

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 JAMESON LEE, JEFFREY S. SMITH, and
SHARON FENICK, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

JUDGEMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

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). We issued an Institution Decision (Paper 7, “Dec.”) instituting the petitioned review. Patent Owner, Smith Interface Technologies, LLC, filed a Patent Owner’s Response (Paper 13, “PO Resp.”) pursuant to 35 U.S.C. § 313. Petitioner filed a Reply (Paper 17, “Reply”) and Patent Owner filed a Sur-Reply (Paper 22, “PO Sur-Reply”).

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–4, 8–18, 22–30, and 34–39 of the ’578 patent. We determine Petitioner has shown by a preponderance of the evidence that claims 1–4, 8–18, 22–30, and 34–39 are unpatentable.

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:

[1pre] An electronic device, comprising:

[1a] a display;

[1b] a touch interface;

[1c] one or more processors;

[1d] memory; and

[1e] 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:

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

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

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

[1i] 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;

[1j] 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

[1k] 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 agrees with this definition. PO Resp. 13 (citing Dec. 5).

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.” *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. *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 contends that “[a]ll claim terms should be construed according to the *Phillips* standard.” Pet. 4. Patent Owner contends that under the plain language of claim 1, the “one or more criteria” is satisfied when a “movement parameter” of “the second input” is detected to be “above a movement threshold.” PO Resp. 14. Patent Owner contends that under the plain language of claim 27, the “second one or more criteria” is satisfied when “a duration parameter” of the “second input” is detected to be “above a duration threshold.” *Id.* at 15. Patent Owner contends that the plain language of limitations [1j] and [1k] requires an operation capable of detecting a second input by a second contact that includes movement across a display in a direction, determining whether the second input meets or does not meet the recited criteria, and triggers performance of each of the corresponding display actions as appropriate. *Id.* at 15–19. Patent Owner

presents similar contentions for limitations [15f] and [15g] recited in claim 15. *Id.* at 21–23. Patent Owner contends that the plain language of limitations [27d]–[27f] recited in claim 27 require an operation that enables the device to detect a second input by a second contact that includes movement across the display in a direction, determine whether the second input meets or does not meet the two recited criteria, and trigger performance of each of the recited display actions as appropriate. *Id.* at 19–20. Patent Owner contends that for “the second input” recited in limitations [1j] and [1k], “the second input” must be detected in the same operational context. *Id.* at 23–24. In particular, Patent Owner contends that limitations [1j] and [1k], and similar limitations recited in claims 15 and 27, “require a single, common contact event as the starting point of the claimed logic operations.” *Id.* at 24; *see id.* at 25–26.

We do not need to determine whether Patent Owner’s proposed constructions are correct, because under either Petitioner’s or Patent Owner’s proposed constructions, we find that the prior art would have rendered all challenged claims obvious as discussed below in our patentability analysis.

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.

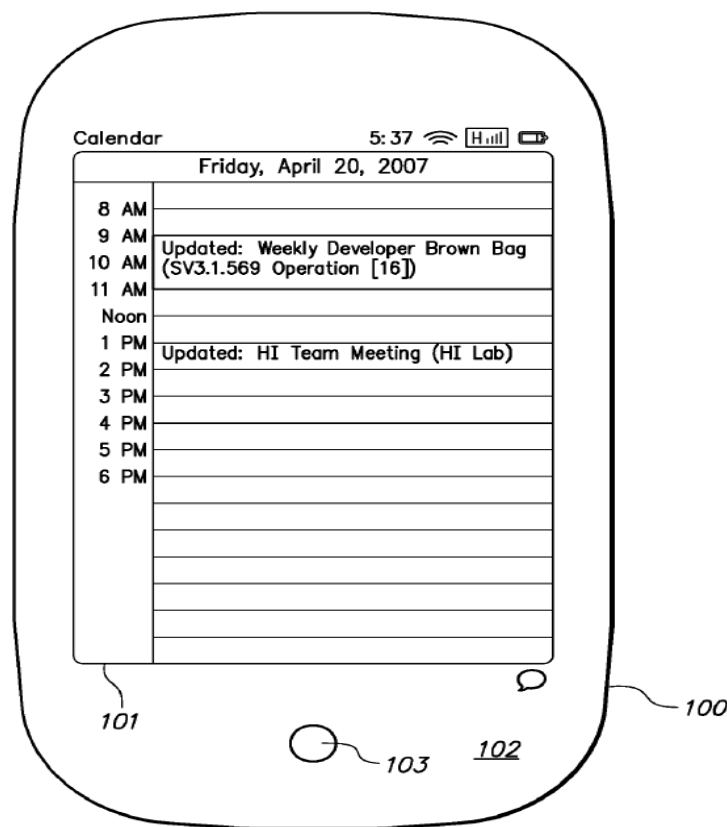


FIG. 2

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.

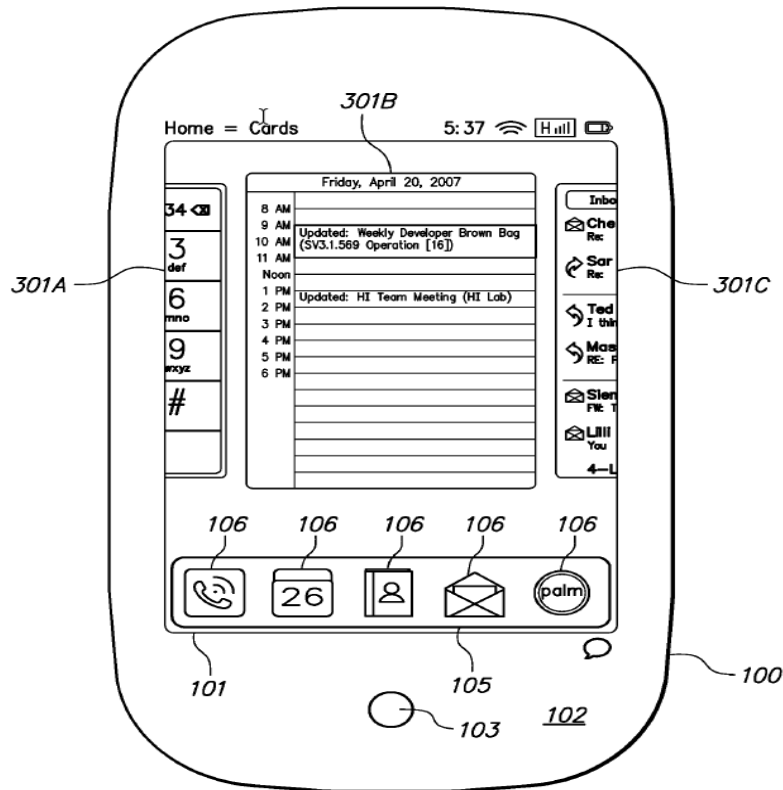


FIG. 3

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 [1j] and [1k]. PO Resp. 32–56.

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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches the preamble of claim 1.

Limitation [1a]

Limitation [1a] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1b]

Limitation [1b] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1c]

Limitation [1c] recites “one or more processors.” Petitioner contends that Shiplacoff teaches this limitation in disclosing one or more processors.

Pet. 11 (citing Ex. 1003 ¶45). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1d]

Limitation [1d] recites “memory.” Petitioner contends that Shiplacoff teaches this limitation in disclosing memory. Pet. 11–12 (citing Ex. 1003 ¶46). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1e]

Limitation [1e] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1f]

Limitation [1f] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1g]

Limitation [1g] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1h]

Limitation [1h] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitation [1i]

Limitation [1i] 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). Patent Owner presents no arguments to the contrary.

We find that Shiplacoff teaches this limitation of claim 1.

Limitations [1j] and [1k]

Limitation [1j] 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.

Limitation [1k] 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.

Contentions from the Petition

Petitioner contends that Shiplacoff teaches limitation [1j] 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).

Petitioner contends that Shiplacoff teaches limitation [1k] in disclosing detecting a tap or a flick gesture that is not above the movement threshold and in response, returning from the full screen mode to the home screen. Pet. 23–24 (citing Ex. 1003 ¶¶ 60–61).

Contentions from Patent Owner's Response

Patent Owner contends that Shiplacoff does not teach using a flick in full screen mode. PO Resp. 35–37 (citing Ex. 2004 ¶¶ 67, 70). According to Patent Owner, a person of ordinary skill in the art would have viewed paragraphs 99–102 and 167 as limited to performing the flick only in card mode. *Id.* at 37 (citing Ex. 2004 ¶ 71). Patent Owner contends that a person of ordinary skill in the art would have understood paragraphs 99–102 and 167 to teach only detecting a flick while in card mode, rather than in full screen mode. *Id.* at 38 (citing Ex. 2004 ¶ 72).

Patent Owner contends that Shiplacoff does not teach a movement threshold. PO Resp. 39 (citing Ex. 2004 ¶¶ 74–75). According to Patent Owner, Shiplacoff distinguishes between a swipe up and a flick based on whether the input includes contact with an off-screen gesture area as well as the on-screen area. *Id.* at 39–40 (citing Ex. 2004 ¶¶ 75–77). Patent Owner contends that the device evaluates whether the command includes one or both of these areas. *Id.* at 41–42 (citing Ex. 2004 ¶¶ 78–80; Ex. 2003 ¶ 78 (Duarte, Appl. Serial No. 12/115,992 filed May 6, 2008, which Shiplacoff incorporates by reference (*see* Ex. 1004 ¶ 66))). According to Patent Owner, Shiplacoff's disclosure of detecting a swipe up gesture from an off-screen area onto an on-screen area does not teach the "movement threshold" as recited in claim 1.

Patent Owner contends that Shiplacoff's flicking gesture does not switch from full screen mode to the launch screen, and that a person of ordinary skill in the art would have understood that a flick input used to trigger an action in card mode would not trigger an action in a different mode. PO Resp. 43–44 (citing Ex. 2004 ¶¶ 83–86). According to Patent Owner, a person of ordinary skill in the art would not have applied a flick

gesture to manipulate elements in full screen mode. *Id.* at 45–46 (citing Ex. 2004 ¶¶ 86–87). Patent Owner contends that Shiplacoff does not teach any gesture that switches from full screen mode to launch screen. *Id.* at 47 (citing Ex. 2004 ¶ 88).

Patent Owner contends that Petitioner does not explain a reason for a person of ordinary skill in the art to use a flick to switch from full screen mode to launch mode. PO Resp. 47–48. According to Patent Owner, Shiplacoff teaches away from using a flick gesture to switch from full screen to launch screen because it reserves the entire user interface area for manipulating on screen elements. *Id.* at 49 (citing Ex. 2004 ¶ 93). Patent Owner contends that Shiplacoff already uses the flick gesture in full screen mode in disclosing a drag gesture that supports scrolling. *Id.* at 50–51 (citing Ex. 2004 ¶¶ 94–95). Patent Owner contends that a person of ordinary skill in the art would have avoided using flick to switch from full screen to launch to avoid ambiguity about whether the flick was intended for scrolling. *Id.* at 51–52 (citing Ex. 2004 ¶¶ 96–99). Patent Owner contends that Shiplacoff teaches using a swipe up to switch from full screen mode to another display mode, but not teach using a flicking gesture to switch from full screen mode to the launch screen. *Id.* at 52–54 (citing Ex. 2004 ¶¶ 99–100).

Patent Owner contends that Shiplacoff’s tap gesture does not have movement across a display as required by limitation [1k]. PO Resp. 55–56 (citing Ex. 2004 ¶ 102).

Contentions from Petitioner’s Reply

Petitioner contends that Shiplacoff teaches switching among various modes by performing a gesture. Reply 4. Petitioner contends that Shiplacoff offers several non-limiting examples of gestures that switch

display modes. *Id.* at 5 (citing Ex. 1023 ¶ 12). Petitioner contends that Shiplacoff teaches a swipe up gesture, which includes a movement parameter above a threshold, to switch from full screen mode to card mode for limitation [1j]. *Id.* Petitioner contends that it would have been obvious to utilize a gesture that is not above the movement threshold of the swipe up gesture, such as a flick, to switch from full screen mode to launch mode. *Id.* at 5–6 (citing Ex. 1023 ¶¶ 11–12, 22). Petitioner contends that Shiplacoff discloses that particular gestures and associated mode changes are non-limiting examples, and that a person of ordinary skill in the art would have used a known gesture with a distinct movement parameter such as a flick to change display modes. *Id.* at 7–8 (citing Ex. 1003 ¶¶ 52–53, 59). Petitioner contends that a person of ordinary skill in the art would have recognized from the teachings of Shiplacoff that (1) a gesture performs a change in display modes; (2) a swipe up is one example of a gesture that changes display modes; (3) other gestures can be used for mode changes; and (4) one of the other gestures is a flick. *Id.* at 9–10 (citing Ex. 1023 ¶ 13).

Petitioner contends that Shiplacoff, in a section titled “Switching Among Modes,” discloses examples of switching among various modes by performing a gesture, that in other embodiments other gestures can be used for mode changes, and that one skilled in the art will recognize that mode changes can take place in response to other types of commands, contexts, and/or environmental factors. Reply 10–11 (citing Ex. 1023 ¶¶ 14–21). Petitioner contends that Shiplacoff recognizes that the same gesture can have different outcomes depending on where, when, and how the gesture is input. *Id.* at 11–12 (citing Ex. 1023 ¶¶ 16–17). In particular, Petitioner contends that Shiplacoff discloses that a tap on a card displays the telephone application in full screen mode, whereas a tap on an icon launches an

associated application. *Id.* at 12 (citing Ex. 1023 ¶ 17). Also, Petitioner contends that Duarte distinguishes a drag scroll gesture from a flick gesture. *Id.* at 13 (citing Ex. 1023 ¶ 18). For a flick gesture, the user's finger leaves the surface of the screen before stopping movement, whereas for a drag scroll gesture the user's finger comes to rest before leaving the surface. *Id.* at 13–14 (citing Ex. 1023 ¶ 18). Petitioner contends that a person of ordinary skill in the art would have understood that Shiplacoff's device would have distinguished between flick gestures, such as a flick that starts off screen and continues on screen from a gesture that starts on screen. *Id.* at 14–15 (citing Ex. 1023 ¶ 19). Petitioner contends that Duarte also teaches that its device distinguishes a gesture performed without pressing a modifier key from the same gesture performed while the user holds down the modifier key. *Id.* at 15–16 (citing Ex. 1023 ¶¶ 20–21). Thus, according to Petitioner, Shiplacoff's gesture area, modifier key, and recognition of one or more characteristics of the gesture distinguishes whether an input is a flick or a drag. *Id.*

Petitioner contends that a person of ordinary skill in the art would have understood that a tap gesture may include some small amount of movement of a user's finger. Reply 16–19 (citing Ex. 1023 ¶¶ 24–25, 27; Ex. 1003 ¶ 80).

Contentions from Patent Owner's Sur-Reply

Patent Owner contends that the genus of other gestures does not render obvious the species required by the claim. PO Sur-Reply 5. According to Patent Owner, Shiplacoff teaches using another gesture, but not the specific gesture of a flick, to change modes. *Id.* at 5–6. Patent Owner contends that the flick is used to dismiss a card when in card mode. *Id.* at 6. Patent Owner contends that Petitioner's argument that a person of

ordinary skill in the art would have used a flick as a matter of design choice does not address Shiplacoff's teaching that full screen mode is optimized for manipulating on screen elements, whereas card mode is optimized for closing cards. *Id.* According to Patent Owner, a person of ordinary skill in the art would have recognized that the flick gesture would not function in full screen mode.

Patent Owner contends that, in full screen mode, the flick already triggers scrolling. PO Sur-Reply 7. Patent Owner concedes that Shiplacoff does not criticize, discredit, or otherwise discourage a person of ordinary skill in the art from using a flick to transition from full screen mode to launch screen mode. *Id.* Patent Owner contends, however, that a person of ordinary skill in the art would have used the flick in full screen mode to return to the home screen because it already is used for scrolling. *Id.* at 7–8.

Patent Owner contends that Shiplacoff teaches using the same gesture on different objects in the same display mode to trigger different functions, but Petitioner maps the same gesture to the same object to trigger different functions. *Id.* at 9. Patent Owner contends that the flick and the drag-scroll gestures described by Duarte have different characteristics that enable Shiplacoff's device to differentiate them, but Petitioner relies on the flick gesture to both scroll and change from full screen mode to launch mode. *Id.* at 9–10.

Patent Owner contends that modifying the flick gesture to start in a gesture area or performing the flick gesture while holding down a modifier key is not disclosed by Shiplacoff and arguments regarding this contention are not found in the Petition. *Id.* at 10–11. Patent Owner contends that Shiplacoff only describes the flick as an on screen input. *Id.* at 11. Patent Owner contends that Petitioner does not explain why a person of ordinary

skill in the art would have modified the flick gesture to start off screen or to perform the flick gesture while holding a modifier key. *Id.* at 11–12.

Patent Owner contends that a tap gesture does not include movement across the display. PO Sur-Reply 13–15.

Analysis of limitations [1j] and [1k]

We disagree with Patent Owner’s contentions that Shiplacoff does not teach using a flicking gesture to switch from full screen mode to the launch screen. *See* PO Resp. 32–38, 43–47, 52–54. Shiplacoff discloses that “user input actions can cause a switch between modes, including for example, entering a gesture.” *Id.* ¶ 126. Shiplacoff provides non-limiting embodiments and examples of switching from one mode to another using the gestures of a tap, a double tap, a swipe up, and a swipe down. *Id.* ¶¶ 124–128. Shiplacoff then teaches that “[i]n other embodiments, other gestures can be used for mode changes; for example, a multi-finger gesture such as a pinch can be used to change from one mode to another.” *Id.* ¶ 129. The only “other gestures” described by Shiplacoff that “can be used for mode changes” are flicking, dragging, and tapping and holding. *See* Reply 9 (identifying the eight gestures disclosed by Shiplacoff); Ex. 1023 ¶ 13 (citing Ex. 1004 ¶¶ 77, 84, 91, 98, 100, 104, 112, 113, 124–129, 169). Shiplacoff discloses that “[i]n one embodiment, the user can launch additional activities by returning to the launch screen” and that “[i]n one embodiment, this is performed by performing a gesture,” but does not specify the gesture. Ex. 1004 ¶ 99.

The Supreme Court has emphasized “an expansive and flexible approach” to the obviousness question, noting in particular that the 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* at 418; *see also id.* at 421 (“A person of ordinary skill is . . . a person of ordinary creativity, not an automaton.”). Patent Owner’s contention and the supporting testimony of Dr. Madisetti does not address Shiplacoff’s teaching of using a gesture, such as Shiplacoff’s flick gesture, to return to launch screen. We agree with Petitioner and Dr. Terveen in finding that Shiplacoff’s disclosure that “returning to the launch screen . . . is performed by performing a gesture” (Ex. 1004 ¶ 99) such as a flicking gesture (Ex. 1004 ¶¶ 126, 129; Ex. 1023 ¶ 13) teaches using a flicking gesture to return from home screen to launch screen. *See* Pet. 16, 22–24; Ex. 1003 ¶¶ 52–53, 59; Ex. 1023 ¶ 13; Reply 7–10. Because Dr. Terveen’s testimony is consistent with and supported by the teachings of Shiplacoff as a whole (in contrast to that of Dr. Madisetti), we credit the testimony of Dr. Terveen in finding that using a gesture to return from home screen to launch screen as taught by Shiplacoff, where the gesture is a flick gesture as taught by Shiplacoff, yields the predictable result of using a flick gesture to return from home screen to launch screen. Ex. 1023 ¶ 13; Ex. 1003 ¶¶ 52–61; *KSR*, 550 U.S. at 416.

Similarly, we disagree with Patent Owner’s contention in Sur-Reply that “broadly invoking ‘other gestures’ (a genus) does not suggest using the particular species of gesture required by the claims.” PO Sur-Reply 5–6 (citing *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1285 (Fed. Cir. 2017)). As discussed above, Shiplacoff’s only “other gestures that can be used for mode changes” (Ex. 1004 ¶ 129) not mentioned in the examples of paragraphs 124–129 are flicking, dragging, and touching and holding. We find that “the genus is so small that one of ordinary skill in the art would ‘at once envisage each member of this limited class.’” *Wasica*,

853 F.3d at 1285. We credit the testimony of Dr. Terveen in finding that performing a gesture to return from the home screen to the launch screen as taught by Shiplacoff, where the gesture is Shiplacoff's flicking gesture, "was a design step well within the grasp of a person of ordinary skill in the relevant art." *KSR*, 550 U.S. at 427; Ex. 1023 ¶ 13. We find that performing a flicking gesture in order to return from the home screen to the launch screen teaches "in accordance with a determination that the second input does not [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" as recited in limitation [1k].

We disagree with Patent Owner's contention that Shiplacoff distinguishes between gestures based on whether the gesture does or does not include contact with an off screen area rather than based on a movement threshold. PO Resp. 39–42. Patent Owner's contention relies on Shiplacoff's incorporation by reference of Duarte (Ex. 2003) which describes a device that allows a user to enter gestures in gesture area 102, or touch screen 101, as well as gestures that cross from gesture area 102 to touch screen 101 and vice versa (PO Resp. 41 (citing Ex. 2003 ¶ 59; Ex. 2004 ¶ 78)) to conclude that Duarte's disclosure of a gesture area that allows users to activate commands shows that Shiplacoff differentiates user input based on whether the input includes contact with a gesture area rather than whether the input includes a movement parameter (*id.* at 42 (citing Ex. 2003, Abstr., ¶ 72; Ex. 2004 ¶ 80)).

Patent Owner's contention and Dr. Madisetti's supporting testimony that neither Shiplacoff nor Duarte suggest distinguishing between user inputs based on a movement threshold is inconsistent with Duarte's disclosure that:

In one embodiment *a gesture performs the same function whether entered entirely within gesture area 102 (as in Fig. 4A) or entered partially in gesture area 102 and partially on screen 101*. As with Fig. 4A, the user can perform the half-swipe left gesture 402W beginning anywhere within gesture area 102. *In some embodiments, the same gesture 402W can be performed within screen 101, or beginning within screen 101 and ending in gesture area 102*, as long as the area of screen 101 in which gesture 402W is initiated does not contain an activatable object 401 (or as long as there is no ambiguity as to the function the user intends to activate).

Ex. 2003 ¶ 98. Contrary to Patent Owner’s contention, Duarte discloses entering the same gesture entirely within screen 101, entirely within area 102, or partially within area 102 and partially on screen 101 and vice versa. *Id.* We agree with Petitioner that Shiplacoff’s teachings (and, by incorporation, Duarte’s) contradict Patent Owner’s contention. *See* Reply 13–15 (citing Ex. 2003 ¶ 69 (disclosing that after performing a drag gesture, “[t]he current display scrolls by an amount proportional to the distance moved by the user’s finger”), ¶ 78 (disclosing that “[t]he movement of the object being moved . . . is relative to the motion of the user’s finger (onscreen or off”)); Ex. 1004 ¶¶ 64, 127); Ex. 2003 ¶ 98; Ex. 1023 ¶¶ 18–19.

We agree with Petitioner and the supporting testimony of Dr. Terveen that based on Shiplacoff’s teachings (and, by incorporation, Duarte’s teachings), a person of ordinary skill in the art would have understood that Shiplacoff’s device would have been able to distinguish between flick gestures depending on when, where, and how that gesture was input by a user. Reply 14 (citing Ex. 1023 ¶ 19). We agree with Petitioner that Shiplacoff teaches that when in card mode, a user can use the same tap gesture to tap on a card to switch to full screen mode, or to tap on an icon to launch an application, depending on the location of the tap on the screen.

Reply 11–12 (citing Ex. 1023 ¶¶ 16–17; Ex. 1004 ¶¶ 63–64, 98–99, Figs. 6E and 6F). We find that Petitioner’s contention and Dr. Terveen’s testimony that Shiplacoff (and, by incorporation, Duarte) teaches detecting a flick gesture that starts in area 102 or near an edge of screen 101 and continues onto screen 101, and teaches that this gesture would have been distinguishable from the same flick gesture performed well within screen 101 based on movement and location of the flick gesture. *Id.* at 14–15 (citing Ex. 1023 ¶ 19); Ex. 1004 ¶¶ 63, 98–99, 127, Figs. 6E and 6F; Ex. 2003 ¶¶ 69–72, 76–79, 98; Ex. 1023 ¶¶ 16–21.

We find that Petitioner’s contention that performing a flick gesture starting in area 102 or near an edge of screen 101 and continuing on screen 101 is timely, contrary to Patent Owner’s contention. *See* PO Sur-Reply 10–11. Petitioner does not present a new mapping. Rather, Petitioner relies on the same mapping for limitation [1k] as the Petition. Petitioner in Reply provides rebuttal argument and evidence to address Patent Owner’s contentions that Shiplacoff does not recognize a gesture using a movement threshold and does not detect a flick that crosses from area 102 to screen 101, which “accomplish[es] the function of rebuttal; to explain, repel, counteract, or disprove the evidence of the adverse party.” *Belden Inc. v. Berk-Tec LLC*, 805 F.3d 1064, 1082 (Fed. Cir. 2015). Petitioner’s contention also responds to Patent Owner’s proposed claim construction that “Limitations [1i]–[1k], [15e]–[15k], and [27d]–[27f] require a single, common contact even as the starting point of the claimed logic operations” (PO Resp. 24) by contending that the prior art teaches the disputed limitation even under Patent Owner’s proposed construction. *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1384 (Fed. Cir. 2023). We agree with Petitioner, that detecting a flick that begins in area 102 or near an edge of

screen 101 and continues on screen 101 teaches the claimed “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 a movement threshold” as recited in limitation [1k].

We disagree with Patent Owner’s contention that the Petition does not articulate why a person of ordinary skill in the art would have used Shiplacoff’s flicking gesture to switch from full screen mode to the launch screen. PO Resp. 47–49. Petitioner contends that Shiplacoff’s swipe up gesture teaches limitation [1j] by including a movement parameter above a movement threshold. Pet. 17–23. Petitioner contends that Shiplacoff teaches that a user can perform another gesture to return to the home screen. *Id.* at 23. Petitioner contends that when a gesture different from the swipe up gesture is used to return to the home screen, a person of ordinary skill would have used a flicking gesture because the flicking gesture has a different movement parameter than the swipe up gesture, namely, a movement parameter that does not meet the movement threshold. Pet. 23–24 (citing Ex. 1004 ¶¶ 99–102, 167; Ex. 1003 ¶¶ 60–61). We agree with Petitioner for the reasons given in the Petition and as discussed above. We reiterate that using a gesture to return from home screen to launch screen as taught by Shiplacoff, where the gesture is a flicking gesture as taught by Shiplacoff, yields the predictable result of using a flicking gesture to return from home screen to launch screen. Ex. 1023 ¶ 13; Ex. 1003 ¶¶ 52–61; *KSR*, 550 U.S. at 416.

We disagree with Patent Owner’s contention that Shiplacoff teaches away from using the flicking gesture to switch from full screen mode to the launch screen because, according to Patent Owner, Shiplacoff already uses the flick gesture to perform scrolling in full screen mode. PO Resp. 49–52

(citing Ex. 2004 ¶¶ 93–98). We agree with Petitioner and Dr. Terveen that the same gesture in a given mode can be assigned to different functions depending on where, when, and how the gesture is input by the user, as discussed above. Reply 11–12 (discussing Shiplacoff’s teaching of associating the same tap gesture with different functions depending on where the tap occurs), 13–14 (discussing Duarte’s teaching of associating both a drag gesture and a scrolling gesture to the same mode). Ex. 1023 ¶¶ 16–19.

We agree with Petitioner and Dr. Terveen, that based on the teachings of Shiplacoff (and, by incorporation, Duarte), a person of ordinary skill in the art would have recognized that a flick started in area 102 or near an edge of screen 101 and continuing onto screen 101 would be distinguished from a flick entirely within screen 101 based on location, and would perform a different function. Ex. 1023 ¶¶ 18–19. We also agree with Petitioner and Dr. Terveen, that Duarte teaches associating a gesture with one function when a modifier key is not pressed, and associating the same gesture with a different function when the modifier key is pressed, such that a flick performed when the key is not pressed would perform one function such as scrolling and a flick performed when the key is pressed would perform another, such as changing the display mode. Reply 15 (citing Ex. 2003 ¶ 64; Ex. 1023 ¶ 20). We agree with Petitioner that Shiplacoff does not teach away from using a flicking gesture to change from full screen mode to home screen because it “does not criticize, discredit, or otherwise discourage investigation into the invention claimed.” Reply 10 (quoting *Depuy Spine*, 567 F.3d at 1327).

Similarly, we find that Petitioner’s contention regarding the same gesture performed when pressing or not pressing a modifier key (Reply 15–

16 (citing Ex. 1023 ¶¶ 20–21), along with Petitioner’s contentions regarding the flick gesture started in area 102 or near an edge of screen 101 and continuing onto screen 101 (Reply 14–15 (citing Ex. 1023 ¶ 19), are timely because they accomplish the function of rebuttal; to explain, repel, counteract, or disprove the evidence supporting Patent Owner’s teaching away arguments. Further, Petitioner’s contentions are timely because they address Patent Owner’s proposed claim construction as discussed above. Even if we were to agree with Patent Owner that the tap gesture does not teach limitation [1k], we find that the swipe gesture of Shiplacoff teaches limitation [1j] and the flicking gesture of Shiplacoff teaches limitation [1k].

Conclusion for claim 1

We find that the Petition shows by a preponderance of the evidence, under either Petitioner’s or Patent Owner’s proposed claim construction, that Shiplacoff renders obvious claim 1.

3. Independent claims 15 and 27

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* PO Resp. 32, 39, 42, 55. We disagree with Patent Owner’s contentions as discussed above in our analysis of claim 1. We find that Shiplacoff teaches all limitations of claims 15 and 27 for the reasons given in the Petition and as discussed above in our analysis of claim 1.

Patent Owner presents an additional argument with respect to limitation [27f] of independent claim 27 not presented for claim 1. PO Resp. 56–57.

Limitation [27f] recites

in response to detecting the second input and in accordance with a determination that the second input meets the first one or more

criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold and that the second input does not meet the second one or more criteria that is met when the second input is detected to include the duration parameter that is above the duration threshold, replace the user interface of the application with the home screen including the icon that corresponds to the application.

For limitation [27f], the Petition, in addition to relying on the Petition's contentions with respect to claim 1, also presents an alternative contention that Shiplacoff teaches that various mechanisms can be provided for switching modes. *Id.* at 39–40 (citing Ex. 1004 ¶¶ 77, 124; Ex. 1003 ¶ 85). Petitioner contends that it would have been obvious to a person of ordinary skill in the art that, as a matter of design choice, the gesture to switch back to the home screen would have involved a gesture that is different from the slide up gesture, and would have involved movement beyond a movement threshold but would not require a duration of the gesture beyond a duration of the threshold. *Id.* at 40.

Patent Owner contends that for Petitioner's alternative theory for limitation [27f], neither the Petition nor Dr. Terveen explains why a person of ordinary skill in the art would have chosen a gesture that involved movement beyond a movement threshold, but did not involve a duration beyond a duration threshold as required by limitation [27f]. PO Resp. 56–57.

Patent Owner does not address the Petition's first contention that when length of Shiplacoff's flicking gesture satisfies the movement threshold but does not satisfy the duration threshold, the gesture would result in returning the display to launch mode. Even if we were to agree with Patent Owner that Petitioner's alternative theory does not explain how Shiplacoff teaches limitation [27f], we rely on the testimony of Dr. Terveen

in finding that Shiplacoff teaches a flicking gesture that meets a movement threshold and does not meet a duration threshold. Ex. 1003 ¶¶ 83–84.

We find that the Petition shows, by a preponderance of the evidence, that Shiplacoff renders claims 15 and 27 obvious.

4. Dependent Claims 2–4, 8–14, 16–18, 22–26, 28–30, and 34–39

Petitioner challenges dependent claims 2–4, 8–14, 16–18, 22–26, 28–30, and 34–39 as unpatentable over Shiplacoff. *See* Pet. 25–41.

Dependent claim 2 recites “the detecting the second input by the second contact that includes movement across the display in the direction, includes detecting the second input by the second contact that includes movement that starts at an edge of the display.”

The Petition contends that Shiplacoff’s swipe up gesture area 102 provides a touch sensitive control area extending beyond the edges of the screen 101, where the swipe up gesture begins in gesture area 102 and extends onto screen 101. Pet. 25–26 (citing Ex. 1004 ¶¶ 64, 66, 127, Fig. 2). The Petition contends that it would have been obvious to a person of ordinary skill in the art that, at least part of the swipe up gesture would have included “movement that starts at an edge of the display” as claimed. *Id.* at 25 (citing Ex. 1004 ¶ 62).

Patent Owner contends that for dependent claims 2, 16, and 28, Petitioner maps the claimed “second input” to Shiplacoff’s swipe up gesture, but does not map the “second input” to Shiplacoff’s flick gesture. PO Resp. 65. Patent Owner also contends that Petitioner fails to demonstrate that Shiplacoff’s flick gesture satisfies the requirements of any limitation of claim 1 for the reasons given in Patent Owner’s contentions regarding claim 1, and that Shiplacoff’s flick gesture does not teach “movement that starts at an edge of the display.” *Id.* at 65–66.

Petitioner contends that the Petition explains that “it would have been obvious, if not understood, to use a different gesture, such as a tap or flick, that does not have the same movement parameters”—and “duration parameters”—as “those of a swipe up gesture.” Reply 26 (citing Pet. 23–24, 36–39). Petitioner contends that both grounds simply argue that it would have been obvious to change the “movement parameters” and “duration parameters” of the different gesture that transitions from full screen mode to the launcher screen without requiring or relying on a change from the aspects of the swipe up gesture that would otherwise meet dependent claim 2. *Id.* (citing Ex. 1023 ¶¶ 39–42). Petitioner contends that, for the same reason the swipe up gesture meets dependent claim 2, so too would the different gesture described with respect to limitations [1k], [15g], and [27f]. *Id.*

Patent Owner contends that demonstrating that one particular gesture satisfies the additional limitations of claim 2 is not sufficient to demonstrate that a different gesture does so. PO Sur-Reply 23. Patent Owner contends that Petitioner’s additional “argument regarding these dependent claims is effectively a rehash of its ‘other gestures’ argument.” *Id.* at 24. Patent Owner contends that Petitioner has not identified any reason why a person of ordinary skill in the art would have selected a particular gesture that satisfies the claim from the many potential gestures. *Id.*

We agree with Petitioner for the reasons given by Petitioner. In particular, we credit the testimony of Dr. Terveen in finding that the Petition maps the swipe up gesture and the flicking gesture of Shiplacoff to “the second input” of limitations [1j] and [1k], and that these same gestures meet “the second input” of the dependent claims as well. Ex. 1023 ¶¶ 39–40; Ex. 1003 ¶¶ 61, 79–84. We credit the testimony of Dr. Terveen in finding that

when the swipe up gesture and the flicking gesture start at gesture area 102 and continue onto screen 101, each gesture includes movement that starts at an edge of a display as claimed. Ex. 1023 ¶¶ 19, 42. We find that a person of ordinary skill in the art would have used Shiplacoff's swipe up and flicking gestures to change from one mode to another for the reasons discussed in our analysis of claim 1 above. We find that Shiplacoff teaches the limitations of claims 2, 16, and 28.

Patent Owner presents similar arguments for dependent claims 3, 17, and 29. PO Resp. 65–66. We disagree with Patent Owner for the reasons discussed above. We credit the testimony of Dr. Terveen in finding that Shiplacoff teaches the limitations of claims 3, 17, and 29. Ex. 1003 ¶¶ 54–63; Ex. 1023 ¶¶ 39–40, 42.

Patent Owner does not separately argue against Petitioner's showing with respect to dependent claims 4, 8–14, 18, 22–26, 30, and 34–39. See PO Resp. 64–66. We find that Shiplacoff teaches the limitations of claims 4, 8–14, 18, 22–26, 30, and 34–39 for the reasons given in the Petition. Pet. 25–41.

We find that the Petition shows, by a preponderance of the evidence, that Shiplacoff renders claims 2–4, 8–14, 16–18, 22–26, 28–30, and 34–39 obvious.

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

Reasons from the Petition

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.

Contentions from Patent Owner’s Response

Patent Owner contends that Petitioner has not shown that a person of ordinary skill in the art would have modified Shiplacoff to use Nan’s edge gesture, because doing so would render Shiplacoff’s gesture area inoperable. PO Resp. 60. Patent Owner contends that Shiplacoff teaches that its device distinguishes between gestures and other touch inputs based on whether the touch input includes contact with an off screen gesture area and crosses from the off screen area onto the screen area. PO Resp. 60–62 (citing Ex. 2004 ¶¶ 103–106. Patent Owner contends that if Shiplacoff were modified to include Nan’s edge gesture, then on screen and off screen touch inputs would no longer be differentiated from each other, which renders

Shiplacoff's gesture area inoperable for its intended purpose. *Id.* at 62–63 (citing Ex. 2004 ¶¶ 106–107). Patent Owner contends that Duarte teaches away from using Nan's edge gestures because Duarte discloses that the device ignores a gap between off screen gesture area 102 and touch screen 101. *Id.* at 63–64 (citing Ex. 2004 ¶ 107).

Contentions from Petitioner's Reply

Petitioner contends that the combination of Shiplacoff and Nan complements Shiplacoff's intended purpose. Reply 23. Petitioner contends that gesture area 102 is not a required part of Shiplacoff's device, and also is not necessary for switching between modes. *Id.* (citing Ex 1023 ¶ 35). Petitioner contends that because Shiplacoff discloses gestures that do not use gesture area 102, it discloses embodiments that would not be rendered inoperable through removal of the gesture area. *Id.* at 24 (citing Ex. 1023 ¶ 36); *see id.* at 24–25 (citing Ex. 1023 ¶ 37). Petitioner contends that Nan teaches that an edge can be located beyond the display of the touchscreen, therefore, Nan's teachings regarding how to differentiate gestures are complementary to Shiplacoff's teachings regarding gestures that begin in gesture area 102. *Id.* at 25 (citing Ex. 1023 ¶ 38).

Contentions from Patent Owner's Sur-Reply

Patent Owner contends that the Petition did not propose removing gesture area 102 as part of the combination, therefore, Petitioner's argument in Reply is untimely. PO Sur-Reply 19–20. Patent Owner contends that even if gesture area 102 of Shiplacoff could have been omitted, a person of ordinary skill in the art would not have done so because the gesture area enables touch commands performed partially or entirely within gesture area 102. *Id.* at 20–21. Patent Owner contends that Shiplacoff's gesture area is an off screen area, and Nan's off screen area is treated as part of the edge of

the screen. *Id.* at 21–22. Patent Owner contends that Nan’s edge based method does not allow for Shiplacoff’s off screen/on screen distinction. *Id.* at 22. Patent Owner contends that substituting Nan’s edge gestures for Shiplacoff’s gestures results in eliminating Shiplacoff’s gesture area. *Id.* at 22–23.

Our Analysis

We disagree with Patent Owner’s contentions that the teachings of Shiplacoff and Nan are incompatible and that combining the teachings of Shiplacoff and Nan would have rendered Shiplacoff’s off screen gesture area inoperable. PO Resp. 62–64; PO Sur-Reply 19–23. Patent Owner’s contentions are inconsistent with Shiplacoff’s disclosure that “the present invention can be implemented on any electronic device” (Ex. 1004 ¶ 61), the “present invention can be implemented . . . in any type of device having a touch sensitive screen and is not limited to devices having the listed functionality” (*id.* ¶ 65), “the particular layout shown in FIG. 1 is merely exemplary and is not intended to be restrictive of the scope of the claimed invention” (*id.*), and “the particular division of functionality between the various system components described herein is merely exemplary, and not mandatory; . . . functions performed by multiple components may instead be performed by a single component” (*id.* ¶ 177).

We reiterate that, contrary to Patent Owner’s contention, Shiplacoff’s gestures can be entered entirely within gesture area 102, partially in gesture area 102 and partially on screen 101, entirely within screen 101, or partially on screen 101 and partially in gesture area 102, as discussed above in our analysis of ground 1. Ex. 2003 ¶ 98. We credit the testimony of Dr. Terveen in finding that implementing Shiplacoff’s device in any type of device having a touch sensitive screen such as a device that has a single

touch sensitive screen rather than multiple touch sensitive components to perform touch sensitive functions as disclosed by Shiplacoff would not have rendered the device inoperable. Ex. 1023 ¶¶ 34–37; *see* Reply 23–25; Ex. 1004 ¶¶ 61, 65, 177.

Patent Owner’s contentions are also inconsistent with Nan’s disclosure that “[i]n some instances, an edge may extend beyond an edge of the display or a screen when an input mechanism is able to receive a gesture portion beyond the display or screen” (Ex. 1005, 4:44–47), that “[i]n some cases, the gesture is received off of or proximate to a physical edge of the display” (*id.* at 4:24–28), and that “[g]esture handler 128, for example, can determine the later point of the gesture based on the later point being received a preset distance from the edge or the start point, such as past edge limit 410 for edge 402 or twenty pixels from start point 418, all of FIG. 4” (*id.* at 5:29–33). We credit the testimony of Dr. Terveen in finding that a person of ordinary skill in the art would have recognized that Shiplacoff’s touch sensitive gesture area 102 “extending beyond the edges of touch-sensitive screen 101” (Ex. 1004 ¶ 66) and Nan’s touch sensitive area “beyond an edge of the display” (Ex. 1005, 4:44–47) describe the same area of a device. Ex. 1023 ¶ 38.

Patent Owner’s arguments to the contrary are based on Patent Owner’s contention that Shiplacoff would no longer detect gestures “provided by the off-screen/on-screen distinction that [Shiplacoff’s] ‘gesture area’ facilitates.” PO Sur-Reply 22. Patent Owner’s contention that Shiplacoff requires an off-screen/on-screen distinction to identify gestures is inconsistent with the teachings of Shiplacoff and, by incorporation, Duarte as discussed above. *See* Ex. 2003 ¶ 98. We agree with Petitioner and Dr. Terveen that receiving gestures in the touch sensitive area beyond the

edge of the touch sensitive display as taught by both Shiplacoff and Nan would have drawn a person of ordinary skill toward combining the teachings of Shiplacoff and Nan, because the purpose of Shiplacoff's gesture area is the same as the purpose of Nan's touch sensitive area that extends beyond the edge of the display screen. Ex. 1023 ¶ 38; Reply 25. We credit the testimony of Dr. Terveen in finding that implementing Nan's teachings into Shiplacoff's system through programming efforts would have been well within the knowledge and capabilities of a person of ordinary skill in the art. Ex. 1023 ¶ 37; Ex. 1003 ¶ 36.

We find that Petitioner has shown a reason to use the edge gestures of Nan to switch from one of Shiplacoff's display screens to another. In particular, we agree that combining Shiplacoff's device that uses gestures to change display modes with Nan's technique of using edge gestures to change display modes yields the predictable result of using edge gestures to change display modes. Pet. 43; Ex. 1003 ¶ 34. We agree that a person of ordinary skill in the art would have used Nan's edge gestures to change display screens as taught by Shiplacoff for the benefits of avoiding latency and providing more efficient and less disruptive use of real estate as taught by Nan. Pet. 43–44; Ex. 1003 ¶ 35; Ex. 1023 ¶¶ 34–38.

3. Independent claim 1

Contentions from the Petition

Petitioner challenges claim 1 as unpatentable over the combination of Shiplacoff and Nan. Pet. 41–47. Petitioner contends that the preamble and limitations [1a] through [1i] are taught by Shiplacoff as shown in the Petition's analysis of ground 1. *Id.* at 46. In particular, Petitioner contends that “[a]ny limitations not specifically addressed below are obvious in view of SNC for the same reasons noted above in Ground 1.” *Id.*

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).

Contentions from Patent Owner’s Response

For ground 2, Patent Owner relies on arguments similar to those presented for ground 1 in contending that the combination does not teach limitation [1k]. PO Resp. 58–60. Patent Owner also contends that while the Petition address limitation [1j] in ground 2, the Petition does not map limitation [1k] to Nan. *Id.* at 59. In particular, Patent Owner contends that the Petition does not mention Shiplacoff’s flicking gesture mentioned in ground 1. *Id.* at 60.

Contentions from Petitioner’s Reply

Petitioner contends that the Petition explains how the combination of Shiplacoff and Nan would have rendered limitations [1i]–[1k] obvious. Reply 19–20 (citing Pet. 46–47). Petitioner contends that the Petition cited Nan’s disclosure with respect to figure 8, which teaches presenting one type

of interface in response to a relatively short single finger gesture, and presenting a second type of interface in response to a relatively long single finger gesture. *Id.* at 20–21 (citing Ex. 1023 ¶¶ 29–30). Petitioner contends that the Petition explains that Nan’s relatively long gesture—which meets the claimed movement threshold—corresponds to limitation [1j], and contends that a shorter gesture that does not meet the movement threshold, such as Nan’s relatively short gesture, corresponds to limitation [1k]. *Id.* at 22 (citing Pet. 23–24, 46–47; Ex. 1023 ¶ 32). Petitioner contends that the Petition explains that Nan discloses that a gesture handler determines a length of a gesture and determines a corresponding user interface, and that a person of ordinary skill in the art would have applied the teachings of Nan to Shiplacoff such that Shiplacoff’s system can implement Nan’s edge gestures. *Id.* at 22–23 (citing Pet. 43; Ex. 1023 ¶ 33).

Contentions from Patent Owner’s Sur-Reply

Patent Owner contends that the Petition does not rely on Nan’s relatively short finger gesture to meet limitation [1k]. PO Sur-Reply 15–16. Patent Owner contends that the Petition only discusses using Nan’s edge gesture to substitute the swipe up gesture in Shiplacoff alone but Petitioner’s mapping of the second input of limitation [1k] to Shiplacoff’s flick gesture remains unchanged. *Id.* at 16–17. Patent Owner concludes that Petitioner’s mapping of limitations [1j] and [1k] to column 7, lines 9 through 55 of Nan is untimely. *Id.* at 17. Patent Owner also contends that although the Decision to Institute credited the cited portion of Nan as teaching that a relatively short single-finger gesture and a relatively long single-finger gesture determine which screen to display, neither this ground nor this evidence were proposed in the Petition. *Id.* at 18–19.

Our Analysis

We disagree with Patent Owner’s contention that because Shiplacoff’s swipe up gesture and flicking gesture do not teach a second input that includes a movement parameter that is above or not above a movement threshold, the combination of Shiplacoff and Nan does not teach these limitations as recited in limitation [1j] and [1k]. *See* PO Resp. 57–59. To the contrary, Shiplacoff alone teaches limitations [1j] and [1k] as discussed in our analysis of ground 1. Because we find that Shiplacoff teaches all limitations of claim 1, we find that the combination of Shiplacoff and Nan teaches all limitations of claim 1.

Further, we find that the Petition shows how combination teaches limitations [1j] and [1k], and in particular, that the Petition maps Shiplacoff’s relatively long swipe up gesture to the second input of limitation [1j] and maps Shiplacoff’s relatively short flick gesture to the second input of limitation [1k]. *Id.* at 58; Pet. 17–24. The Petition states that “[a]ny limitations not specifically addressed below are obvious . . . for the same reasons noted above in Ground 1,” and that “[t]o the extent . . . that Shiplacoff does not disclose and render obvious a ‘movement threshold’ . . . (features [1j], [1k]), the edge gesture” of Nan does so. *Id.* at 46. Thus, the Petition relies on the swipe up and flicking gestures to teach the claimed second input “for the same reasons noted above in Ground 1,” and relies on Nan to teach the claimed movement threshold. *Id.* Contrary to Patent Owner’s contention, the Petition relies on Shiplacoff to teach the limitations not specifically address in ground 2, and relies on Nan to explicitly disclose what is already implicitly taught by Shiplacoff, namely, that a person of ordinary skill in the art would have used a movement threshold to detect Shiplacoff’s relatively longer swipe up gesture and Shiplacoff’s relatively

shorter flicking gesture and present a user interface based on the length of the gestures as suggested by Shiplacoff and as explicitly disclosed by Nan. Pet. 46–47 (citing Ex. 1005, Fig. 8, 7:9–55).

The Petition’s contentions are supported by the teachings of the prior art. Shiplacoff’s swipe up gesture teaches the “second input” of limitation [1j] and Shiplacoff’s flick gesture teaches the “second input” of limitation [1k] as discussed in our analysis of ground 1. *See* Pet. 17–24. The portion of Nan relied on in the Petition discloses that “[b]lock 804 determines which interface to present based on one or more factors of the gesture” such as the “length of the gesture.” Ex. 1005, 7:30–32. In particular, the portion of Nan relied on in the Petition discloses presenting one “interface in response to a relatively short single-finger gesture” and presenting a second interface “in response to [a] relatively long single-finger gesture.” *Id.* at 7:38–44.

Patent Owner does not disagree that the portion of Nan relied on in the Petition and relied on by Dr. Terveen explicitly discloses using a movement threshold to detect relatively long and short gestures and determine which user interface to present based on the length of the gesture. Rather, Patent Owner’s contends that because the Petition does not quote the portion of Nan relied on in the Petition, the Petition does not rely on a relatively short finger gesture such as Shiplacoff’s flicking gesture to teach the second input of limitation [1k] and that Petitioner’s quote from Nan and correlation of Nan’s short gesture with Shiplacoff’s flicking gesture in Reply is untimely. PO Resp. 57–59; PO Sur-Reply 15–17.

We disagree with Patent Owner. We find that the Petition maps the movement threshold of limitations [1j] and [1k] to Nan’s teaching of a movement threshold that distinguishes long and short gestures, and that Petitioner’s reply arguments are timely. Pet. 17–24, 46–47; Reply 19–23

(citing Ex. 1023 ¶¶ 29–33). We reiterate that the Petition contends that “[t]o the extent Patent Owner argues that Shiplacoff does not disclose and render obvious a ‘movement threshold’ and related features such as ‘when the second input is detected to include the movement parameter that is above the movement threshold’ (features [1j], [1k]), the edge gesture used [in the combination of Shiplacoff and Nan] (that would substitute the swipe up gesture in Shiplacoff alone) renders these features obvious.” Pet. 46; *see id.* at 47. We find that the Petition does in fact argue that Shiplacoff’s long and short gestures combined with Nan’s “movement threshold” that detects long and short gestures renders limitations [1j] and [1k] obvious. *Id.* at 46–47 (citing Ex. 1005, 7:9–55); *see id.* at 42–43 (citing Ex. 1005, 7:9–46 (discussing Nan’s disclosure of enabling edge gestures and determining an interface to present based on some factor of the gesture, such as length)); Ex. 1003 ¶¶ 34–39, 88–89; Ex. 1023 ¶¶ 28–33. We also agree that Petitioner’s responsive arguments in Reply are timely.

Patent Owner contends that although the Decision to Institute credited the cited portion of Nan as teaching that a relatively short single-finger gesture and a relatively long single-finger gesture determine which screen to display, neither this ground nor this evidence were proposed in the Petition. PO Sur-Reply 18–19. We disagree with Patent Owner and find that both this ground and this evidence were presented in the Petition as discussed above.

We agree with Petitioner that detecting the swipe up gesture and the flick gesture of Shiplacoff using the movement threshold taught by Nan yields the predictable result of presenting an interface to a user based on the length of the gesture as taught by Nan. Pet. 43; Ex. 1003 ¶¶ 34, 89. We also agree with Petitioner that a person of ordinary skill in the art would have

applied Nan's technique for detecting gestures using a movement threshold in order to detect gestures in Shiplacoff's device for the benefits of avoiding latency and provide efficient and less disruptive real estate usage. Pet. 43–44; Ex. 1003 ¶¶ 35, 89. We find that the Petition shows by a preponderance of the evidence that the combination of Shiplacoff and Nan renders claim 1 obvious.

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

For the remaining claims of ground 2, Patent Owner relies on arguments presented for claim 1 or for ground 1 which we find unpersuasive. *See* PO Resp. 57–60, 64–66. We find that the combination of Shiplacoff and Nan teaches the limitations of claims 2–4, 8–18, 22–30, and 34–39 for the reasons given in the Petition. We find that the Petition shows by a preponderance of evidence that the combination of Shiplacoff and Nan renders claims 2–4, 8–18, 22–30, and 34–39 obvious.

X. CONCLUSION

In summary, we determine that a preponderance of the evidence establishes that claims 1–4, 8–18, 22–30, and 34–39 are unpatentable, as shown in the following table:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–4, 8–18, 22–30, and 34–39	103(a)	Shiplacoff	1–4, 8–18, 22–30, and 34–39	
1–4, 8–18, 22–30, and 34–39	103(a)	Shiplacoff, Nan	1–4, 8–18, 22–30, and 34–39	

XI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–4, 8–18, 22–30, and 34–39 of the '578 patent have been proven by a preponderance of evidence to be unpatentable; and

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

IPR2024-01084
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FOR PETITIONER:

W. Karl Renner
David Holt
Usman Khan
FISH & RICHARDSON P.C.
axf-ptab@fr.com
dth@fr.com
khan@fr.com

FOR PATENT OWNER:

Eagle Robinson
Daniel Leventhal
Chad Wallis
NORTON ROSE FULBRIGHT US LLP
eagle.robinson@nortonrosefulbright.com
daniel.leventhal@nortonrosefulbright.com
chad.wallis@nortonrosefulbright.com