

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-01084
Patent 10,649,578 B1

Before JEFFREY S. SMITH, BARBARA A. BENOIT, and
SHARON FENICK, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner, Apple Inc., filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–4, 8–18, 22–30, and 34–39 of U.S. Patent No. 10,649,578 B1 (Ex. 1001, “the ’578 patent”) pursuant to 35 U.S.C. § 311(a). Patent Owner, Smith Interface Technologies, LLC, filed a Preliminary Response (Paper 6, “Prelim. Resp.”) pursuant to 35 U.S.C. § 313.

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and preliminary 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.” For the reasons that follow, we institute an *inter partes* review as to claims 1–4, 8–18, 22–30, and 34–39 of the ’578 patent on the grounds of unpatentability asserted in the Petition.

II. REAL PARTIES-IN-INTEREST

Petitioner identifies itself (Apple Inc.) as its sole real party-in-interest. Pet. 57. Patent Owner identifies itself (Smith Interface Technologies, LLC) as its sole real party-in-interest. Paper 4, 1.

III. RELATED MATTERS

Petitioner and Patent Owner state that the ’578 patent is the subject of the following proceeding:

Smith Interface Technologies, LLC v. Apple, Inc., No. 3-23-cv-01187 (SDCA).

Pet. 57; Paper 4, 1.

IV. THE '578 PATENT

The '578 patent discloses an electronic device with a display screen having a touch sensitive surface. Ex. 1001, Abstract. The electronic device can detect an input on a first icon displayed on the screen, and in response, launch a corresponding application. *Id.* The device can detect a second input that includes movement across a display, and in response, perform an operation. *Id.*

V. ILLUSTRATIVE CLAIM

Challenged claim 1 of the '578 patent is reproduced below using Petitioner's notation (Pet. vi–vii) and recites:

[1.pre] An electronic device, comprising:

[1.a] a display;

[1.b] a touch interface;

[1.c] one or more processors;

[1.d] memory; and

[1.e] one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for:

[1.f] displaying a home screen on the display, the home screen including an icon associated with an application;

[1.g] while displaying the home screen, detecting a first input by a first contact on the icon;

[1.h] in response to detecting the first input, replacing the home screen with a user interface of the application;

[1.i] while displaying the user interface of the application, detecting a second input by a second contact that includes movement across the display in a direction;

[1.j] in response to detecting the second input and in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to

include a movement parameter that is above a movement threshold, displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, such that the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer; and

[1.k] in response to detecting the second input and in accordance with a determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold, replacing the user interface of the application with the home screen including the icon associated with the application.

Ex. 1001, 95:61–96:32.

VI. ASSERTED GROUNDS

Petitioner asserts that claims 1–4, 8–18, 22–30, and 34–39 of the ’578 patent are unpatentable on the following grounds (Pet. 2).

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–4, 8–18, 22–30, 34–39	103(a)	Shiplacoff ²
1–4, 8–18, 22–30, 34–39	103(a)	Shiplacoff, Nan ³

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because parent application 13/576,004 was filed on Aug. 3, 2012, which is before the March 16, 2013 effective date of the applicable AIA amendment, the pre-AIA version of § 103 applies.

² Ex. 1004, US Patent Application Publication No. 2010/0095240 A1, filed Apr. 1, 2009, pub. Apr. 15, 2010.

³ Ex. 1005, US Patent No. 9,658,766 B2, filed May 27, 2011, iss. May 23, 2017.

VII. LEVEL OF ORDINARY SKILL

Petitioner contends that a person of ordinary skill in the art would have had a bachelor's degree in computer science, computer engineering, electrical engineering, human-computer interaction, or a comparable field and at least two years of professional experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof. Pet. 4 (citing Ex. 1003 ¶ 22). Petitioner's declarant, Loren Terveen, Ph.D., testifies that "[s]uch experience could be obtained through research and study in a graduate program or through comparable exposure through industry employment, and additional years of experience could substitute for the advanced-level degree." Ex. 1003 ¶ 22. Patent Owner notes that it does not agree with Petitioner's proposed level of ordinary skill, "but does not believe that resolving the level is necessary to resolve the issues raised in this preliminary response." Prelim. Resp. 7.

As Petitioner's description of a person of ordinary skill appears commensurate with the subject matter before us, we apply Petitioner's definition for purposes of this Decision. Also, the level of ordinary skill in the art can be evidenced by the references cited, and we find it commensurate with the cited references in this proceeding. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

VIII. CLAIM CONSTRUCTION

We interpret claim terms 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). In this context, claim terms "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention.

Phillips v. AWH Corp., 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.”⁴ *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

We construe only those claim terms that require analysis to determine whether to institute *inter partes* review. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner and Patent Owner contend that no claim terms need to be construed in order to resolve a controversy. Pet. 4; Prelim. Resp. 6. However, on this record, it appears that the proper construction of certain

⁴ Neither Petitioner nor Patent Owner refers to the detailed description or the figures when summarizing the ’578 patent. *See* Pet. 2–3 (citing the Abstract and part of the Summary of the ’578 patent); Prelim. Resp. 3–4 (summarizing the limitations of claims 1, 15, and 27). The parties are invited to identify the portions of the ’578 patent that provide written description support for at least the disputed limitations.

terms may be necessary to resolve a controversy in the Final Written Decision.⁵

Patent Owner implicitly construes limitations [1.j] and [1.k] to mean “‘the second input meets’ [or] ‘does not meet’ the movement criteria.” Prelim. Resp. 27 (emphasis omitted); *see id.* at 26 (“‘[a] second input meets—or ‘does not meet’—certain ‘criteria,’” where “‘this criteria will be referred to hereinafter as the ‘movement criteria’” (emphasis omitted)). We highlight the following issues raised by Patent Owner’s proposed construction and invite the parties to address the issues in their respective briefings.

First, under Patent Owner’s proposed construction, limitations [1.j] and [1.k], on this record, seem to be written as mutually exclusive alternatives, such that only one of limitations [1.j] and [1.k] is performed. Independent claims 15 and 27 contain similar limitations. For example, method claim 15 includes limitations [15.f] and [15.g], which either perform “displaying” a portion of the user interface of the application if the second input meets the movement criteria as recited in limitation [15.f], or “replacing” the user interface of the application if the second input does not meet the movement criteria as recited in limitation [15.g]. We invite the parties to address whether, properly construed, limitations [15.f] and [15.j] are written as mutually exclusive alternatives, and specifically whether only

⁵ We request that arguments relating to any claim construction issue appear in a clearly designated section of briefing and note that such arguments should “point out the specific portions of the specification, prosecution history, and relevant extrinsic evidence” to be considered, with explanations of the relevancy of that evidence to the arguments presented. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide, at 46, 49 (Nov. 2019) (available at <https://www.uspto.gov/TrialPracticeGuide Consolidated>).

one of these two limitations needs to be satisfied in order to meet the claim. *See Brown v. 3M*, 265 F.3d 1349, 1352–53 (Fed. Cir. 2001)); *Hytera Commc'ns Co. v. Motorola Solutions, Inc.*, 841 F. App'x 210 (2021); *Applera Corp. Applied Biosystems Group v. Illumina, Inc.*, 375 F. App'x 12, 21 (Fed. Cir. 2010); *Cybersettle, Inc. v. Nat'l Arbitration Forum, Inc.*, 243 F. App'x 603, 607 (Fed. Cir. 2007); *Ex parte Schulhauser*, Appeal 2013-007847, 2016 WL 6277792 (PTAB Apr. 28, 2016) (precedential).

For example, a party asserting that the prior art must satisfy both [15.f] and [15.g] should address a legal basis for requiring the prior art to satisfy a limitation that would not be performed, as well as the holding from *Brown* “that: ‘That which infringes if later anticipates if earlier.’” 265 F.3d at 1352. Similarly, a party asserting that “to render the claim obvious, the prior art need only teach one condition and its corresponding response” should address a legal basis for requiring the prior art to satisfy only one of limitations [15.f] and [15.g]. *Hytera*, 841 F. App'x at 215. Each party should also address whether its analysis would reach a different result when applied to “device” claim 1, which recites “one or more instructions for” performing limitations [1.j] and [1.k], and “storage medium” claim 27, which recites “instructions which, when executed . . . cause the electronic device to” perform limitations [27.e] and [27.f]. *See id.* at 216 (“[T]he ‘selecting’ step in claim 7 is not met unless the TDMA system is configured to perform each claimed responsive action in response to each corresponding claimed prerequisite condition.”).

Second, limitation [1.j] recites “the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold.” Construing this limitation to mean “the second input meets the movement criteria” as proposed by

Patent Owner appears, on this record, to replace the claim terms “one or more criteria” and “a movement parameter” with the term “movement criteria” which is not recited in the claim. Limitation [1.k] presents a similar issue. We invite the parties to address the proper construction of terms in these limitations, and suggest that some or all of the following topics may be useful in our determination: (a) whether we should construe the claim terms “one or more criteria” and “a movement parameter” as “movement criteria;” (b) whether the scope of either or both of the claimed “one or more criteria” and the “movement parameter” should be construed as encompassing something other than, or in addition to, movement criteria; (c) whether the claimed “one or more criteria” includes the claimed “movement parameter,” or whether the claimed “movement parameter” is distinct from the “one or more criteria,” and (d) whether detecting the claimed “movement parameter above a movement threshold” is sufficient to meet the claimed “one or more criteria,” or whether one or more other criteria must also be met.

IX. ANALYSIS

A. *Legal Standards*

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)); *see also* 37 C.F.R. § 42.104(b) (requiring a petition for *inter partes* review to identify how the challenged claim is to be construed and where each element of the claim is found in the prior art patents or printed publications relied upon).

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented 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) (quoting 35 U.S.C. § 103(a)). “The [obviousness] analysis is objective: ‘Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.’” *Id.* (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966)). When in evidence, “secondary considerations [such] as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized.” *Id.* Against this factual background, the obviousness or nonobviousness of the claims at issue is determined. *Id.*

The obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2016) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)). Furthermore, Petitioner does not satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal

conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

B. Claims 1–4, 8–18, 22–30, and 34–39 as Obvious Over Shiplacoff

1. Shiplacoff – Exhibit 1004

Shiplacoff relates to application management in computing devices. Ex. 1004 ¶ 4. Figure 2 of Shiplacoff, reproduced below, depicts the display screen in full screen mode, wherein an activity occupies the entire display screen.

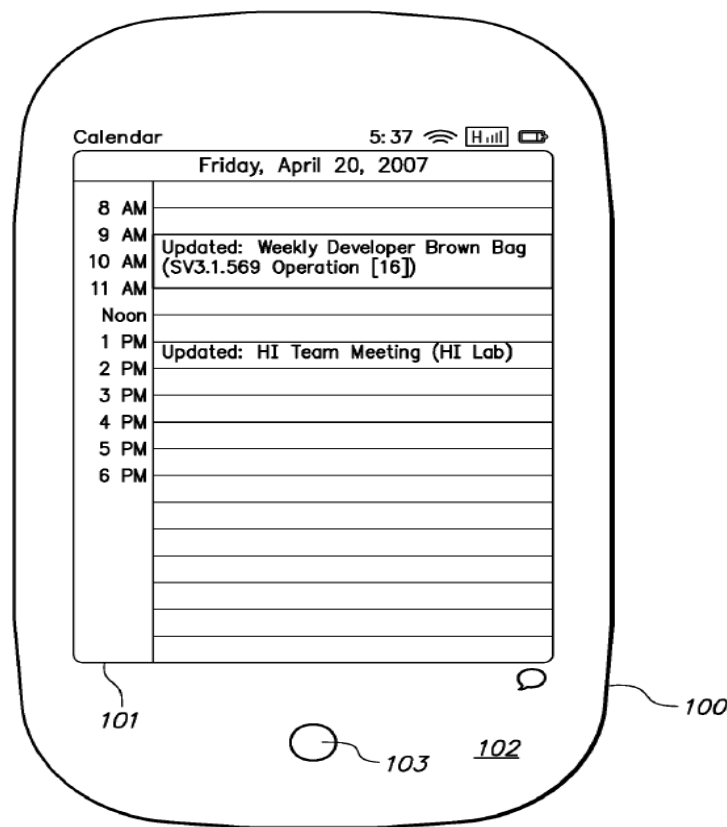


FIG. 2

Figure 2 above shows display screen 101 of device 100 in full screen mode. Ex. 1004 ¶ 75. A calendar application occupies the entire display screen. *Id.*

Figure 3 of Shiplacoff, reproduced below, depicts the display screen in card mode, including a card having focus and two partially displayed cards. Ex. 1004 ¶ 30.

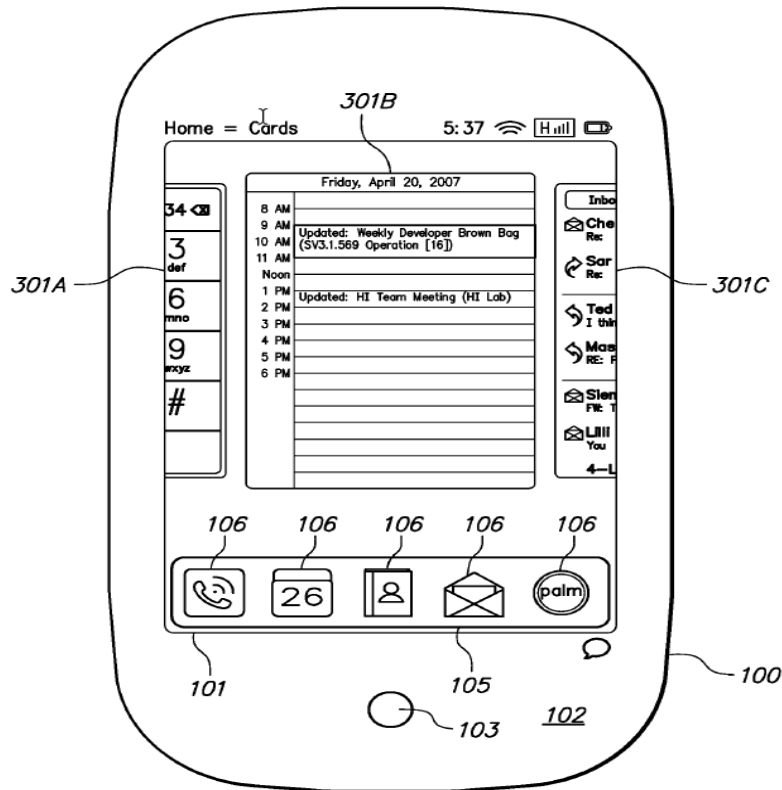


FIG. 3

Figure 3 above shows display screen 101 in card mode. Ex. 1004 ¶ 77. Card 301B having focus is fully visible. *Id.* ¶ 78. Cards 301A, 301C are only partially visible and do not have focus. *Id.*

A card 301 can be closed by clicking on a control within the card, by dragging the card upward off screen 101, or performing a flicking action in an upward direction. *Id.* ¶ 100. A user can switch among the modes by performing a gesture such as a swipe up gesture. *Id.* ¶ 127. The user can launch additional activities by returning to a launch screen. *Id.* ¶ 99. The user can return to the launch screen by performing a gesture. *Id.*

2. Independent claim 1

Petitioner challenges claim 1 as unpatentable over Shiplacoff. Pet. 8–25. With respect to claim 1, Patent Owner presents arguments only with respect to limitations [1.j] and [1.k]. Prelim. Resp. 11–34.

Preamble

The preamble recites “An electronic device, comprising.” Petitioner contends that Shiplacoff teaches the preamble in disclosing an electronic device such as a handheld computer, personal digital assistant, personal computer, and smartphone. Pet. 8–9 (citing Ex. 1003 ¶ 41). Based on the evidence and arguments currently of record, for purposes of institution, we do not need to resolve whether the preamble is limiting, because we are sufficiently persuaded that Shiplacoff teaches the preamble of claim 1.

Limitation [1.a]

Limitation [1.a] recites “a display.” Petitioner contends that Shiplacoff teaches this limitation in disclosing an electronic device including a display screen. Pet. 9–10 (citing Ex. 1003 ¶ 42).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.b]

Limitation [1.b] recites “a touch interface.” Petitioner contends that Shiplacoff teaches this limitation in disclosing a touch sensitive screen and a touch sensitive button. Pet. 10–11 (citing Ex. 1003 ¶¶ 43–44).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.c]

Limitation [1.c] recites “one or more processors.” Petitioner contends that Shiplacoff teaches this limitation in disclosing one or more processors. Pet. 11 (citing Ex. 1003 ¶ 45).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.d]

Limitation [1.d] recites “memory.” Petitioner contends that Shiplacoff teaches this limitation in disclosing memory. Pet. 11–12 (citing Ex. 1003 ¶ 46).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.e]

Limitation [1.e] recites “one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the one or more processors, the one or more programs including instructions for.” Petitioner contends that Shiplacoff teaches this limitation in disclosing programs stored in memory and executed by the one or more processors. Pet. 11–12 (citing Ex. 1003 ¶ 46).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.f]

Limitation [1.f] recites “displaying a home screen on the display, the home screen including an icon associated with an application.” Petitioner

contends that Shiplacoff teaches this limitation in disclosing a display screen showing a launcher including several icons representing icons that can be opened by the user. Pet. 12–13 (citing Ex. 1003 ¶ 47).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.g]

Limitation [1.g] recites “while displaying the home screen, detecting a first input by a first contact on the icon.” Petitioner contends that Shiplacoff teaches this limitation in disclosing that the display screen is touch sensitive, so that a user can activate an application or function by touching a displayed icon. Pet. 13–14 (citing Ex. 1003 ¶ 48).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.h]

Limitation [1.h] recites “in response to detecting the first input, replacing the home screen with a user interface of the application.” Petitioner contends that Shiplacoff teaches this limitation in disclosing a user selecting an icon on the home screen, and in response, replacing the home screen with a full screen mode, in which a card representing an application associated with the selected icon occupies the entire display screen. Pet. 14–15 (citing Ex. 1003 ¶ 51).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.i]

Limitation [1.i] recites “while displaying the user interface of the application, detecting a second input by a second contact that includes movement across the display in a direction.” Petitioner contends that Shiplacoff teaches this limitation in disclosing detecting a swipe up gesture while displaying the card in the full screen mode. Pet. 15–16 (citing Ex. 1003 ¶¶ 52–53).

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches this limitation of claim 1.

Limitation [1.j]

Limitation [1.j] recites

in response to detecting the second input and in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold, displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer, such that the at least portion of the user interface of the application is reduced in size and is further displayed in its entirety when displayed in the first virtual display layer.

Petitioner contends that Shiplacoff teaches this limitation in disclosing that the display switches from full screen mode to card mode in response to the swipe up gesture. Pet. 17–23 (citing Ex. 1004 ¶¶ 54–59). Petitioner contends that, in card mode, card 301B is displayed in its entirety and is reduced in size from full screen mode, and appears at a lesser depth as compared to the background layer including cards 301A and 301C, which are smaller in size than card 301B. *Id.* (citing Ex. 1004, Fig. 3).

Patent Owner contends that Shiplacoff does not use the words “blurring,” “depth,” or “layer.” Prelim. Resp. 13–14. Patent Owner contends that Shiplacoff does not suggest blurring cards 301A and 301C. *Id.* at 15. Patent Owner contends that although Shiplacoff discloses that cards 301A and 301C are out of focus because they are smaller in size, the focus discussed by Shiplacoff is the focus of the user, which Patent Owner contends is subjective. *Id.* at 14–15. Patent Owner contends that Petitioner’s evidence that changing the relative size of cards shows depth comes from another reference, and that Petitioner has not explained how a person of ordinary skill would have modified Shiplacoff to include the teaching of the other reference. *Id.* at 16–17. Patent Owner contends that the difference in size between card 301B and cards 301A and 301C does not teach the claimed difference in depth between two virtual display layers. *Id.* at 14, 17. Patent Owner contends that the claimed “layer that appears at a lesser depth” requires depth cues such as a blur operation, a shadow element, depth-based fog, a depth-based rate of movement, or animated visual elements which appear to exist between layers. *Id.* at 17–18 (citing Ex. 1001, 69:43–70:45).

On the present record, we disagree with Patent Owner’s contention that the difference in size between card 301B and cards 301A and 301C does not show a layer that appears at a lesser depth. Dr. Terveen persuasively testifies that “[o]bjects that are smaller and less focused appear to be located further away than objects that are located closer to a person.” Ex. 1003 ¶ 56 (citing Ex. 1012, 4:37–41, 59:18–23). Dr. Terveen persuasively testifies that “[b]y displaying cards using a similar depth perception technique, an appearance of the cards 301A-C and the background layer having different distances can be achieved. In Shiplacoff, card 301B is largest in size and

more focused, and thus appears as a layer that is closest to a user.” *Id.* This testimony is supported by US Patent 9,716,874 B2 (Ex. 1012, “Jacobs”), which discloses that “[p]erspective uses information that if two objects are the same size, but one object is closer to the viewer than the other object, then the closer object will appear larger. The brain processes this information to provide clues that are interpreted as perceived depth.” Ex. 1012, 4:37–41; *see id.* at 59:17–23 (“[I]f one letter A were to be slightly different in size from the other, the letter would appear to be moving in depth, i.e. given a third dimension.”). On this record, we are sufficiently persuaded that Dr. Terveen’s testimony is supported by evidence of record, and that this testimony persuasively shows that the difference in size between card 301B and cards 301A and 301C teaches displaying card 301B in a “layer that appears at a lesser depth” than cards 301A and 301C as claimed.

Additionally, on the present record, we disagree with Patent Owner’s contention that a person of ordinary skill in the art would have had to modify Shiplacoff using the teachings of Jacobs to achieve the claimed “layer that appears at a lesser depth.” Shiplacoff already shows the difference in size between card 301B and cards 301A and 301C. Jacobs makes explicit what Shiplacoff implicitly shows, namely, that a person of ordinary skill in the art would have known that larger card 301B appears as closer than smaller cards 301A and 301C, because “[t]he brain processes this information to provide clues that are interpreted as perceived depth.” Ex. 1012, 4:37–41. We are sufficiently persuaded that Jacobs provides evidence of the skilled artisan’s background knowledge that differences in size provide clues that are interpreted as perceived depth. The Supreme Court has recognized that looking to the skilled artisan’s background knowledge is foundational to a

proper obviousness analysis. *See KSR*, 550 U.S. at 401 (To determine whether a claim would have been obvious, “it will often be necessary to look . . . to the background knowledge possessed by a person having ordinary skill in the art.”); *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) (“Art can legitimately serve to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.”).

Additionally, we do not determine that the claim requires depth cues such as a blur operation, a shadow element, depth-based fog, a depth-based rate of movement, or animated visual elements which appear to exist between layers as disclosed in the Specification of the ’578 patent. The Specification discloses that “a virtual display layer refers to a collection of display elements which have all been assigned the same apparent depth,” and further discloses that, “[i]n various embodiments, virtual display layers may be given the appearance of depth through the use of 3D depth cues.” Ex. 1001, 69:24–27, 69:43–45. Thus, the Specification describes the depth cues as optional features of “various embodiments.” The Federal Circuit has held that “it is improper to read limitations from a preferred embodiment described in the specification – even if it is the only embodiment – into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1327 (Fed. Cir. 2012); *Phillips*, 415 F.3d at 1323 (internal quotations omitted) (“[C]laims may embrace different subject matter than is illustrated in the specific embodiments in the specification.”). We are sufficiently persuaded that the plain and ordinary meaning of the claim as read in light of the Specification does not require the particular disclosed but unclaimed depth cues.

With respect to the dispute between Petitioner and Patent Owner about whether the claimed “first virtual display layer that appears at a lesser depth” is subjectively or objectively at a lesser depth (Pet. 17 n.4 (emphasis omitted); Prelim. Resp. 14 n.3), we do not need to resolve this dispute to determine that Petitioner has sufficiently shown that the difference in size between card 301B and cards 301A and 301C sufficiently shows this limitation. To the extent that the parties continue to assert that resolving this issue is necessary, the parties are invited to propose a proper construction of a “virtual display layer that appears at a lesser depth” in the claim construction section of their briefings, rather than in a footnote in the analysis section of this ground.

We highlight that the term “virtual display layer that appears at a lesser depth” implies an apparent or virtual, rather than a physical, “lesser depth.” To the extent that Patent Owner relies on the 3D layered user interface made up of overlapping layers to assert that virtual depth can be objectively measured (Prelim. Resp. 14 n.3), we highlight that Patent Owner has not shown that the Specification describes determining an objective depth of a virtual layer displayed on a user interface made up of a single layer. Rather, the Specification distinguishes between a 3D layered user interface made up of actual overlapping display layers, and 3D layered user interface made up of a single layer that uses virtual display layers such as a virtual foreground layer and a virtual background layer. Ex. 1001, 69:3–14, 69:22–32. On this record, we agree with Petitioner that the claimed “first virtual display layer that appears at a lesser depth,” read in light of the Specification of the ’578 patent, means that, in a two dimensional image, a foreground virtual layer would appear to be at a lesser depth than a

background virtual layer even though the two virtual layers are on the same physical layer of the display.

On this record, we also disagree with Patent Owner's distinction between blur and out of focus. *See* Prelim. Resp. 14–15. First, as discussed above, blurring is not required by the claim. Second, Shiplacoff discloses that card 301B has focus and cards 301A and 301C do not have focus. Ex. 1004 ¶ 78. Even were we to agree with Patent Owner that there is a difference between blur and out of focus, we agree with Petitioner on this record that card 301B having focus and cards 301A and 301B not having focus is a depth cue such that card 301B which has focus appears on a foreground virtual display layer at a lesser depth than the background virtual display layer that includes cards 301A and 301C which do not have focus. Pet. 20–21; Ex. 1003 ¶ 57.

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches limitation [1.j] of claim 1.

Limitation [1.k]

Limitation [1.k] recites

in response to detecting the second input and in accordance with a determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold, replacing the user interface of the application with the home screen including the icon associated with the application.

Petitioner contends that Shiplacoff teaches this limitation in disclosing detecting a tap or a flick gesture that is not above the movement threshold and in response, returning to the home screen. Pet. 23–24 (citing Ex. 1003 ¶¶ 60–61).

Before turning to Patent Owner’s contentions, we highlight that we are applying Patent Owner’s construction of limitations [1.j] and [1.k] to mean “‘the second input meets’ [or] ‘does not meet’ the movement criteria” as discussed above in Section VIII (quoting Prelim. Resp. 27) to determine whether to institute trial, and reiterate that we invite the parties to address whether limitations [1.j] and [1.k] are written in the alternative, such that only one of these two limitations needs to be shown in the prior art in order to meet the claim.

Patent Owner contends that the claimed “second input” of limitation [1.j] must be the same gesture as the claimed “second input” recited in limitation [1.k]. Prelim. Resp. 28–29. We highlight that under Patent Owner’s proposed construction, limitation [1.j] only requires a second input that meets a movement criteria, and limitation [1.k] only requires a second input that does not meet the movement criteria. Neither limitation limits the second input to a specific gesture. That is, under Patent Owner’s proposed construction, any second input that meets the movement criteria would satisfy [1.j], and any second input that does not meet the movement criteria would satisfy [1.k]. We invite the parties to address whether the “second input” of limitations [1.j] and [1.k] is limited to a single gesture that either meets or does not meet the movement criteria, either under Patent Owner’s proposed construction or under another construction advanced by a party.

Patent Owner contends that Petitioner asserts that “this swipe up gesture [of Shiplacoff] also teaches ‘the second input’” of limitation [1.j]. Prelim. Resp. 28 (citing Pet. 17, 21–23). Patent Owner contends that Petitioner “‘maps other gesture[s] different from the swipe up gesture’ to ‘the second input [that] does not meet’ . . . the movement criteria” of limitation [1.k]. *Id.* (citing Pet. 23, 39–40). Patent Owner asserts that

“Petitioner specifically relies on two admittedly ‘different’ ‘gesture[s]’ from Shiplacoff’s ¶ [100]: (1) ‘clicking (e.g., tapping) on a control within the card,’ and (2) ‘performing a flicking action in an upward direction.’” *Id.* (citing Pet. 39, 23–24). Patent Owner contends that “Petitioner’s mapping thus violates the plain claim language, which requires the ‘second input’ found in these earlier-recited limitations to be ‘the’—i.e., the same—‘second input’ evaluated in the later recited [l]imitations.” *Id.* at 28–29 (emphasis omitted). As discussed in the previous paragraph, applying Patent Owner’s construction of limitations [1.j] and [1.k], the second input does not seem to be limited to a specific gesture, but we invite the parties to address whether the “second input” of limitations [1.j] and [1.k] is limited to a single gesture that either meets or does not meet the movement criteria, or encompasses any gesture that meets or does not meet the criteria. However, even were we to accept Patent Owner’s contention that the claimed second input of limitations [1.j] and [1.k] must be the same gesture that either meets or does not meet a movement criteria, we are sufficiently persuaded that a swipe up gesture (a finger moving upwards over a relatively long distance) and a flicking gesture (a finger moving upwards over a relatively short distance) are the same gesture that either meets or does not meet the movement criteria. Petitioner has sufficiently shown that the swipe up gesture of Shiplacoff includes a movement criteria that is above a movement threshold, and the flicking gesture of Shiplacoff includes a movement criteria that is not above a movement threshold.

Patent Owner contends that Shiplacoff discloses that flicking a card closes or dismisses a card while in card mode, but does not result in returning to the launch screen. Prelim. Resp. 32. Patent Owner contends that Petitioner is mixing the embodiment of flicking a card in order to

dismiss a card (Ex. 1004 ¶¶ 100–102, 167) with the embodiment of returning to the launch screen by performing a gesture (Ex. 1004 ¶ 99). *Id.* at 32–33. Patent Owner further contends that Dr. Terveen does not provide a reason for a person of ordinary skill in the art to use a flick gesture to return to the launch screen. *Id.* at 34 (citing Ex. 1003 ¶ 85).

We disagree with Patent Owner’s contention that Petitioner is mixing embodiments. Shiplacoff discloses that the user can return to the launch screen by performing a gesture, but does not identify a specific gesture that returns to the launch screen. Ex. 1004 ¶ 99. Shiplacoff discloses that a user can close a card (a) by clicking on a control within a card, (b) by dragging a card upward off screen, or (c) by performing a flicking action in an upward direction. *Id.* ¶ 100. On this record, given that Shiplacoff discloses using a gesture to return to a home screen without specifying which gesture, as well as disclosing a flick gesture, we are sufficiently persuaded that using the disclosed flick gesture to return to the launch screen falls within the embodiment of returning to the launch screen.

Even if we were to accept Patent Owner’s contention that Petitioner is mixing embodiments, we are sufficiently persuaded that a person of ordinary skill in the art would have used a flicking gesture to return to the home screen. Dr. Terveen testifies that using a gesture, such as a flick, to return the display to the launch screen as taught by Shiplacoff, after closing a card as taught by Shiplacoff, yields the benefit of allowing a user to launch another application from the launch screen. Ex. 1003 ¶¶ 60–61 (citing Ex. 1004 ¶¶ 99–102, 167). Given that Shiplacoff discloses using a gesture to return to the launch screen without identifying a specific gesture to do so, and that Shiplacoff discloses a flicking gesture, on this record we are sufficiently persuaded that a person of ordinary skill in the art would have

recognized that using the flicking gesture to return to the home screen was a known option within the technical grasp of a person of ordinary skill that yields the benefit of allowing a user to launch another application. *See KSR*, 550 U.S. at 421.

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Shiplacoff teaches limitation [1.k] of claim 1.

Conclusion for claim 1

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that Shiplacoff renders obvious claim 1.

3. Remaining Claims 2–4, 8–18, 22–30, and 34–39

Petitioner challenges claims 2–4, 8–18, 22–30, and 34–39 as unpatentable over Shiplacoff. *See* Pet. 25–41. With respect to independent claims 15 and 27, Patent Owner relies on arguments presented for claim 1, which we addressed in our analysis of claim 1 above. *See* Prelim. Resp. Patent Owner does not separately argue against Petitioner’s showing with respect to the dependent claims. *See* Prelim. Resp. 11–34. At this stage, because Petitioner demonstrates a reasonable likelihood of prevailing with respect to its challenge of claim 1, we do not see the need to further address the challenges of the remaining claims. Further analysis is best left for trial after full development of the record. Because “[e]qual treatment of claims and grounds for institution purposes has pervasive support in *SAS*,” we institute on all the claims as challenged in the Petition. *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018); 37 C.F.R. § 42.108(a) (“When instituting . . . review, the Board will authorize the review to

proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”).

C. Claims 1–4, 8–18, 22–30, and 34–39 as Obvious Over Shiplacoff and Nan

1. Nan – Exhibit 1005

Nan discloses techniques that enable a user to quickly and easily select a user interface not currently exposed on a display through an edge gesture that is easy to use and remember. Ex. 1005, Abstract, 2:40–43. The interface to present may be determined based on one or more factors of the gesture, such as a final or intermediate length of the gesture, whether the gesture is single-finger or multi-finger, or a speed of the gesture. *Id.* at 7:9–11, 7:30–34. The gesture may be a relatively short single-finger gesture, or a relatively long single-finger gesture. *Id.* at 7:41, 7:43–44. In response to the gesture, a user interface is presented to the user. *Id.* at 7:47–49. The user interface may be a start menu or an application-selection interface, for example. *Id.* at 7:39–41; *see id.* at Fig. 8.

2. Reasons to Combine Shiplacoff and Nan

Petitioner contends that a person of ordinary skill in the art would have implemented the touch gestures of Nan in Shiplacoff’s device that includes a touch screen for the benefits of avoiding latency and not displaying on-screen controls. Pet. 43–44. Petitioner contends that using the gestures of Nan, which include factors such as length, speed, hold time, and number of fingers, to execute a change from one of Shiplacoff’s display modes to another, does no more than yield predictable results. *Id.* at 43, 45. We are sufficiently persuaded that Petitioner has shown a reason to use the edge gestures of Nan to switch from one of Shiplacoff’s display screens to another.

Patent Owner does not provide any specific argument with respect to these contentions.

3. Independent claim 1

Petitioner challenges claim 1 as unpatentable over the combination of Shiplacoff and Nan. Pet. 41–47. For claim 1, Patent Owner presents arguments addressing limitations [1.j] and [1.k]. Prelim. Resp. 35; *see id.* at 11–27.

Petitioner contends that the combination of Shiplacoff and Nan teaches limitations [1.j] and [1.k]. Pet. 46. Petitioner contends that to the extent Shiplacoff does not explicitly disclose a gesture including a movement threshold and related features required by limitations [1.j] and [1.k], Nan teaches these limitations. *Id.* Petitioner contends that Nan discloses a system that uses one or more factors of an edge gesture, such as the length, speed, time, and number of fingers of the edge gesture to determine which interface to present to a user. *Id.* at 46–47. Petitioner contends that a person of ordinary skill in the art, in using an edge gesture including a movement in an upward direction from an edge of a display as taught by Nan, to a distance across a display as taught by Shiplacoff, would have determined whether the movement is above a threshold associated with one or more of length, speed, and number of fingers as taught by Nan. *Id.* at 47 (citing Ex. 1004 ¶ 127; Ex. 1005, 7:9–55, Fig. 8; Ex. 1003 ¶ 88).

Patent Owner contends that limitation [1.k] recites “‘the second input [that] does not meet’ the criteria recited therein” and that “Petitioner’s Ground 2 does not anywhere mention Shiplacoff’s ‘tap or flick’ mapped in Ground 1, much less attempt to substitute the ‘tap or flick’ with any elements or disclosure from Nan.” Prelim. Resp. 35. We disagree. The cited portion of Nan explicitly teaches what is already taught by the

relatively long swipe up gesture and the relatively short flicking gesture of Shiplacoff, namely, that the length of the gesture can be used to determine which user interface is presented on a display, such as a home screen or an application selection interface. Ex. 1005, 7:9–56.

For example, the cited portion of Nan teaches that “a relatively short single-finger gesture” (Ex. 1005, 7:41) and “a relatively long single-finger gesture” (Ex. 1005, 7:43–44) can be used to determine which screen to display (Ex. 1005, 7:39–41). Nan’s teaching is cumulative to Shiplacoff’s teaching of using a flicking gesture, which is below a movement threshold, and a swipe up gesture, which is above a movement threshold, to determine which screen to display. On this record, the teachings of Nan appear cumulative to the teachings of Shiplacoff in showing that displaying one screen in response to a gesture below a movement threshold and displaying a different screen in response to a gesture above a movement threshold were within the level of ordinary skill.

Based on the evidence and arguments currently of record, for purposes of institution, we are sufficiently persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that the combination of Shiplacoff and Nan renders obvious claim 1.

4. Remaining Claims 2–4, 8–18, 22–30, and 34–39

Petitioner challenges claims 2–4, 8–18, 22–30, and 34–39 as unpatentable over Shiplacoff and Nan. *See* Pet. 46–49. Patent Owner does not separately argue against Petitioner’s showing with respect to the dependent claims. *See* Prelim. Resp. 35. At this stage, because Petitioner demonstrates a reasonable likelihood of prevailing with respect to its challenge of claim 1, we do not see the need to further address the

challenges of the remaining claims. Further analysis is best left for trial after full development of the record.

D. Issues Under Section 325(d)

Under 35 U.S.C. § 325(d), the Board uses the following two-part framework to determine whether to exercise its discretion to deny institution:

- (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 the challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”). With respect to the first issue, previously presented art includes, among other things, “art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent.” *Id.* at 7–8. With respect to the second issue, institution generally will be denied if a “petitioner fails to make a showing of material error,” and “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Id.* at 8–9. “[T]his framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.* at 9.

In assessing whether we exercise discretion under 325(d), we consider the following factors articulated in *Becton, Dickinson & Co. v. B.*

Braun Melsungen, IPR2017-01586 (Paper 8, 17–18) (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson* factors”),

- 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;
- d) the extent of the overlap between the arguments made during examination and the manner in which a petitioner relies on the prior art or a patent owner distinguishes the prior art;
- e) whether a petitioner has pointed out sufficiently how the Office erred in evaluating 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.

“If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Advanced Bionics*, Paper 6 at 10. Upon consideration of these factors, we decline to deny institution under § 325(d).

With respect to the first part of the *Advanced Bionics* framework, and *Becton, Dickinson* factor (a) in particular, Patent Owner argues (and Petitioner acknowledges) that Shiplacoff (Ex. 1004) was presented to the Office during prosecution of the ’578 patent, because Shiplacoff was cited in an IDS that was considered by the Examiner. *See* Prelim. Resp. 37; Pet. 53. However, Nan (Ex. 1005) was not before the Examiner. Patent Owner contends that Nan is cumulative to Shiplacoff. Prelim. Resp. 37.

With respect to the second part of the *Advanced Bionics* framework, and *Becton, Dickinson* factor (c) in particular, other than stating that Shiplacoff was considered in an IDS, the Examiner did not reject the claims

over Shiplacoff or Nan. With respect to *Becton, Dickinson* factor (e), Petitioner contends that Figures 2 and 3 of Shiplacoff teach limitation [1.j], which is the claimed feature relied upon by the Examiner as the reason for allowance. Pet. 55–56 (citing Ex. 1002, 760–778; Ex. 1004, Figs. 2, 3). Petitioner contends that the Examiner materially erred by not giving proper consideration to Shiplacoff, even though it was cited in an IDS. *Id.* Petitioner contends that the challenged claims were allowed based on this material error by the Examiner. *Id.* Petitioner further contends that the combination of Shiplacoff and Nan was never considered by the Examiner with respect to any of the challenged claims, which also constitutes material error. *Id.* at 56. Patent Owner contends that the Petition does not show material error because the Petition does not show how Shiplacoff teaches limitation [1.j]. Prelim. Resp. 38.

We agree with Petitioner that although Shiplacoff was cited in an IDS, the Examiner did not reject the claims over Shiplacoff. We further agree with Petitioner that, on this record, Figures 2 and 3 of Shiplacoff teach limitation [1.j] for the reasons given in our analysis of Ground 1. We agree with Petitioner that the Examiner’s reliance on limitation [1.j] as the reason for allowing claim 1 without addressing Figures 2 and 3 of Shiplacoff constitutes an error material to patentability. We also agree that the Examiner’s allowance of claim 1 without considering the combined teachings of Shiplacoff and Nan constitutes an error material to patentability. Accordingly, because part two of the *Advanced Bionics* framework is satisfied, we decline to exercise discretion to deny institution under Section 325(d).

X. CONCLUSION

Based on the arguments presented in the Petition, we conclude that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one claim of the '578 patent challenged in the Petition. Accordingly, we institute a trial on all claims and grounds asserted in the Petition. The Board has not made a final determination under 35 U.S.C. § 318(a) with respect to the patentability of the challenged claims.

XI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4, 8–18, 22–30, and 34–39 of the '578 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '578 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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Patent 10,649,578 B1

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