INSTITUTION UNDER § 325(d)**

Neonode contends that we should deny institution under 35 U.S.C. § 325(d) because the Patent Office has previously addressed substantially the same prior art or arguments as those found in the Petition. Prelim. Resp. 3. For the reasons below, the preliminary evidence does not support this argument, and we decline to deny institution on this basis.

Section 325(d) provides that the Director (and thus the Board acting on the Director's behalf, *see* 37 C.F.R. § 42.4(a)) may elect not to institute a trial if the petition challenges a patent based on matters previously presented to the Office: "In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office." The Board uses a two-part framework for this determination:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office;
- and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

*Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

Relevant to this analysis are six factors outlined in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph):

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

*Becton, Dickinson*, Paper 8 at 17–18 (formatting added). “[T]he *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d).” *Advanced Bionics*, Paper 6 at 8 (footnote omitted). Factors (a), (b), and (d) pertain to the first part of the *Advanced Bionics* framework, while factors (c), (e), and (f) pertain to the second part of that framework. *Id.* at 10.

As we discuss below, the preliminary record supports Petitioner’s arguments as to at least the second part of the *Advanced Bionics* framework.

1. *Whether the Same or Substantially the Same Art or Arguments Were Presented During Prosecution*

The parties do not appear to dispute that neither Hisatomi nor Ren (asserted in Grounds 1A–D) and that both Hansen and Gillespie (asserted in Grounds 2A–D) were before the Examiner during prosecution of the ’993 patent. *See* Pet. 83; Prelim. Resp. 59. Although Gillespie was not the subject of any rejection, the Examiner listed it as one of twelve references in a Notice of References Cited filed with an Office Action on May 12, 2012. *See* Ex. 1003, 450.

The Examiner considered Hansen extensively during prosecution, in combination with references not asserted in the Petition. In an Office Action dated July 29, 2013, the Examiner rejected claim 21 (the predecessor to claim 1 of the ’993 patent) as being unpatentable over Hansen in view of Hirayama (Ex. 2004). Ex. 1003, 175–77. According to the Examiner, “Hansen fails to distinctly point out a multi-step user gesture at an

otherwise-activatable graphic,” and the Examiner relied on Hirayama for that teaching. *See id.* at 176.

In response, the applicant amended the claim to add, among other things, the requirement that the “otherwise-activatable graphic” is “in a strip along at least one edge of the display screen.” *Id.* at 148–49. The Examiner then rejected this amended claim over the combination of Hansen, Hirayama, and Brisebois (Ex. 1033). *See id.* at 90–92. According to the Examiner, “Hansen–Hirayama fails to teach a touch sensitive strip along at least one edge of the display screen,” but it would have been obvious to use such a strip in light of Brisebois. *Id.* at 92.

In response, the applicant amended claim 21 to require that the gesture be “away from and out of the strip” (Ex. 1003, 73 (revision marking omitted)), arguing that “Brisebois makes it clear that any sweeping gesture must be performed along the active edge in order to be processed” (*id.* at 78). The Examiner allowed the pending claims on that basis. *See id.* at 25–28.

Petitioner argues that the combination the Examiner considered is materially different from the Hansen–Gillespie combination, and that the Examiner used a different rationale. *See Pet.* 84–85. Neonode disagrees, arguing that “Petitioner’s arguments in support of [the] motivation to combine Gillespie with Hansen is the same as the Examiner’s argument for motivation to combine Hirayama with Hansen.” Prelim. Resp. 62.

On the one hand, the Hansen–Hirayama–Brisebois combination addresses many of the same issues that Petitioner raises about the Hansen–Gillespie combination, and the Examiner did, at least, consider Hansen and

Gillespie separately. On the other hand, the Examiner did not consider either Hisatomi or Ren, which are the basis for half the grounds of the Petition.

However, we do not need to decide whether the art or arguments are “the same or substantially the same” under the first part of the *Advanced Bionics* framework, because we determine, below, that Petitioner has sufficiently shown that the Examiner materially erred by failing to consider that Hansen alone teaches “a strip along at least one edge of the display screen.”

2. *Whether Petitioner Sufficiently Demonstrates that the Office Erred in a Manner Material to Patentability*

In the second part of the *Advanced Bionics* framework, we consider whether Petitioner has sufficiently shown that the Office erred in a manner material to the patentability of the challenged claims. Examples of such errors may include misapprehending or overlooking specific material teachings of the relevant prior art or misapplying the law in a material way. *See Advanced Bionics*, Paper 6 at 8–9 n.9. For this analysis, *Becton*, *Dickinson* factors (c), (e), and (f) are particularly relevant. *See id.* at 10.

Regarding *Becton*, *Dickinson* factor (c), Petitioner argues that the Examiner “did not specifically evaluate the prior art teachings advanced herein for at least the . . . ‘object gliding on the display screen away from and out of the strip’ limitation[.]”<sup>12</sup> and “[n]o references similar to Gillespie

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<sup>12</sup> Petitioner also argues that the Examiner did not specifically evaluate Petitioner’s arguments regarding the “otherwise-activatable graphic” limitation. Pet. 86. In response, Neonode contends that the Examiner relied on Hirayama for this limitation in a manner cumulative to Petitioner’s reliance on Gillespie. Prelim. Resp. 64. We do not need to address this issue

were applied by the Examiner or discussed by Patent Owner, much less included in a combination similar to the Hansen–Gillespie [combination] set forth herein.” Pet. 86. Regarding *Becton, Dickinson* factors (e) and (f), Petitioner also argues that the Examiner unnecessarily relied on Brisebois for teaching “a strip along at least one edge of the display screen,” rather than finding that limitation within Hansen alone. *See* Pet. 86–87 (citing Ex. 1003, 92; Ex. 1033 ¶ 38).

In response, Neonode argues that “like Petitioners, the Examiner also relied on Hansen for this limitation in two office actions.” Prelim. Resp. 64 (citing Ex. 1003, 90–91, 175–76). Alternatively, if the Examiner relied on Brisebois rather than Hansen to teach the “strip,” Neonode contends that this is “a textbook example of error that is not material to patentability,” because “this alleged error did not cause [the Examiner] to allow the claim.” *Id.* at 66–67.

We disagree. The prosecution history suggests that the Examiner relied on Brisebois—not Hansen or Hirayama—for disclosing the “strip along at least one edge of the display screen.” *See* Ex. 1003, 92 (“Hansen–Hirayama fails to teach a touch sensitive strip along at least one edge of the display screen.”). And when the applicant amended the claim to require that the gesture be “away from and out of the strip,” the Examiner failed to reconsider Hansen’s teaching as to the direction of the gesture in relation to the strip, likely because the Examiner had already decided that Hansen did not disclose the recited strip.

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because Petitioner has sufficiently shown that the Examiner materially erred with respect to the “away from and out of the strip” limitation.

As we discuss below, we determine that Petitioner has made a sufficient showing on the preliminary record that Hansen, at least in light of Gillespie, teaches a “strip along at least one edge of the display screen,” as recited in claim 1. Because the prosecution history suggests that the Examiner found to the contrary and failed to reconsider Hansen’s teachings in that regard after the applicant’s final amendment, we determine that the Examiner erred in a manner material to the patentability of the challenged claims.

Accordingly, we decline to deny institution under § 325(d).

#### IV. GROUNDS OF THE PETITION

For the reasons below, we determine there is a reasonable likelihood that Petitioner would prevail in showing that at least one of claims 1–8 is unpatentable under the grounds raised in the Petition. Before addressing those grounds in detail, we first address the level of ordinary skill in the art, and whether we need to construe any claim terms explicitly for our analysis.

##### A. LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the pertinent art at the time of the invention is one of the factual considerations relevant to obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). It is also relevant to how we interpret the patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). To assess the level of ordinary skill, we construct a hypothetical “person of ordinary skill in the art,” from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct “presumes that all prior art references in the field of the invention are

available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

For Petitioner, Dr. Bederson testifies that a person of ordinary skill “would have had at least a bachelor’s degree in computer science, computer engineering, or the equivalent education and at least two years of experience in user-interface design and development. Additional years of experience could substitute for formal education, and vice versa.” Ex. 1002 ¶ 51; Pet. 17 n.3 (citing this definition). Dr. Rosenberg, for Neonode’s Preliminary Response, states that he “will apply the same definition.” Ex. 2001 ¶ 34.

Because Dr. Bederson’s articulation of the level of ordinary skill in the art appears reasonable in light of the subject matter of the ’993 patent and Neonode does not contest it at this stage, we adopt it for this decision.

#### B. CLAIM CONSTRUCTION

In an *inter partes* review, we construe a patent claim “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) (2019). This generally includes “construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313, 1321. To make this determination, “we look principally to the intrinsic evidence of record, examining the claim language itself, the written

description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006).

Petitioner does not propose any explicit claim constructions in the Petition. *See* Pet. 8.

In its Preliminary Response, Neonode proposes that we construe the term *tap-activatable* to mean “activatable upon completion of a gesture consisting of a downward touch on the display followed quickly and directly by an upward lift off of the display.” Prelim. Resp. 8. In support of this construction, Neonode points to Figure 4 of the ’993 patent (reproduced above, *see supra* part II.B) and the associated statement in the Specification that this figure “shows that selection of a preferred service or setting is done by tapping C, D on a corresponding icon 213.” *Id.* at 7 (quoting Ex. 1001, 4:41–42).

Neonode also relies on Dr. Rosenberg’s testimony that a person of ordinary skill in the art would have understood a “tap” (also known as “mouse up”) to be a gesture that involves (1) touching the screen and then (2) lifting off the screen, which was different from a touch activation “in which processing associated with a program or service is activated upon detecting the coordinates of the initial touch in a predetermined location on a touch sensitive screen.” Prelim. Resp. 7–8 (citing Ex. 2001 ¶ 50).

Although Petitioner does not specifically propose a construction for *tap-activatable*, it does not appear that Petitioner contests the general idea that a “tap” involves both touching a screen and then lifting off the screen as depicted in Figure 4 of the ’993 patent. *See* Pet. 36–37 (citing Ex. 1001, 4:41–42; Ex. 1002 ¶¶ 132–135; Ex. 1006, 403).

Thus, for our decision, we will interpret *tap-activatable* as being activatable by a gesture that involves touching a screen and then lifting off the screen. As we discuss below, we determine that Petitioner has sufficiently shown that the asserted prior art combinations include tap-activatable icons according to this construction, and the other aspects of Neonode’s proposed construction (such as whether the upward lift off the display happens “quickly and directly”) do not appear to be material to that determination. *See infra* parts IV.C.5 and IV.D.5. Thus, it is not necessary at this stage for us to construe the term any further to resolve the parties’ dispute. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). If it is necessary to construe the term further at trial, we will take into consideration the full trial record, including any timely arguments by Petitioner.

C. OBVIOUSNESS GROUNDS BASED ON HISATOMI AND REN  
(GROUNDS 1A–D)

Turning to the grounds of the Petition, we first address Grounds 1A–D, which assert that claims 1–8 are unpatentable under § 103(a) as obvious over the combination of Hisatomi and Ren, and in further combination with Allard-656, Tanaka, or Kodama for claims 4, 5, and 6, respectively. Pet. 1, 27–63.

A claim is unpatentable under § 103(a) for obviousness if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). And when a ground in a petition is based on a combination of references, we consider “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Our obviousness inquiry focuses on factual considerations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) any objective indicia of obviousness or non-obviousness that may be in evidence. *See Graham*, 383 U.S. at 17–18.

Considering these factors,<sup>13</sup> we find Petitioner’s arguments sufficiently persuasive, at this stage, to show a reasonable likelihood of prevailing at trial on at least one of the challenged claims. We begin our analysis with a brief overview of Hisatomi and Ren, and then we address the parties’ contentions as to claim 1 with respect to the combination of these two references, followed by Petitioner’s uncontested arguments regarding the dependent claims.

### 1. Overview of Hisatomi

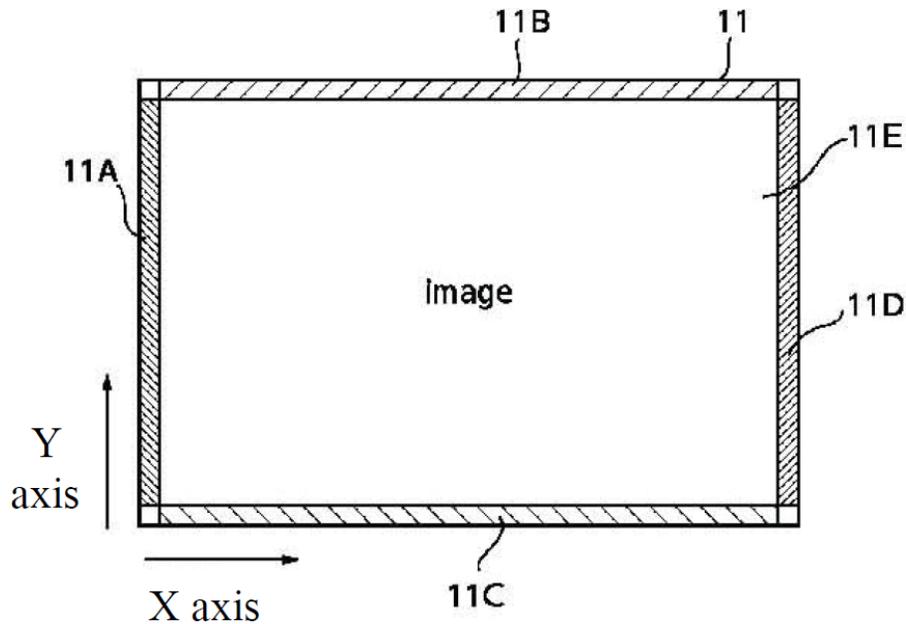
Hisatomi describes a notebook-size portable information device with a display screen, which receives coordinate information from a pen-type input device. Ex. 1005 ¶ 12. The inventors intended the device to solve the

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<sup>13</sup> On the preliminary record, neither party submits evidence of objective indicia of obviousness or non-obviousness. However, Neonode has indicated that it may be able to obtain evidence, during the trial stage, relating to commercial success and industry praise. *See Prelim. Resp.* 51–53.

problem of “simultaneously display[ing] a menu and a main image in a small image display [device] without hindering any editing work.” *Id.*, code (57).

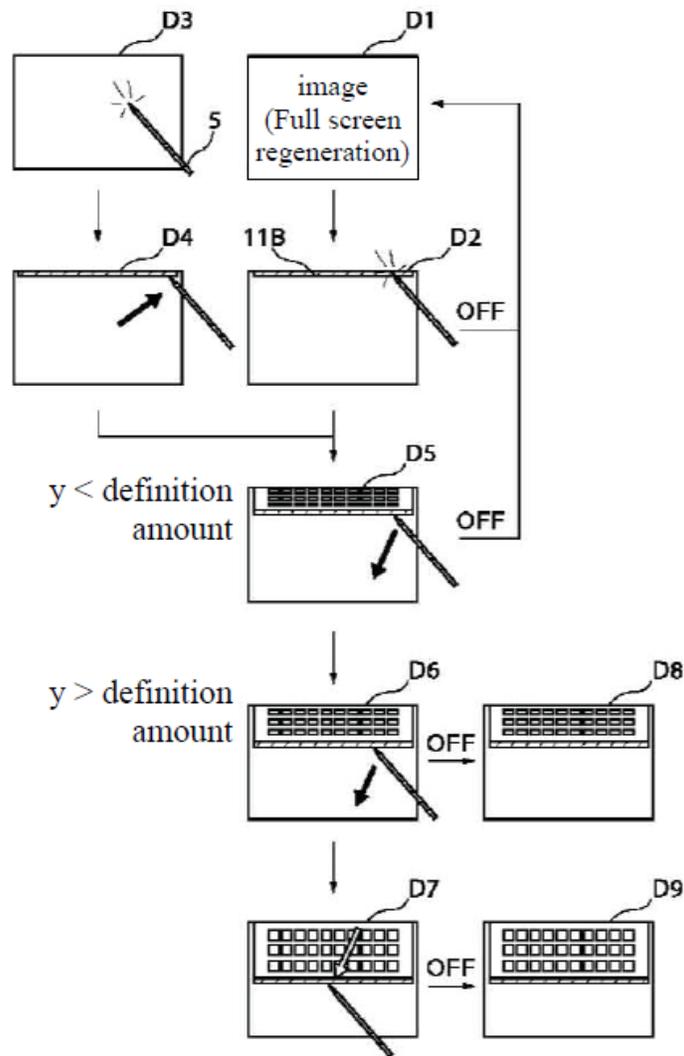
Figure 5, reproduced below, illustrates a touch panel display embodying the invention:



*See* Ex. 1005 ¶ 17. As shown above, touch panel display 11 includes an image display area (11E), as well as menu display trigger areas 11A–D, which are strips along the edges of the display. *Id.* ¶ 18. When a pen-type input device moves from one of strips 11A–D toward the center of the display, the device shows a pull-out menu. *See id.*

Figure 12 of Hisatomi, reproduced below, is an example of the pen-based gesture used to pull out a character-input panel:

[FIG. 12]



Ex. 1005 ¶ 22 (noting that menu 11B performs a “character input function that adds characters to the image”). Figure 12, above, shows a series of screens D1–D9 showing various states in the process of pulling down a keyboard panel. Screen D1 depicts the device in its initial state showing only the full screen image (such as a photograph) without showing the trigger areas along the edges of the screen. *See id.* ¶ 40. Screen D3 illustrates that when pen 5 touches the screen in an area outside trigger areas 11A–D, the pull-out menus are not triggered. Trigger areas 11A–D also remain inactive

if the pen first touches the screen in an area outside the pull-out strip areas and thereafter slides into a trigger area while touching the screen (screen D4), or if the pen touches and lifts off the display while inside one of trigger areas 11A–D (screen D2). *See id.* ¶ 41.

Screens D5–D9 show pen 5 pulling down the character-input menu by moving toward the center of the screen by a distance  $y$  without lifting off the display. *Id.* ¶ 44. If the user releases pen 5 before moving a threshold distance (“definition amount”), then the pull-out process is cancelled (screen D5); otherwise, the panel remains open and can be used in its partially (screens D6 and D8) or fully (screens D7 and D9) open state. *Id.* ¶ 48.

## 2. *Overview of Ren*

Ren is a journal publication comparing different pen-based selection strategies for use on small, touch-sensitive screens. Ex. 1006, 384–85. One of these strategies is called *Direct Off*, in which “the target is highlighted only while the pen is touching it,” and “[t]he selection is made at the moment the pen is taken off the target.” *Id.* at 390. Ren also describes the *Direct On* strategy, in which “the pen approaches from above,” and “[t]he target is selected only momentarily at the time the pen makes contact with the screen in the target area.” *Id.* at 389.

## 3. *Claim 1 Preamble*

The preamble of claim 1 recites “[a] non-transitory computer readable medium storing instructions, which, when executed by a processor of an electronic device having a touch-sensitive display screen, cause the processor to enable a user interface of the device.” Ex. 1001, 6:50–53.

Petitioner argues that Hisatomi discloses the preamble because it describes

an electronic device with a touch-sensitive screen, a processor, and memory storing instructions for operating the device. *See* Pet. 27–30.<sup>14</sup>

For Ground 1A, Neonode does not contest Petitioner’s arguments regarding the preamble, and we find them sufficiently persuasive at this stage. Because Petitioner’s arguments for the preamble are uncontested for this ground, we do not need to address at this stage whether the preamble of claim 1 is limiting.

4. *Limitation 1.a: “the user interface comprising at least two states”*

Limitation 1.a recites “the user interface comprising at least two states.” Ex. 1001, 6:53–54. Petitioner’s arguments for this limitation, and Neonode’s response, hinge on whether Hisatomi discloses both a “tap-present” and “tap-absent” state as discussed below in relation to limitations 1.b and 1.c. *See* Pet. 30–32; Prelim. Resp. 23. We address the parties’ arguments below in the context of limitations 1.b and 1.c.

5. *Limitation 1.b: “a tap-present state . . .”*

Limitation 1.b recites “(a) a tap-present state, wherein a plurality of tap-activatable icons for a respective plurality of pre-designated system functions are present, each system function being activated in response to a tap on its respective icon.” Ex. 1001, 6:54–58.

Petitioner argues that in Hisatomi, after the user has used the pen to expand one of pull-out menus 11A–D, the device is in a tap-activatable state, which makes icons available for functions “such as a search function,

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<sup>14</sup> Petitioner does not affirmatively argue that the preamble of claim 1 is limiting. *See* Pet. 63.

character input, image processing and editing functions, and save functions, respectively.” Pet. 32–33 (citing Ex. 1005<sup>15</sup> ¶ 22, Fig. 9; Ex. 1002 ¶ 127).

Petitioner argues that these are “system functions” because they are analogous to functions described in the ’993 patent, which include “services such as ‘save to disk,’ ‘send as SMS,’ or ‘delete’ and . . . settings such as ‘resolution,’ ‘colour,’ or ‘brightness.’” Pet. 33 (quoting Ex. 1001, 4:31–35; Ex. 1002 ¶ 128).

Petitioner contends that “[i]t would have at least been obvious to a [person of ordinary skill in the art] that each icon is capable of selection (activation) by a user touching or tapping the icon with the pen device.” Pet. 34 (citing Ex. 1002 ¶ 130). In support of this, Petitioner points to passages in Hisatomi stating that one of the icons in the pull-out menu is “selected,” or “touched.” Pet. 34–36 (citing Ex. 1005 ¶¶ 3, 15, 55, 126, 131, 189, Figs. 13, 15, 27–31, 49, 50; Ex. 1002 ¶ 131). Petitioner also relies on the “general knowledge of well-known selection techniques in the prior art.” Pet. 36.

Alternatively, Petitioner relies on Ren for this teaching. According to Petitioner, “tapping” refers to Ren’s *Direct Off* operation, which “was a well-known technique for selecting a target in a GUI, like that disclosed by Hisatomi, and was one of the most common in 2002 as well as today.” Pet. 36 (citing Ex. 1001, 4:41–42 (“FIG. 4 shows that selection of a preferred service or setting is done by tapping C, D . . . .”); Ex. 1002 ¶ 133). Petitioner argues that “[i]t would have been obvious to a [person of ordinary

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<sup>15</sup> Here and elsewhere, some of Petitioner’s citations to Exhibit 1005 mistakenly reference Exhibit 1004. In our citations, we identify what we believe is the intended exhibit. See Prelim. Resp. 32 (pointing this out).

skill in the art] to implement the Hisatomi device such that the icons are selected using the tap technique disclosed in the '993 patent,” which was “well-known,” and “explicitly disclosed by Ren.” Pet. 37 (citing Ex. 1006, 390, 403).

Petitioner also argues that tapping “was one of a handful of well-known selection techniques for selecting a target (such as an icon or menu) in a GUI at the priority date of the '993 patent.” Pet. 37–38 (citing Ex. 1006, 390, 403). And according to Petitioner, Ren teaches its desirability, “for example, in dense displays where targets are close together,” and implementing it in Hisatomi’s device “would have been within the level of ordinary skill” and would have achieved “predictable results.” Pet. 38 (citing Ex. 1006, 403; Ex. 1002 ¶ 136).

In response, Neonode presents arguments and evidence, including testimony by Dr. Rosenberg, that Hisatomi only discloses a touch gesture, and not tapping. Prelim. Resp. 11–19 (citing Ex. 1005 ¶¶ 39, 41, 43, 47–48, 52, 54–55, 57, Figs. 10–13, 15; Ex. 2001 ¶ 49–53, 55). Neonode also argues that Dr. Bederson fails to unambiguously distinguish between touch and tap operations in his analysis of Hisatomi. *Id.* at 19–23 (citing Ex. 1002 ¶ 130; Ex. 1005 ¶¶ 15, 30, 55, 126, 131, 189, Figs. 13, 15, 30, 49, 50; Ex. 2001 ¶¶ 55, 59).

We find Neonode’s preliminary arguments persuasive that Hisatomi does not explicitly disclose a tapping gesture, which includes both a touch and a release for selecting icons in a pull-out menu. At best, Hisatomi appears to be silent as to the particular pen gesture used to select icons in a pull-out menu.

Neonode also argues that Petitioner has failed to show that it would have been obvious to add a “tapping” gesture to Hisatomi’s device in light of the general knowledge in the art (without reference to Ren). *See* Prelim. Resp. 24–26. According to Neonode, Dr. Bederson’s testimony in support of Petitioner’s argument “does not cite any patents or printed publications, and therefore is not a permissible basis for instituting *inter partes* review.” *Id.* at 25 (citing 35 U.S.C. § 311).<sup>16</sup>

We agree that it would not be proper for Petitioner to establish a claim limitation based solely on an art combination that does not consist of patents or printed publications. *See* 35 U.S.C. § 311(b); *Yeda Research v. Mylan Pharm. Inc.*, 906 F.3d 1031, 1041 (Fed. Cir. 2018) (“[N]on-prior art evidence of what was known ‘cannot be applied, independently, as teachings separately combinable’ with other prior art, but ‘can be relied on for their proper supporting roles’” (citation omitted)). But we are not faced with that hypothetical situation, since Petitioner cites Ren in its Grounds 1A–D, and we determine below that Petitioner has shown a reasonable likelihood of prevailing based on the Hisatomi–Ren combination.

For the Hisatomi–Ren combination, Neonode appears to acknowledge that Ren’s *Direct Off* gesture constitutes tapping as recited in claim 1. *See* Prelim. Resp. 27 (citing Ex. 2001 ¶ 69) (“[T]he *Direct Off* strategy is a tap-activation strategy as taught in the ’993 Patent.”). Neonode also appears to acknowledge that Ren teaches the desirability of using either *Direct On* or

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<sup>16</sup> As Neonode acknowledges, Dr. Bederson does cite one of his own publications (Ex. 1014), as well as a dissertation by another author (Ex. 1015). *See* Prelim. Resp. 25 (citing Ex. 1014; Ex. 1015, 29, 67, Fig. 2.11; Ex. 1002 ¶ 134). But Petitioner does not rely on these publications in its grounds argued in the Petition. *See* Pet. 1–2.

*Direct Off* in dense displays where targets are close together. *See id.* at 29–30 (citing Ex. 1006, 403). But Neonode argues that “Ren offers no reason to prefer one over the other in that context.” *Id.* at 30 (citing Ex. 2001 ¶ 71).

Further, Neonode contends that Ren teaches reasons to prefer *Direct On* over *Direct Off*, because “Ren confirmed experimentally that activation happens faster with *Direct On* because the processing begins immediately.” *Id.* (citing Ex. 2001 ¶ 72); *see also id.* (citing Ex. 1006, Figs. 5, 11 (showing shorter activation times for *Direct On* than *Direct Off*); Ex. 2001 ¶ 72). So given this advantage, Neonode argues that a person of ordinary skill in the art “would not have perceived *Direct On* as a deficiency in Hisatomi that required modification.” *Id.* at 31.

Having considered Neonode’s arguments regarding the motivation to combine Hisatomi and Ren, we do not find them persuasive at this stage, and we find Petitioner’s arguments sufficiently persuasive. The preliminary evidence does not suggest that Ren’s teaching that *Direct On* has a particular advantage in comparison to *Direct Off* would have dissuaded a person of ordinary skill in the art from using *Direct Off* in combination with Hisatomi’s device. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives [so long as] such disclosure does not criticize, discredit, or otherwise discourage the [claimed] solution . . . .”); *In re Mouttet*, 686 F.3d 1322, 1334 (Fed. Cir. 2012) (“[J]ust because better alternatives exist in the prior art does not mean that an inferior combination is inapt for obviousness purposes.”).

Finally, Neonode argues that Petitioner does not address the issue of whether Hisatomi discloses icons that represent “system functions” as

recited in claim 1. Prelim. Resp. 31–34. We disagree. As we discuss above, Petitioner argues that Hisatomi discloses that icons may activate a save function, for example. Pet. 33 (citing Ex. 1005 ¶ 22, Fig. 9; Ex. 1002 ¶ 127). Neonode appears to concede that “services such as ‘save to disk’” constitute system functions. *See* Prelim. Resp. 34 (quoting Ex. 1001, 4:31–35). Thus, we find Petitioner’s argument sufficiently persuasive at this stage.

6. *Limitations 1.c and 1.d: “a tap-absent state . . .” and the recited gesture “away from and out of the strip”*

Limitation 1.c recites “(b) a tap-absent state, wherein tap-activatable icons are absent but an otherwise-activatable graphic is present in a strip along at least one edge of the display screen for transitioning the user interface from the tap-absent state to the tap-present state in response to a multi-step user gesture.” Ex. 1001, 6:58–63. Limitation 1.d specifies that this gesture comprises “(i) an object touching the display screen within the strip, and (ii) the object gliding on the display screen away from and out of the strip.” *Id.* at 6:63–65.

Petitioner argues that the “tap-absent state” “begins with ‘a photo image or the like . . . displayed using the full screen of the image display screen,’ where ‘no icons or function lists are displayed.’” Pet. 38 (quoting Ex. 1005 ¶¶ 40, 124; Ex. 1002 ¶ 138). Petitioner relies on testimony of Dr. Bederson that this state does not include tap-activatable icons, but discloses graphics, in the form of trigger areas 11A–D, that are “otherwise-activatable” by gliding the pen from the trigger area away from the strip and toward the center of the screen. *See* Pet. 39–48 (citing Ex. 1005 ¶¶ 5, 18–27, 39–42, 45, 48, 52, 112–115, 124–126, 244, Figs. 4–6, 10–12, 16, 17, 19, 26–30; Ex. 1002 ¶¶ 137–155).

Neonode does not contest Petitioner’s arguments with regard to limitations 1.c and 1.d, and we find them sufficiently persuasive at this stage.

In sum, the evidence on the preliminary record, as a whole, suggests that a person of ordinary skill in the art would have had reason to combine Hisatomi with Ren, and that the resulting combination teaches all the limitations of claim 1. Thus, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing that claim 1 is unpatentable as obvious over the combination of Hisatomi and Ren.

7. *Dependent Claims 2, 3, 7, and 8*

Claims 2, 3, 7, and 8 depend from claim 1 and recite further limitations. Ex. 1001, 6:66–7:5, 7:15–21.

In particular, claim 2 recites “wherein any state transition elicited by a user gesture that begins at a location at which the otherwise-activatable graphic is provided, transitions to the tap-present state.” *Id.* at 6:66–7:2. Petitioner argues that Hisatomi discloses this limitation because “[t]ouching within a trigger area and then ‘dragging the input device . . . toward the center of the image display screen . . .’ causes the related function list in the pull-out menu to be displayed.” Pet. 49 (citing Ex. 1005 ¶¶ 18, 21, 39, 126). In addition, Petitioner argues that “each trigger area and its corresponding graphic is used for one purpose: to display the function list associated with the trigger area.” *Id.* (citing Ex. 1005 ¶¶ 18, 20, Figs. 10–12, 17, 28, 30).

Claim 3 recites “wherein the tap-present state does not display the tap-activatable icons within a window frame.” Ex. 1001, 7:3–5. Petitioner argues that Hisatomi discloses at least some embodiments of this limitation, in which the icons in a function list appear after “peeling back” the corner of

the image display, and are thus not surrounded by anything that could be construed as a window frame. Pet. 50–51 (citing Ex. 1005 ¶¶ 99, 101–103, 108, 246, Figs. 7, 28; Ex. 1002 ¶ 160).

Claim 7 recites “wherein the strip is less than a thumb’s width wide within the display screen.” Ex. 1001, 7:15–17. Petitioner argues that Hisatomi discloses that display trigger areas 11A–D are “determined by the shape of the pen tip.” Pet. 52 (quoting Ex. 1005 ¶ 18, Fig. 12). According to Petitioner, a person of ordinary skill in the art would have recognized that the “shape of the pen tip” for Hisatomi’s handheld device would have been less than a thumb’s width wide. Pet. 53 (citing Ex. 1002 ¶ 159).

Claim 8 recites “wherein the multi-step user gesture comprises (i) the object touching the otherwise-activatable graphic, and (ii) the object gliding on the display screen away from and out of the strip.” Ex. 1001, 7:18–21. Petitioner argues that Hisatomi discloses this limitation because it discloses that “the coordinates of the trigger area are identified to a user using graphics displayed using different colors or patterns.” Pet. 53 (citing Ex. 1005 ¶ 27, Fig. 5). Thus, “[a] touch within the coordinates of a trigger area strip will also be a touch on its related ‘*otherwise-activatable graphic*.’” Pet. 54 (citing Ex. 1002 ¶ 161).

In its Preliminary Response, Neonode does not contest Petitioner’s specific arguments regarding claims 2, 3, 7, or 8, and we find them sufficiently persuasive at this stage. Thus, we determine that Petitioner has shown a reasonable likelihood that it would prevail on its ground asserting that claims 1–3, 7, and 8 are unpatentable as obvious over the combination of Hisatomi and Ren.

8. *Obviousness of claims 4–6 based on Hisatomi, Ren, and Other References (Grounds 1B–D)*

For dependent claims 4, 5, and 6 (grounds 1B, 1C, and 1D, respectively), Petitioner relies on the additional teachings of Allard-656, Tanaka, and Kodama, respectively. Pet. 1. These claims depend from claim 1 and add further limitations. *See* Ex. 1001, 7:6–14.

Claim 4 recites “wherein the plurality of pre-designated system functions comprises a help function.” Ex. 1001, 7:6–8. Relying on Dr. Bederson’s testimony, Petitioner alleges that Allard-656 discloses the use of a help function in a handheld device, and that “[i]t would have been obvious to a [person of ordinary skill in the art] to configure the Hisatomi device such that one or more of the icons in the function lists corresponded to a help function, as disclosed in Allard-656,” motivated by “[t]he obvious need for user assistance and its well-known prevalence in user interfaces” at the time of the claimed invention. Pet. 55–57 (citing Ex. 1005 ¶ 223; Ex. 1009, 5:51–55, 6:12–38, Figs. 4A, 4B; Ex. 1002 ¶¶ 167–171).

Claim 5 recites “wherein the plurality of pre-designated system functions comprises a clock function.” Ex. 1001, 7:9–11. Petitioner argues that Tanaka discloses selecting and opening a “toolbox” window that includes a “world clock” function, and that it would have been obvious to a person of ordinary skill in the art “to configure the Hisatomi device to include an icon representing a clock function as disclosed in Tanaka” because “the ability to identify the current time as well as the passage of time without viewing a separate device was desirable across the variety of devices in which Hisatomi teaches its device could be implemented.”

Pet. 58–59 (citing Ex. 1005 ¶ 243; Ex. 1010, 4:13–21, Fig. 5; Ex. 1002 ¶¶ 174–175).

Claim 6 recites “wherein the plurality of pre-designated system functions comprises an alarm function.” Ex. 1001, 7:12–14. Petitioner argues that Kodama discloses a portable, touchscreen device with an alarm function, and that it would have been obvious “to include an alarm function, such as disclosed by Kodama, as one of the icons disclosed by Hisatomi” because it would have been “desirable to have an alarm that a user could set to manage the amount of time the user spends on editing function. Alarm functions were basic functions well-known to a [person of ordinary skill in the art] and could have been implemented with predictable results.” Pet. 61–63 (citing Ex. 1016, 1:8–28, 8:54–56, 9:1–4, Fig. 4; Ex. 1002 ¶¶ 179–182).

In its Preliminary Response, Neonode does not specifically address Grounds 1B, 1C, or 1D, and we find Petitioner’s arguments sufficiently persuasive at this stage. Thus, we determine that Petitioner has shown a reasonable likelihood that it would prevail as to claims 4–6 and Grounds 1B–D.

**D. OBVIOUSNESS GROUNDS BASED ON HANSEN AND GILLESPIE (GROUNDS 2A–D)**

Next, we address Grounds 2A–D of the Petition. For these grounds, Petitioner asserts that claims 1–8 are unpatentable under § 103(a) as obvious over the combination of Hansen and Gillespie, and for claims 4, 5, and 6, in further combination with Allard-656, Tanaka, or Kodama, respectively. Pet. 1–2, 63–82.

We begin our analysis with a brief overview of Hansen and Gillespie, and then we address the parties’ contentions as to claim 1 and the

combination of these two references. We then address Petitioner's uncontested arguments regarding the dependent claims.

1. *Overview of Hansen*

Hansen describes a computer system with a touch-sensitive user interface that can recognize predetermined movement by the user along part of the screen. Ex. 1029, 2:20–31. The overall system is shown in Figure 1, reproduced below:

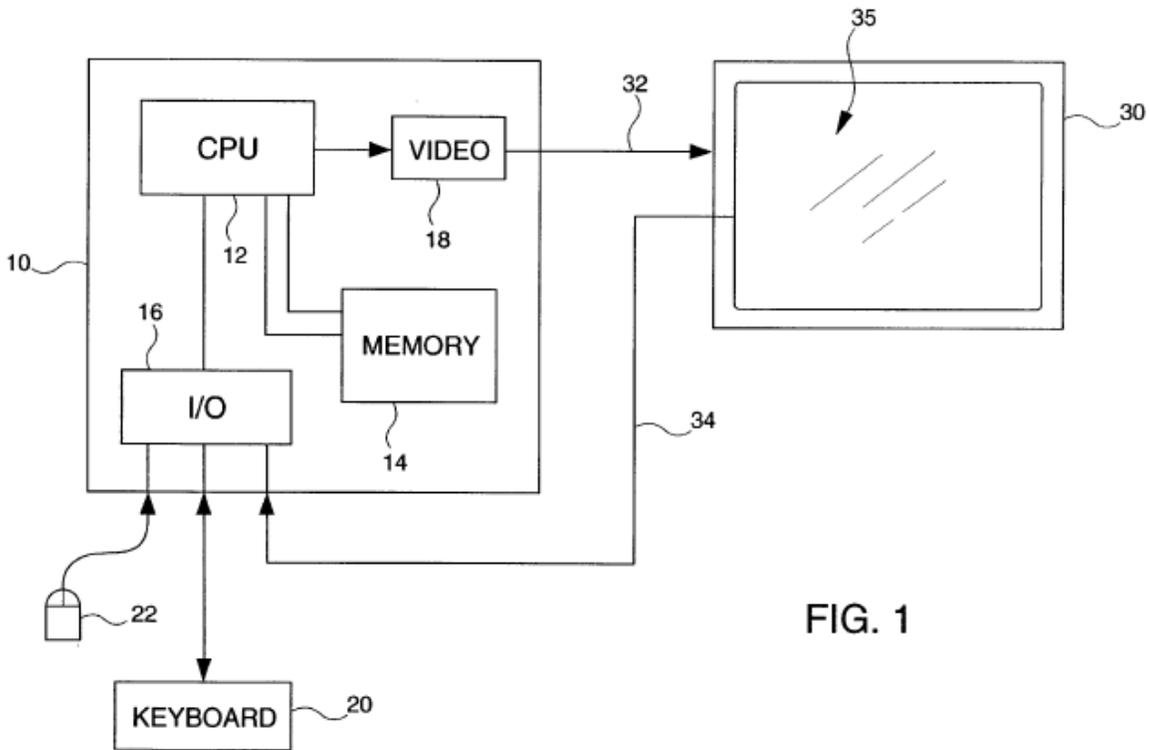


FIG. 1

The computer system in Figure 1, above, includes computer board 10 which includes central processing unit 12, memory 14, input/output port 16, and video controller 18. Ex. 1029, 3:51–54. The system also has keyboard 20 and mouse 22, as well as monitor 30 with touch-sensitive screen 35. *Id.* at 3:54–57, 4:8–33.

Figure 2, reproduced below, shows monitor 30 and touch-sensitive screen 35 in more detail:

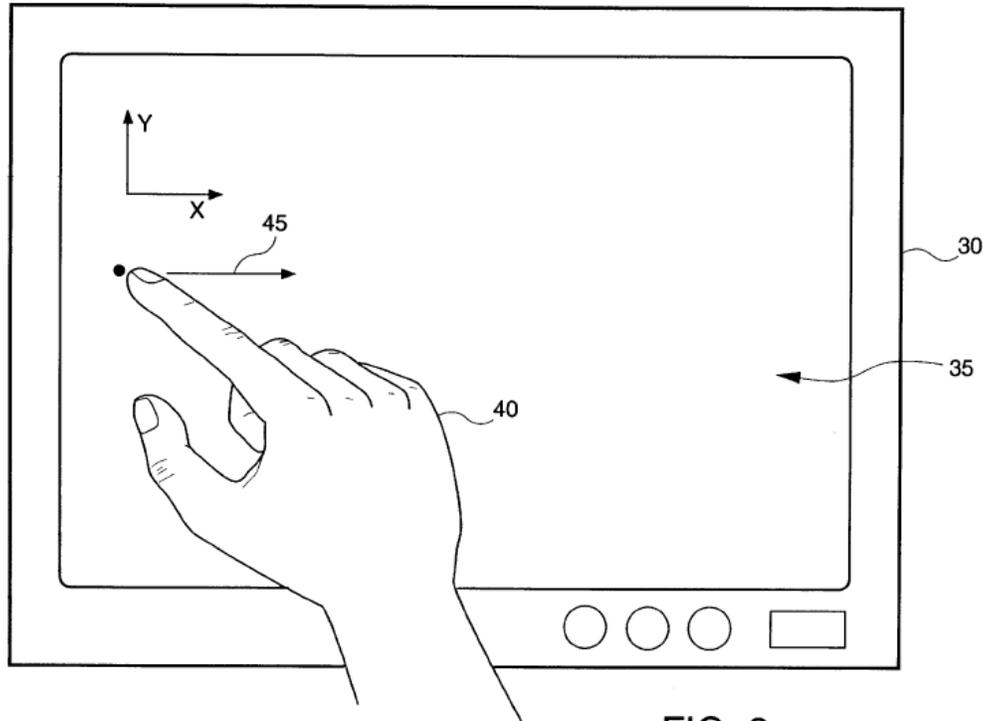
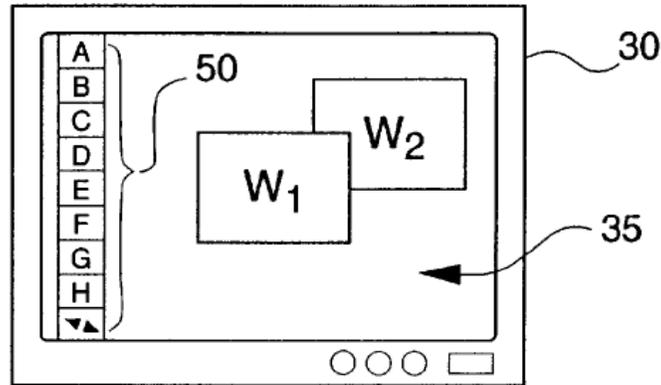


FIG. 2

Figure 2, above, “shows how a user of the computer system touches the touch-sensitive screen 35 to bring out the working window.” Ex. 1029, 4:30–32. This involves using a hand (40) to touch screen 35 within a predetermined area, such as the left-hand edge, and making an input stroke with a finger in the horizontal direction as shown by arrow 45. *Id.* at 4:34–48. In the preferred embodiment, the initial touch point (indicated by a dot in Figure 2) is “sufficiently near (e.g., within 2 cm of) the left-hand side of the touch-sensitive screen 35” and the stroke proceeds “towards the center of the screen 35.” *Id.* at 4:62–67.

Performing this input stroke brings up a menu as shown in Figure 3B, reproduced below:



**FIG. 3B**

Figure 3B illustrates a plurality of icons (50) along the left-hand side of the screen, each of which “corresponds to a computer program that can be run in the working window.” Ex. 1029, 5:14–23. Icons 50 remain on the screen until the user performs a “second predetermined user input stroke . . . defined as momentarily touching one of the plurality of icons 50 displayed on the screen 35.” *Id.* at 5:23–25, 5:33–35. Then, display 30 shows a working window associated with the selected icon. *See id.* at 5:36–50.

## 2. Overview of Gillespie

Gillespie describes a computing device with a touch screen that displays icons associated with various functions. *See* Ex. 1030, code (57). In particular, Gillespie discloses visual conventions to indicate an active region around an icon that the user can touch, as shown in Figure 5, below:

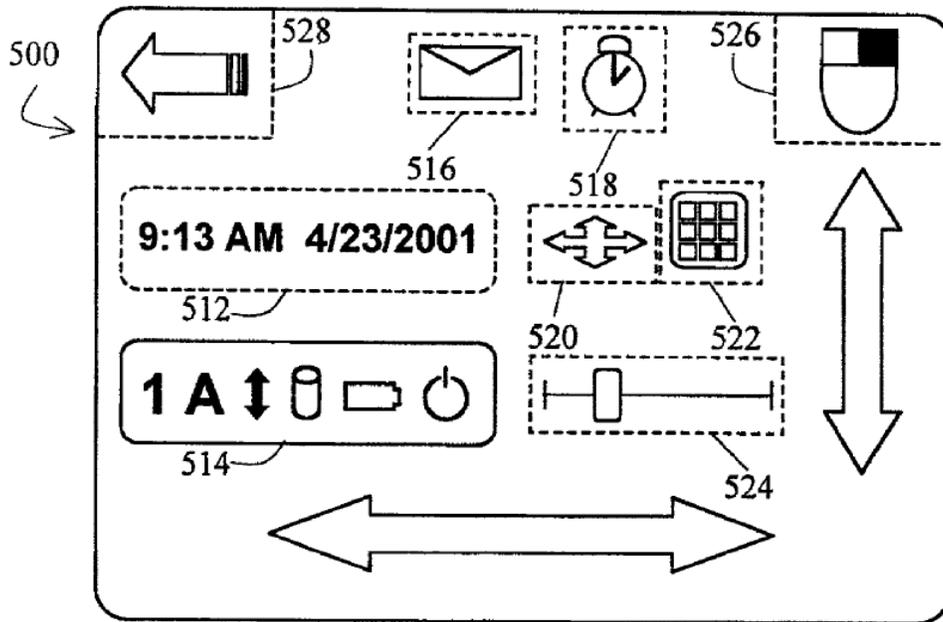


Figure 5

As shown above, Figure 5 “indicate[s] the activated state of the touch screen using a dashed line [516, 518, 520, 522, 526, and 528] around each icon that is touch-sensitive in the activated state.” Ex. 1030 ¶ 57. Dashed line 524 around a volume control “indicates that finger motions in the volume control region will adjust the setting of the control.” *Id.* Dashed outline 512 around the date and time “indicate[s] that a tap on this icon will activate a special function such as setting the time or accessing a world clock.” *Id.* By contrast, solid outlines 514 around various system status icons “indicate that, in the example of FIG. 5, these icons have no special tapping functions in the activated state.” *Id.*

According to Gillespie, “Many other visual conventions would serve equally well to indicate touch-sensitive icons, such as solid or colored lines, colored or inverted backgrounds, changes in brightness or coloration of the activated icons, changes in shape or animation of the activated icons.” *Id.*

3. *Claim 1 Preamble*

Petitioner argues that, to the extent the preamble of claim 1 is limiting, Hansen discloses it by describing a system with instructions for running a user interface, which includes a memory, a processor, and a touch-sensitive display screen. Pet. 63–64 (citing Ex. 1029, 3:49–4:25; Ex. 1002 ¶¶ 183–184).

In response, Neonode contends that “the preamble of Claim 1 is limiting because it provides antecedent basis for the ‘the user interface’ and ‘the display screen’ limitations of the claim.” Prelim. Resp. 35–36 (citing *Pacing Techs., LLC v. Garmin Intern., Inc.*, 778 F.3d 1021, 1024 (Fed. Cir. 2015)). Neonode also argues that Hansen does not disclose “a processor of an electronic device having a touch-sensitive display screen,” as recited in claim 1. *See id.* at 35–39. Rather, according to Neonode, Hansen’s “display is an external conventional video monitor coupled to the computer board’s video controller by a lead.” *Id.* at 36 (citing Ex. 1029, 4:10–13). Further, Neonode argues that Hansen describes the touch sensitive-screen as a distinct device, called a “Mac ’n Touch,” that may be attached to the monitor. *Id.* at 37–38 (citing Ex. 1029, 4:20–23; Ex. 2003 (a technical data sheet for the Mac ’n Touch)). Thus, Neonode contends that “[i]n Hansen, the CPU, video monitor, and touch-sensitive screen are three distinct electronic devices.” *Id.* at 38.

We do not find Neonode’s argument persuasive at this stage, because claim 1 does not explicitly require that the recited “electronic device” have a processor and touch-sensitive display screen within a single housing. Though they may be separate components attached together with connectors, the parts of Hansen’s computer system function in a unified and

interdependent way for implementing Hansen’s user interface. Thus, we find Petitioner’s arguments regarding the preamble of claim 1 sufficiently persuasive on the preliminary record, and we do not need to determine, at this stage, whether or to what extent the preamble of claim 1 is limiting.

4. *Limitation 1.a: “the user interface comprising at least two states”*

Petitioner contends that Hansen teaches two states comprising a “tap-present state” and a “tap-absent state.” Pet. 64. As we discuss below, we find Petitioner’s arguments sufficiently persuasive that Hansen teaches both states in light of Gillespie, and we address Neonode’s arguments in that context below.

5. *Limitation 1.b: “a tap-present state . . .”*

For the “tap-present state” recited in limitation 1.b, Petitioner argues that this state is reflected in Hansen’s Figure 3B, reproduced above. *See supra* part IV.D.1; Pet. 65. According to Petitioner, icons 50 are tap-activatable because they “can be selected by ‘momentarily touching one of the plurality of icons 50,’ *i.e.*, a tap input.” Pet. 66 (citing Ex. 1029, 5:33–36; Ex. 1002 ¶ 187).

In response, Neonode argues that icons 50 are selected by a touch, not a tap. *See* Prelim. Resp. 40–43. Neonode argues that Hansen refers only to “touching,” and that the process of selecting a particular icon involves identifying the X and Y coordinates of the touched location on the screen. *Id.* at 40–42 (citing Ex. 1029, 2:56–58, 5:26–40, 5:48–53, 7:50–65, 7:67–8:6, Fig. 4A). Thus, Neonode argues that a person of ordinary skill in the art “would have understood that Hansen discloses icon activation in Figure 3B

by touch, not tap.” *Id.* at 42 (citing Ex. 2001 ¶ 102). Citing testimony from Dr. Rosenberg, Neonode further argues that Dr. Bederson does not actually identify any mention of a “tap” within Hansen. *Id.* at 42–43 (citing Ex. 1002 ¶ 103; Ex. 2001 ¶ 103; Ex. 1001, 6:57–58; Ex. 1029, 5:35–46).

We find Petitioner’s argument that Hansen discloses “tapping” sufficiently persuasive at this stage. Although Hansen identifies the coordinates at which a user has touched the screen, this happens after the user has touched the screen “momentarily,” which appears to include lifting off the screen after a touch. *See* Ex. 1029, 5:33–35, 7:52–54. In addition, we note that, in an Amendment dated October 25, 2013, during prosecution of the ’993 patent, the applicant stated that in Hansen, “[a] tap on one of the icons . . . opens a working window for the tapped icon’s application.” Ex. 1003, 155 (citing Ex. 1029, 7:50–54, 7:66–8:5, Fig. 4A, steps 122, 124, 126). Thus, the applicant cited a passage in Hansen referring to “momentarily touching” (Ex. 1029, 7:50–54) to support its statement that Hansen discloses a “tap.”

With regard to the “system function” part of limitation 1.b, Petitioner argues that each of icons 50 in Figure 3B “‘corresponds to a computer program that can be run in [a] working window,’ and thus, the computer programs corresponding to the icons 50 represent the ‘*respective plurality of pre-designated system functions.*’” Pet. 65 (alteration in original) (quoting Ex. 1029, 5:17–36). According to Petitioner, a person of ordinary skill in the art “would have understood a computer program to be at least one type of ‘system function.’” Pet. 66 (citing Ex. 1029, 1:34–43).

Neonode argues that Hansen’s icons 50 launch applications, rather than “system functions,” as recited in claim 1. Prelim. Resp. 45–47 (citing Ex. 1029, 2:45–47; 5:17–20, 7:66–8:5, Fig. 4A; Ex. 2001 ¶¶ 113, 125).

Neither party proposes an explicit construction for the term *system function*, and the ’993 patent does not appear to use the term *system function* outside of the claims. The ’993 patent discloses that when function 23 is activated, the device displays “a list 231 with a library of available applications and files on the computer unit,” where “[a] selection of an application will start the application.” Ex. 1001, 5:3–6. This selection comprises a tapping gesture. *See id.* at 5:11–15. As depicted in Figure 6, this list includes icons adjacent to the text of each list entry. *See id.*, Fig. 6.

Thus, consistent with Hansen, the ’993 patent appears to disclose at least one embodiment in which tap-activatable icons in the tap-present state represent general applications that can be run on the device. On that basis, we find Petitioner’s arguments sufficiently persuasive on the preliminary record. At trial, the parties may wish to present arguments and evidence for construing the term *system function* as it appears in claim 1.

6. *Limitations 1.c and 1.d: “a tap-absent state . . .” and the recited gesture “away from and out of the strip”*

For limitation 1.c, Petitioner identifies the “tap-absent state” as the initial state of Hansen’s display, before the initial input stroke transitions the interface to what it contends is the “tap-present state.” *See* Pet. 66–67, 70 (citing Ex. 1029, 4:34–48, 5:6–47, 6:65–7:5, Figs. 2, 3A–C, 4; Ex. 1002 ¶¶ 188, 196). In particular, Petitioner argues that Hansen discloses the recited “strip” along at least one edge of the display screen. Pet. 69–70

(citing Ex. 1029, 4:34–37, 4:65–67, Fig. 2; Ex. 1003, 76–80, 153–159; Ex. 1002 ¶¶ 194–195).

Petitioner acknowledges that “Hansen’s figures do not show any visible indicator representing an ‘*otherwise-activatable graphic*’” at the location of the strip. Pet. 67 (citing Ex. 1029, 4:34–48; Ex. 1002 ¶ 191). However, Petitioner argues that a person of ordinary skill in the art would have been motivated to make the activatable strip visible, in light of the teachings of Gillespie. Pet. 68–69 (citing Ex. 1002 ¶¶ 192–193). According to Petitioner, a person of ordinary skill in the art “would have understood that less-experienced users may not know how to initiate the input stroke disclosed in Hansen without any visible indicators.” Pet. 25 (citing Ex. 1002 ¶ 104). Thus, for example, Petitioner argues that an ordinarily skilled artisan would have had reason to identify the boundaries of Hansen’s strip “to incorporate a variation of Gillespie’s ‘solid or colored lines’ and ‘colored or inverted backgrounds.’” Pet. 26 (citing Ex. 1030 ¶ 59; Ex. 1002 ¶ 107); *see generally* Pet. 24–27.

For limitation 1.d, Petitioner identifies the recited gliding gesture as the gesture shown in Hansen’s Figure 2, reproduced above. *See supra* part IV.D.1; Pet. 70–75 (citing Ex. 1029, 4:34–67, 7:37–49, Figs. 2, 3A; Ex. 1030 ¶ 56; Ex. 1002 ¶¶ 197–200).

Neonode does not contest Petitioner’s arguments with regard to limitations 1.c and 1.d, and we find them sufficiently persuasive at this stage.

Thus, the evidence on the preliminary record, as a whole, suggests that a person of ordinary skill in the art would have had reason to combine Hansen with Gillespie, and that the resulting combination teaches all the

limitations of claim 1, and we determine that Petitioner has shown a reasonable likelihood that it would prevail on Ground 2A.

7. *Dependent Claims 2–8*

For claims 2–8, including claims 4, 5, and 6, which are covered by Grounds 2B, 2C, and 2D, respectively, Petitioner’s arguments are analogous to the arguments made with respect to these claims in Grounds 1A–D. *Compare* Pet. 48–63, *with* Pet. 75–82. Neonode does not contest these arguments at this stage, and we find them sufficiently persuasive.

Thus, we determine that Petitioner has shown a reasonable likelihood that it would prevail on its Grounds 2A–D, asserting that claims 1–8 are unpatentable as obvious over the combination of Hansen and Gillespie, and further in light of Allard-656, Tanaka, or Kodama with respect to claims 4, 5, and 6, respectively.

E. CONCLUSION

Based on the evidence available on the preliminary record, Petitioner has demonstrated a reasonable likelihood of success in showing that at least one of the challenged claims of the ’993 patent is unpatentable on the grounds raised in the Petition.

V. ORDER

In consideration of the foregoing, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–8 of the ’993 patent is instituted with respect to the grounds set forth in the Petition; and

IPR2021-00145  
Patent 8,812,993 B2

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, *inter partes* review of the '993 patent commences on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2021-00145  
Patent 8,812,993 B2

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