

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-01083
Patent 10,642,413 B1

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

Opinion concurring filed by *Administrative Patent Judge* FENICK

SMITH, *Administrative Patent Judge*.

JUDGMENT
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 1–3, 7, 9, 10, and 101 of U.S. Patent No. 10,642,413 B1 (Ex. 1001, “the ’413 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 12, “PO Resp.”) pursuant to 35 U.S.C. § 313. Petitioner filed a Reply (Paper 18, “Reply”) and Patent Owner filed a Sur-Reply (Paper 26, “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 1–3, 7, 9, 10, and 101 of the ’413 patent. We determine Petitioner has shown by a preponderance of the evidence that claims 1–3, 7, 9, 10, and 101 are unpatentable.

II. REAL PARTIES-IN-INTEREST

Petitioner identifies itself (Apple, Inc.) as its sole real party-in-interest. Pet. 84. Patent Owner identifies itself (Smith Interface Technologies, LLC) as its sole real party-in-interest. Paper 3, 1.

III. RELATED MATTERS

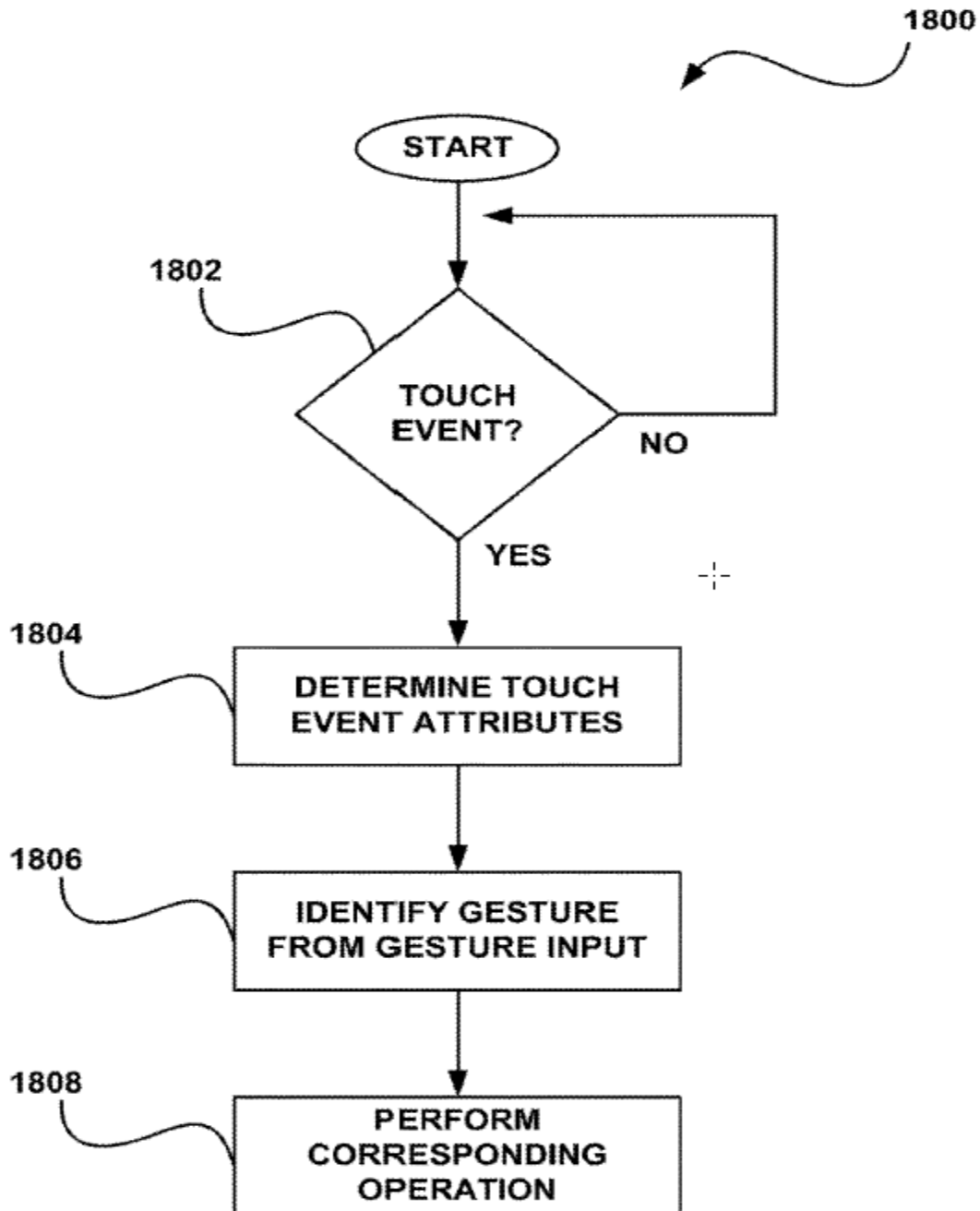
The Petition and Patent Owner state that the ’413 patent is the subject of the following proceeding:

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

Pet. 84; Paper 3, 1.

IV. THE '413 PATENT

The '413 patent relates to a gesture-equipped touch screen. Ex. 1001, Code (54). The touch screen displays a graphical user interface, detects a first gesture that begins at an edge of the touch screen and moves inward, and in response, displays a menu. *Id.* at Abstr. Figure 18 shows method 1800 for utilizing gestures and is reproduced below. *Id.* at 56:53–54.



As shown in figure 18, the method determines whether a touch event has occurred at 1802. Ex. 1001, 56:61–62. If a touch event has occurred, the method determines touch event attributes at 1804. *Id.* at 56:63–65. Touch event attributes refer to measurable aspects of the user interaction which resulted in the touch event, such as touch state, contact area, contact point, or any other measurable aspect of user interaction. *Id.* at 53:57–63. Then, the method identifies the gesture from the gesture input at 1806. *Id.* at 56:66–67. Some gestures may be identified solely from initial touch event attributes. *Id.* at 57:15–16. Other gestures may only be identified after the gesture has been performed for some time. *Id.* at 57:16–18. Once the gesture has been identified, the method performs the corresponding operation at 1808. *Id.* at 57:38–39.

One gesture is a pinch slide gesture, which begins near an edge of a display then moves inward, and causes a menu to slide in from that edge of the display. Ex. 1001, 67:30–36. Different menus are associated with each edge of the display. *Id.* at 67:38–39. A menu is closed, or slid back out of view, by using a pinch slide to pull it out a bit farther, then releasing it, similar to rolling up a window shade. *Id.* at 67:39–42. The gesture may have a magnitude, such as a length. *Id.* at 61:31–35.

The user interface may be a 3D layered user interface in which displayed objects may exist in one of a plurality of layers. Ex. 1001, 68:41–44. Alternatively, the 3D layered surface may be implemented in a device having a single layer display through the use of virtual display layers. *Id.* at 69:4–6. A virtual display layer refers to a collection of display elements which have all been assigned the same apparent depth within the 3D layered user interface. *Id.* at 69:6–9. Virtual display layers give the appearance of depth through the use of 3D depth cues. *Id.* at 69:25–27. A 3D depth cue

refers to an effect or operation which gives a visual indication of simulated depth. *Id.* at 69:27–30. An example of a depth cue is a blur operation, such that layers located at successively greater depths appear blurrier than those closer to the user. *Id.* at 69:30–33.

V. ILLUSTRATIVE CLAIM

Claims 1 and 101 are independent, and claims 2, 3, 7, 9, and 10 depend directly or indirectly from claim 1. Ex. 1001, 95:42–97:3, 112:37–113:29. Challenged claim 1 of the '413 patent is reproduced below using Petitioner's notation (Pet. v–vii) and recites:

[1.a] An electronic device, comprising:
a display;
a touch interface;
one or more processors;
memory; and

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,

[1.b] the one or more programs including instructions for: displaying, utilizing the display, a graphical user interface;

[1.c] when the graphical user interface is displayed, detecting, utilizing the touch interface, a first gesture that begins in connection with a first edge of the display and moves inward;

[1.d.i] in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in and including one or more first menu items, and

[1.d.ii] blurring at least a portion of the graphical user interface such that a magnitude of the blurring of the at least portion of the graphical user interface progressively increases as a function of an increase in a magnitude of the first gesture being detected;

[1.e.i] when the first menu is displayed including the one or more first menu items: detecting, utilizing the touch interface, a first duration of contact on at least one of the one or more first menu items,

[1.e.ii] in response to the first duration of contact on the at least one of the one or more first menu items being detected to not surpass a threshold, performing a first operation, and

[1.e.iii] in response to the first duration of contact on the at least one of the one or more first menu items being detected to surpass the threshold, performing a second operation;

[1.f] when the graphical user interface is displayed, detecting, utilizing the touch interface, a second gesture that begins in connection with a second edge of the display and moves inward;

[1.g] in response to the detection of the second gesture that begins in connection with the second edge and moves inward, displaying, utilizing the display, a second menu including one or more second menu items;

[1.h.i] when the second menu is displayed including the one or more second menu items: detecting, utilizing the touch interface, a selection contact on at least one of the one or more second menu items, and

[1.h.ii] in response to the selection contact being detected on the at least one of the one or more second menu items, performing a third operation;

[1.i] wherein the electronic device is configured such that the graphical user interface is displayed in at least one virtual display layer, and at least one of the first menu or the second menu is displayed in at least one other virtual display layer.

VI. ASSERTED GROUND

Petitioner asserts that claims 1–3, 7, 9, 10, and 101 of the '413 patent are unpatentable on the following ground.

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1–3, 7, 9, 10, 101	103(a)	Ahn ² , Chaudhri ³ , Hinckley ⁴

VII. LEVEL OF ORDINARY SKILL

Petitioner contends that a person of ordinary skill in the art would have a Bachelor of Science 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 ¶¶ 30–31). Dr. Terveen testifies that “[s]uch experience could be obtained through

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because the '413 patent's effective filing date is before the March 16, 2013 effective date of the applicable AIA amendment, the pre-AIA version of § 103 applies. Although Petitioner contends that the '413 patent is not entitled to the August 5, 2011 filing date of one of the provisional applications, Petitioner does not contend that the '413 patent is not entitled to the filing date of the other provisional applications filed in December 2011, or of the utility applications filed on Aug. 3, 2012 and Mar. 16, 2016. Pet. 2. On this record, we determine that the '413 patent is entitled to at least the filing date of Application No. 13/567,004 filed on Aug. 3, 2012. We would reach the same outcome, however, under the AIA version of § 103.

² Ex. 1004, Ahn, US Patent Application Publication No. 2008/0207188 A1, published Aug. 28, 2008.

³ Ex. 1005, Chaudhri, US Patent Application Publication No. 2007/0150842 A1, published June 28, 2007.

⁴ Ex. 1006, Hinckley, US Patent Application Publication No. 2011/0209093 A1, published Aug. 25, 2011.

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 ¶ 30. 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 response.” PO Resp. 9. Patent Owner’s expert, Dr. Rosenberg, testifies that “[f]or purposes of this declaration, my opinions are therefore provided from the perspective of the POSITA described in paragraph 30 of Dr. Terveen’s declaration (EX1003) as of August 5, 2011.” Ex. 2006 ¶ 34.

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). 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). 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”).

Limitation [1.e.ii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to not surpass a threshold, performing a first operation.” Limitation [1.e.iii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to surpass the threshold, performing a second operation.” Claim 101 recites similar limitations.

Patent Owner contends that limitations [1.e.ii] and [1.e.iii] (and the similar limitations in claim 101) recite two scenarios that occur in response to a single contact either surpassing or not surpassing a threshold. PO Resp. 11. Patent Owner contends that these two limitations “collectively describe logical functions/steps to process instances of user input on a touch screen that begin from a common starting point—the start of a ‘first duration of contact.’” *Id.* Patent Owner “acknowledges Limitation [1.e.ii] will not be met during the same instance of a user touch as Limitation [1.e.iii] (and vice versa).” *Id.* at 12.

Petitioner contends that Patent Owner “read[s] an additional, unclaimed limitation into the claims” by arguing “that each of these ‘instances’ of contact must ‘begin from a common starting point—the start of ‘a first duration of contact.’” Reply 3 (quoting PO Resp. 11). Petitioner also contends that the scope of limitations [1.e.ii] and [1.e.iii] encompasses two different instances of contact on two different menu items, where the duration of one instance does not surpass a threshold and the duration of the other instance does. *Id.* at 4–7.

In contrast, Patent Owner contends that the claim term “at least one” modifies the “first menu items,” not the first duration of contact. PO Sur-Reply 2. Patent Owner contends that “the contact being on the same menu item(s) is precisely what the claim requires.” *Id.* at 3.

We do not need to resolve whether Patent Owner’s construction or Petitioner’s construction is correct, because even under Patent Owner’s construction we find that the prior art combination teaches limitations [1.e.ii] and [1.e.iii]. as discussed below.

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 1–3, 7, 9, 10, and 101 as Obvious based on Ahn, Chaudhri, and Hinkley

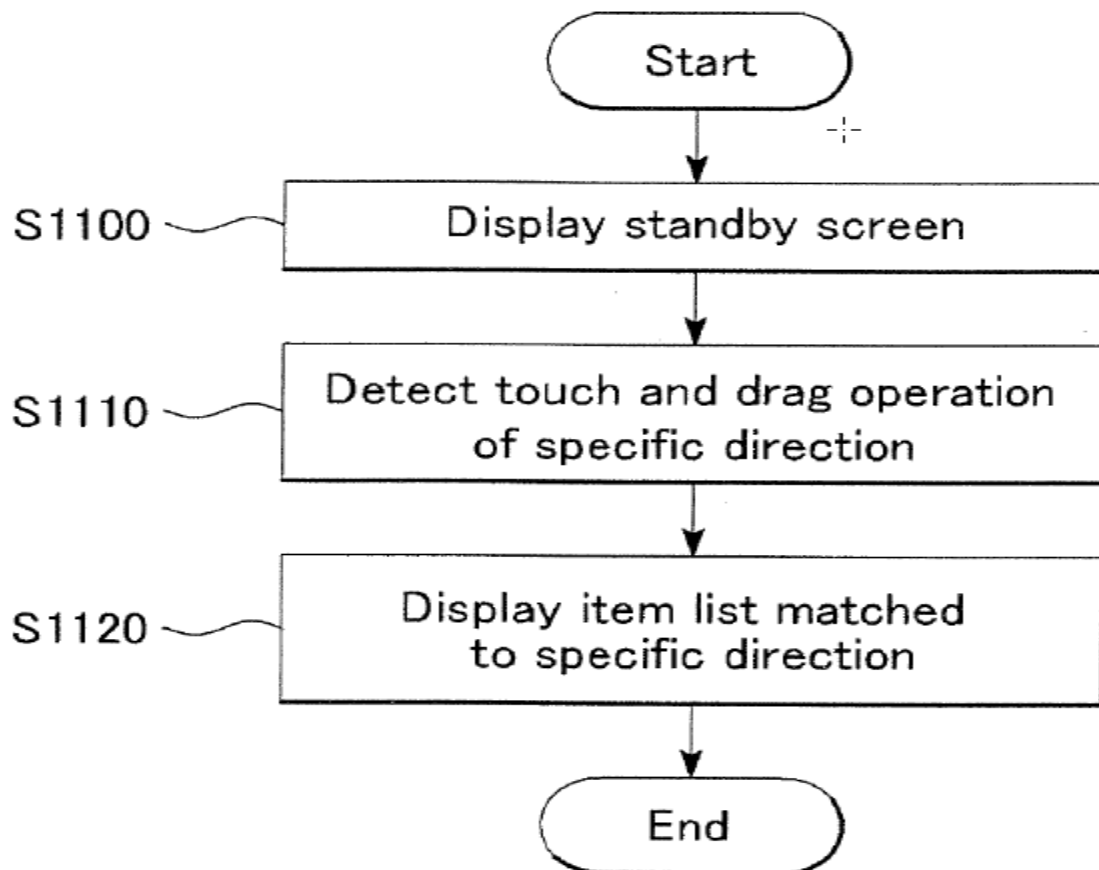
1. Ahn – Exhibit 1004

Ahn discloses a method of displaying a menu in a mobile terminal by selecting a specific direction through an input device of the terminal and displaying a menu corresponding to the selected specific direction.

Ex. 1004, Abstr. Figure 11 is a flowchart illustrating a method of displaying a menu in a mobile terminal having a touch screen and is reproduced below.

Id. ¶ 95.

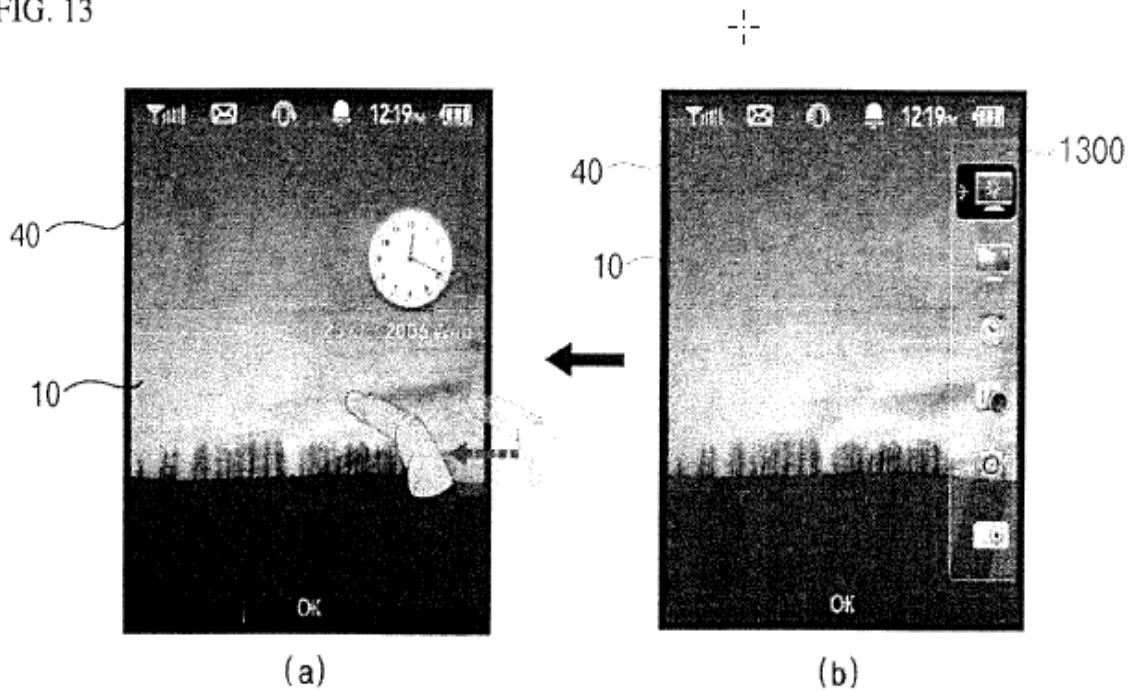
FIG. 11



As shown in figure 11, at 1100 a controller displays a standby screen in the display of the mobile terminal. *Id.* ¶ 96. At 1110 the controller detects a touch and drag operation, where the touch and drag operation indicates movement of an external object on the touch screen. *Id.* ¶ 98. At 1120, as the touch and drag operation is detected, the controller displays a menu list matched to the specific direction in the display. *Id.* ¶ 99. For example, menu list A may be matched to a right direction and menu list B may be matched to a left direction. *Id.*

Figures 13a, 13b, 14a, 14b, 15a, and 15b illustrate examples of a screen for displaying a menu list according to a touch and drag operation of a specific direction. Ex. 1004 ¶ 101. Figures 13a and 13b are reproduced below.

FIG. 13

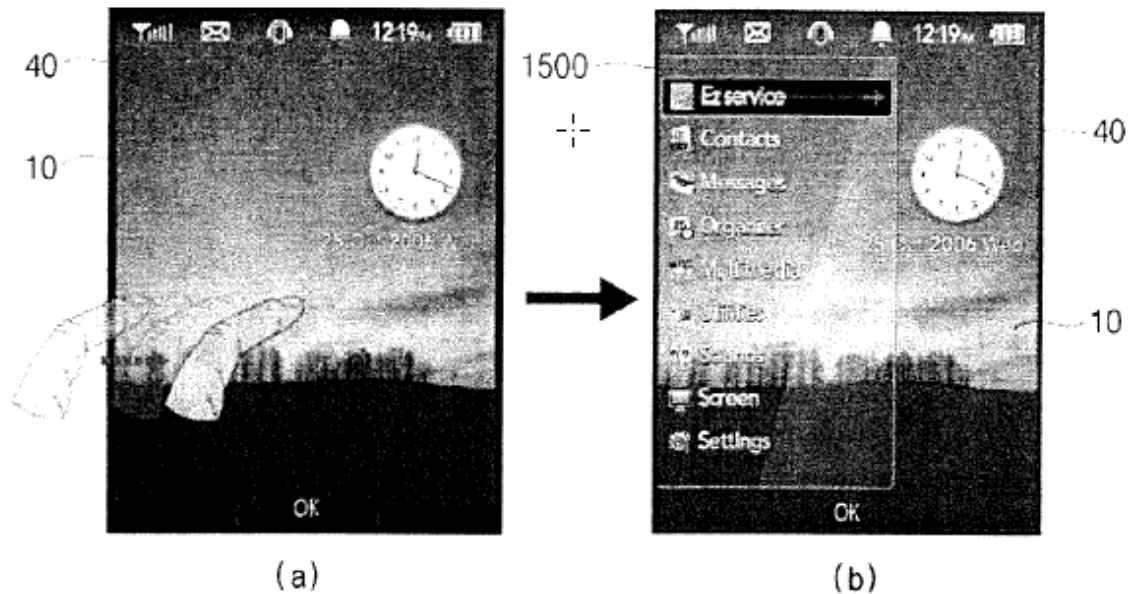


As shown in figures 13a and 13b, when the user touches a right side of touch screen 10 and drags the touch in a left direction, menu list 1300 matched to the left direction is displayed in the display 40. Ex. 1004 ¶¶ 102,

104. Menu list 1300 shown in figure 13b is displayed in translucent form over a clock widget. *Id.* ¶ 70; Figs. 13a and 13b. Also, the clock widget shown in figure 13a is shown as blurred in figure 13b.

Figures 15a and 15b are reproduced below.

FIG. 15



As shown in figures 15a and 15b, when the user touches screen 10 and drags the touch in a right direction, menu list 1500 matched to a right direction is displayed in display 10. Ex. 1004 ¶¶ 103, 104. Menu list 1500 shown in figure 15b can be displayed as emerging from the left side of display 40. *Id.* ¶ 119.

2. Chaudhri – Exhibit 1005

Chaudhri discloses a device with a touch screen that may be unlocked when contact with the display corresponds to a predefined gesture for unlocking the device. Ex. 1005, Abstract. The predefined gesture may include moving an unlocked image to a predefined location or along a predefined path. *Id.* While the device is unlocked, the device may display on the touch screen user interface objects such as text, images, icons, virtual

buttons, pull-down menus, radio buttons, check boxes, selectable lists, and so forth. Ex. 1005 ¶ 60. Figure 6 illustrates a process for indicating progress towards satisfaction of a user input condition such as a predefined gesture and is reproduced below.

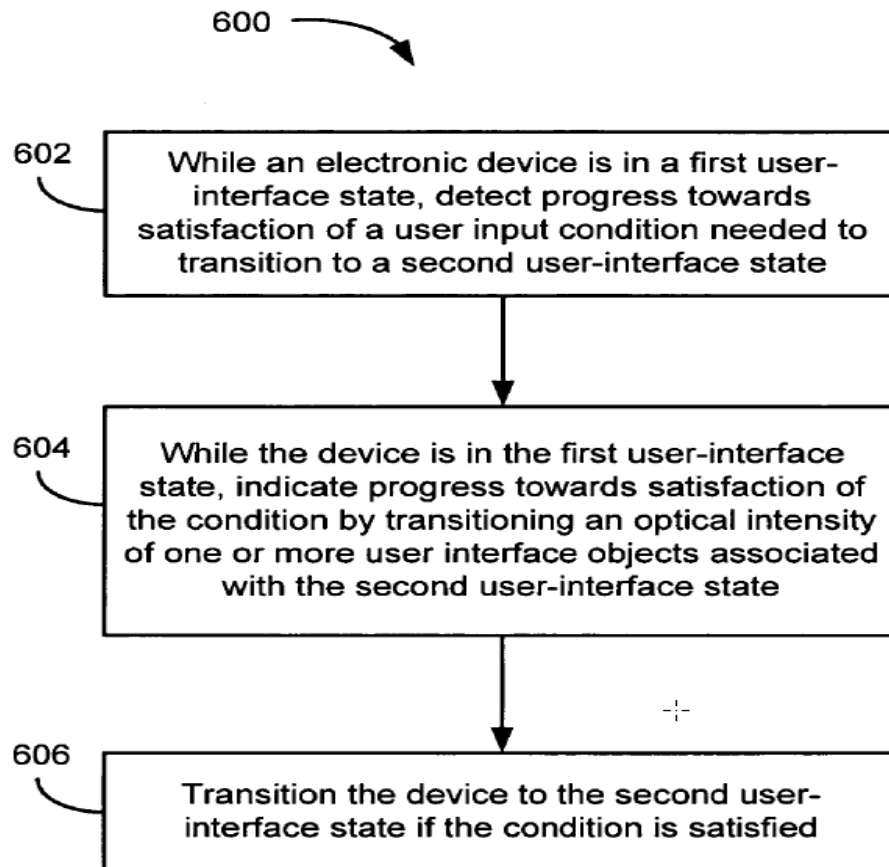


Figure 6

As shown in figure 6, while an electronic device is in a first user-interface state, progress towards satisfaction of a user input condition needed to transition to a second user interface state is detected at 602. Ex. 1005 ¶ 81. While the device is in the first user-interface state, progress towards satisfaction of the condition is indicated by transitioning an optical intensity of one or more user interface objects associated with the second user interface state at 604. *Id.* ¶ 82. The device transitions to the second user

interface state if the condition is satisfied. *Id.* ¶ 84. Chaudhri further discloses that as a user transitions from a first user interface state to a second user interface state, the optical intensity of displayed objects may change. Ex. 1005 ¶¶ 79, 82. The optical intensity may be perceived by users as a transparency effect (or lack thereof) applied to the user interface object. *Id.* ¶ 85. The optical intensity may be the visual differentiation between the user interface object and the background, based on color, hue, color saturation, brightness, contrast, transparency, and any combination thereof. *Id.* The optical intensity of the user interface objects to be displayed in the second user interface state may be increased smoothly. *Id.* ¶ 86. The indication of progress towards completion of the user input condition is a function of the user's satisfaction of the condition. *Id.* ¶ 87. The user may perceive the optical intensity transition as a fading in of the user interface objects as the unlock action is performed. *Id.*

If the user input condition includes a predefined gesture, then the indication of progress of the gesture may be defined in terms of how much of the gesture is completed. Ex. 1005 ¶ 88. For example, if the gesture includes moving the finger from one edge of the screen to the opposite edge horizontally, then the indication of progress may be defined in terms of the distance between the two edges. *Id.* If the user input condition includes dragging an image to a predefined location, then the indication of progress may be defined in terms of the distance between the initial location of the image and the predefined location. *Id.* ¶ 89.

3. *Hinckley – Exhibit 1006*

Hinckley discloses radial menus with bezel gestures for a touch display of a computing device. Ex. 1006, Title, Abstract. Using a bezel menu, a user can touch down at a certain location and stroke or slide their

finger in a certain direction to access a particular functionality or menu command. *Id.* ¶ 105. The presence of a radial menu can be indicated by a small icon associated with a larger icon or slot of a bezel menu as shown in figure 17, which is reproduced below.

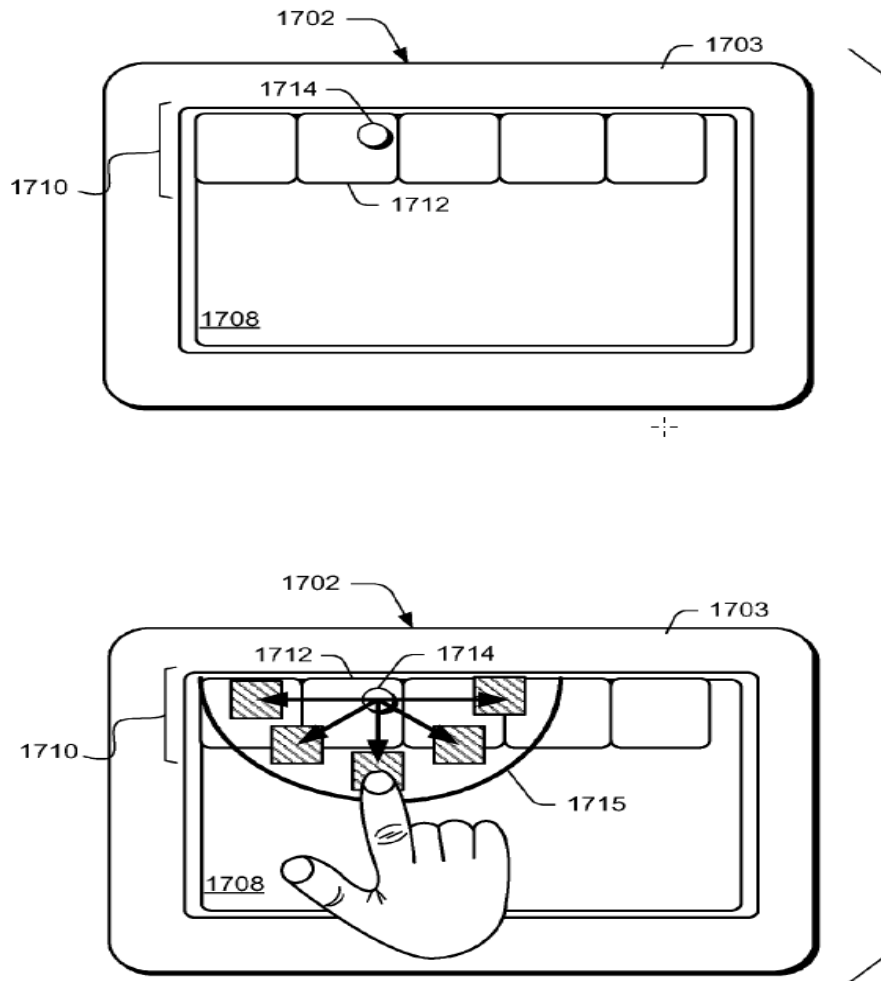


Fig. 17

As shown in figure 17, device 1702 includes a bezel 1703 and a bezel menu 1710 that has been exposed on display device 1708. Ex. 1006 ¶ 106. Bezel menu 1710 includes multiple selectable icons such as icon 1712. *Id.* Each bezel menu icon is associated with a different functionality. *Id.* Icon 1712 includes radial menu icon 1714 that gives a clue to the user that radial

menu 1715 is associated with icon 1712. *Id.* ¶ 107. Radial menu 1715 can be accessed through a tap-and-hold of a finger on or near radial menu icon 1714. *Id.* Tapping radial menu icon 1714 triggers a default action which may be the same as or different than the action associated with tapping bezel menu icon 1712. *Id.* By providing a variety of different types of recognizable inputs, such as “tap” and “tap-and-hold,” and mapping those recognizable inputs to different types of functionalities (*id.* ¶ 66), the user may readily access enhanced functions of the computing device in an efficient and intuitive manner (*id.* ¶ 40) without permanently showing the functions in the device’s user interface (*id.* ¶ 1).

4. *Reasons to Combine Ahn and Chaudhri*

Petitioner presents several reasons for combining the teachings of Ahn and Chaudhri. Petitioner contends a person of ordinary skill would have combined the teachings of Ahn and Chaudhri to yield of a mobile device that changes an optical intensity of a user interface object as a function of progress towards satisfaction of a user’s gesture that transitions the user interface from one state to another. Pet. 19 (citing Ex. 1003 ¶ 57).

Petitioner contends that Ahn discloses blurring a background user interface object such as a clock widget when opening and displaying an edge menu on the screen of the device, but does not disclose further details about the blurring process. *Id.* (citing Ex. 1003 ¶ 58; Ex. 1004, Figs. 3A and 4B). Petitioner contends that Chaudhri provides implementation details for transitioning the optical intensity of a user interface object as the user interface transitions from one state to another, and that a person of ordinary skill in the art would have used this teaching of Chaudhri for the benefit of implementing the optical effect of blurring the clock widget when opening the edge menu as shown in Ahn. *Id.* at 19–20 (citing Ex. 1003 ¶ 59).

Second, Petitioner contends that progressively blurring the clock widget of Ahn using Chaudhri's technique of progressively changing the optical intensity of user interface objects yields the benefit of providing a user with sensory feedback of the progress of transitioning between user interface states. Pet. 20–21 (citing Ex. 1005 ¶ 82; Ex. 1003 ¶ 60). Third, Petitioner contends that blurring Ahn's clock using Chaudhri's progressive technique also yields the benefit of drawing the user's attention to the most relevant layer of a user interface (*id.* at 21–22 (citing Ex. 1008, 1–2; Ex. 1003 ¶ 61)).

Finally, Petitioner contends that varying the optical intensity of a user interface object such as Ahn's clock widget as a function of the magnitude of the user's touch and drag gesture as taught by Chaudhri would have been done in one of two ways, either binary or progressive, to yield the blurring effect shown in figures 4B, 10, and 13B of Ahn. *Id.* at 22–23 (citing Ex. 1003 ¶ 62); *Uber Technologies, Inc. v. XOne, Inc.*, 957 F.3d 1334, 1339–40 (Fed. Cir. 2020) (reversing the Board's determination of lack of motivation “because Okubo's terminal-side plotting and Konishi's server-side plotting were both well known in the art, and were the only two identified, predictable solutions for transmitting a map and plotting locations, it would have been obvious to substitute server-side plotting for terminal-side plotting in a combination of Okubo and Konishi.”) (citing *KSR*, 550 U.S. at 421). Petitioner contends that a person of ordinary skill in the art either would have implemented the blurring effect in a binary fashion by instantly toggling from unblurred to blurred, or would have progressively varied the blur as a function of the user's progress. *Id.* at 23; *see* Ex. 1003 ¶ 62.

Petitioner contends that a person of ordinary skill in the art would have had a reasonable expectation of success in applying the user interface

state transition techniques of Chaudhri to the touch screen of Ahn's mobile device because the combination is of known elements and does no more than yield expected and predictable results. Pet. 18 (citing Ex. 1003 ¶ 56).

Patent Owner provides arguments against the Petition's reasons to combine Ahn and Chaudhri in the context of Patent Owner's arguments that the combination of Ahn and Chaudhri does not teach limitation [1.d.ii]. See PO Resp. 63–71; PO Sur-Reply 27–30. We find Patent Owner's arguments unavailing and do not sufficiently undermine Petitioner's reasons as discussed in our analysis of limitation [1.d.ii] below.

We credit the testimony of Dr. Terveen in finding that using Chaudhri's known technique of progressively increasing the visual differentiation between foreground and background as a function of a gesture across the screen in order to progressively increase the amount of blur in Ahn's clock widget is the combination of familiar elements according to known methods that yields predictable results. Ex. 1003 ¶¶ 56–57; see *KSR*, 550 U.S. at 416. We credit the testimony of Dr. Terveen in finding that Chaudhri provides implementation details for transitioning the optical intensity of a user interface object as the user interface transitions from one state to another, and that a person of ordinary skill in the art would have used this teaching of Chaudhri for the benefit of implementing the optical effect of blurring the clock widget when opening the edge menu as shown in Ahn. Ex. 1003 ¶¶ 58–59. We credit the testimony of Dr. Terveen in finding that a person of ordinary skill in the art would have progressively blurred the background of Ahn as a function of an increase in a magnitude of a user sliding a finger across a screen for the benefit of providing the user with sensory feedback of the progress of transitioning to displaying a menu and the benefit of drawing a user's attention to the most relevant layer of a user

interface. Ex. 1003 ¶¶ 60–61. We credit the testimony of Dr. Terveen in finding that a person of ordinary skill in the art had a choice between either progressively varying the increase in Ahn’s blurring or toggling instantly from unblurred to blurred, and would have done so progressively to address the design needs of providing user feedback and drawing the user’s attention to the most relevant layer of the screen. Ex. 1003 ¶ 62.

5. *Reasons to Combine Hinckley with Ahn and Chaudhri*

We summarize the contentions of the parties then provide our analysis regarding the reasons to combine.

Petitioner’s reasons to combine

Petitioner presents several reasons for combining the teachings of Hinckley with the combined teachings of Ahn and Chaudhri. Petitioner contends that a person of ordinary skill in the art would have integrated the bezel menus and radial menus of Hinckley with the touch screen in the mobile device of the Ahn-Chaudhri combination to yield the predictable result of a mobile device that uses various gestures on a touch screen in order to implement bezel menus and radial menus. Pet. 23–24 (citing Ex. 1003 ¶ 63).

Petitioner contends that, given the similarities between Ahn’s and Hinckley’s menus, the benefits of Hinckley’s techniques with respect to its menus would have also been beneficial to Ahn’s device. Pet. 24 (citing Ex. 1003 ¶ 64). Hinckley’s benefits identified by Petitioner include providing novice and expert gestural modes, distinguishing bezel gestures from other gestures, conserving on screen real estate, and providing an intuitive, efficient, and pleasing experience for the user as discussed in detail in the following paragraphs. *Id.* at 24–26.

Petitioner contends that substituting Hinckley's bezel menus for Ahn's side menus yields the benefit of providing different gestural modes, such as novice mode and expert mode, to access functionality associated with the bezel menu. Pet. 24–26 (citing Ex. 1006 ¶¶ 77–80, 110). Petitioner contends that the novice mode helps to learn and encourage the expert way of gesturing. *Id.* at 25 (citing Ex. 1006 ¶ 79). Petitioner contends that a person of ordinary skill in the art would have implemented the bezel menus and radial menus of Hinckley in the mobile communication device of Ahn for the benefits of creating a user interface that adapts to a user's experience level and provides a more intuitive, efficient, and pleasing experience for the user. *Id.* (citing Ex. 1003 ¶ 64).

Petitioner contends that implementing Hinckley's bezel gestures and its associated menus on Ahn's mobile device yields the benefit of distinguishing gestures that start from the bezel and enter onto the screen from similar gestures that access on-screen content, so that normal direct manipulative gestures for objects near the screen boundaries do not interfere with bezel gestures and vice versa. Pet. 25 (citing Ex. 1006 ¶ 46; Ex. 1003 ¶ 65). Petitioner contends that a person of ordinary skill in the art would have implemented Hinckley's gesture recognition techniques in Ahn's mobile terminal for the benefit of gesture distinction as taught by Hinckley. *Id.*

Petitioner contends that implementing Hinckley's bezel gestures and associated menus on Ahn's mobile device increases efficiency by providing access to the enhanced functions without permanently manifesting the functionality as part of the chrome of a device's user interface, thus conserving valuable screen real estate on mobile devices. *Id.* at 26 (citing Ex. 1006 ¶¶ 1, 40; Ex. 1003 ¶ 66).

Petitioner contends that both Hinckley and Ahn address the problem of displaying menus on a touch screen device, and that both describe the similar solution of touching and dragging a finger on the touch screen in a particular direction or to or from a particular location. Pet. 26 (citing Ex. 1003 ¶ 67). Petitioner contends that a person of ordinary skill in the art would have recognized that implementing Hinckley's similar solution to a similar problem in Ahn's mobile device would have been a simple substitution of one known element for another that yields predictable results. *Id.* at 26–27 (citing *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1380–81 (Fed. Cir. 2007) (“[T]he finding that Teague, by addressing a similar problem, provides analogous art to ICON's application goes a long way towards demonstrating a reason to combine the two references.”)).

Petitioner contends that a person of ordinary skill in the art would have had a reasonable expectation of success in applying the gestures and user interface elements of Hinckley to the touch screen of Ahn's mobile device because the combination does no more than yield expected and predictable results. Pet. 18 (citing Ex. 1003 ¶ 56).

Patent Owner's arguments to the contrary from its Response

Patent Owner contends that the Petition contends that the “techniques described in Hinckley with respect to its bezel menus would have been equally beneficial in the context of Ahn's side menus,” but does not explain why a radial menu was beneficial in the context of Ahn. PO Resp. 36–37 (quoting Pet. 24). Patent Owner contends that a person of ordinary skill in the art would have understood that substituting Ahn's linear menu with Hinckley's radial menu would have resulted in diminished functionality. *Id.* at 37. Patent Owner contends that Petitioner does not explain that replacing

Ahn's menu with Hinckley's radial menu would be simple or yield predictable results. *Id.*

Patent Owner contends that Hinckley describes gestural modes for a bezel menu that does not include a radial menu. PO Resp. 38. Patent Owner contends that the benefits of the novice and expert gestural modes of a bezel menu do not include the radial menu. *Id.* Patent Owner also contends that Hinckley's teaching of bezel gestures for the bezel menus that do not interfere with traditional gestures are not used for the radial menu. *Id.* at 40–41.

Patent Owner contends that substituting Hinckley's bezel and radial menus for Ahn's menu would yield further problems and would have resulted in diminished functionality. PO Resp. 41. In particular, Patent Owner contends that the icons shown in menu 420 of figure 4B and the icons shown in menu 1700 and menu 1710 of figure 17 would not have been displayed in a radial menu. *Id.* at 42–51. According to Patent Owner, all of the menus and sub-menus of Ahn would not have been implemented as radial menus. *Id.* at 51.

Patent Owner contends that a menu of Ahn can include an icon that performs the single function of revealing another menu. PO Resp. 52. Patent Owner contends that Hinckley's bezel menu includes an icon 1712 that can be tapped to trigger one of five functions. *Id.* at 52–53. Patent Owner contends that icon 1712 includes radial menu icon 1714 that can be tapped-and-held to display radial menu 1715, which allows a user to select any of the five functions. *Id.* Patent Owner contends that modifying Ahn's menu to include an icon that triggers one function in response to a tap and displays a radial menu in response to a tap-and-hold results in an icon that

displays a radial menu in response to a tap and displays the same radial menu in response to a tap-and-hold. *Id.* at 54–55.

Petitioner’s rebuttal arguments from its Reply

Petitioner contends that Hinckley teaches that both the bezel menu and the radial menu benefit from novice and expert modes. Reply 16–17. Petitioner contends that a person of ordinary skill knew that linear menus are not easy to use on small devices, especially in mobile situations. *Id.* at 18. Petitioner contends that a person of ordinary skill in the art knew that radial menus and linear menus have advantages and disadvantages. *Id.* at 18–19.

Petitioner contends that Patent Owner’s argument that using a radial menu as an alternative to Ahn’s linear menu is premised on the assumption that a person of ordinary skill in the art would have sought to implement Ahn’s menus exactly as they are depicted in Ahn’s figures without using ordinary creativity. Reply 19; *see id.* at 11. Petitioner contends that bodily incorporating the icons in Ahn’s linear menus into Hinckley’s bezel menu and radial menu is not the test for obviousness. *Id.*; *see id.* at 1. Petitioner contends that a person of ordinary skill in the art would have recognized that Ahn’s side menus and Hinckley’s bezel menus are similar user interface objects, therefore, Hinckley’s bezel menus and bezel gestures would have provided the same benefits to Ahn’s device, including the benefits of the novice and expert modes of the bezel menu and radial menu. *Id.* at 19–20.

Patent Owner’s arguments to the contrary from its Sur-Reply

Patent Owner contends that substitution of Hinckley’s menus for Ahn’s menus would not have been simple and would not have obtained predictable results. PO Sur-Reply 17 (citing Ex. 2006 ¶¶ 71–79, 104–112, 114–131). Patent Owner contends that Petitioner does not explain how a

person of ordinary skill would have avoided the disadvantages of radial menus described by Patent Owner in its Response. *Id.*

Patent Owner contends that the benefits from Hinckley's bezel gestures and associated bezel menus are not related to the radial menu, and do not explain why a person of ordinary skill in the art would have implemented a radial menu into Ahn's device. PO Sur-Reply 18. Patent Owner contends that Hinckley's benefit of providing unfamiliar users with visual guidance is already provided by Ahn as shown in figure 8C. *Id.* at 19. Patent Owner contends that Petitioner does not provide an analysis weighing the advantages and disadvantages of radial menus to support that a person of ordinary skill in the art would have implemented a radial menu in Ahn. *Id.* at 21.

Analysis regarding reasons to combine Hinckley, Ahn, and Chaudhri

We agree with Petitioner that a person of ordinary skill would have recognized several benefits in combining the teachings of Hinckley with those of Ahn and Chaudhri. First, we agree with Petitioner in finding that Hinckley teaches that its bezel gestures and associated menus conserve screen real estate by providing access to enhanced functions without permanently manifesting the functionality as part of the chrome of a device's user interface. *See* Pet. 26 (citing Ex. 1006 ¶¶ 1, 40; Ex. 1003 ¶ 66).

Second, we agree with Petitioner in finding that Hinckley describes techniques for allowing its device to differentiate bezel gestures from other similar gestures. Ex. 1006 ¶ 46. We find that this yields the benefit of distinguishing gestures that start from the bezel and enter onto the screen from other similar gestures that access on-screen content. *Id.*; *see* Pet. 25 (citing Ex. 1006 ¶ 46; Ex. 1003 ¶ 65). Thus, normal direct manipulative

gestures, even for objects near the screen boundaries, are possible and do not interfere with bezel gestures and vice versa. Ex. 1006 ¶ 46.

Third, we agree with Petitioner in finding that Hinckley teaches providing different gestural modes, such as novice mode and expert mode, to access functionality associated with the bezel menu and the radial menu, where the novice mode helps a user to learn the expert way of accessing the functionality. Ex. 1006 ¶¶ 77–80, 110. We find that the novice and expert modes provide the benefits of creating a user interface that adapts to a user’s experience level and provides a more intuitive, efficient, and pleasing experience for the user. *See* Pet. 24–25 (citing Ex. 1003 ¶ 64).

Further, we agree with Petitioner that Ahn and Hinckley each address the problem of displaying a menu on a touch screen. Pet. 26; Ex. 1004 ¶¶ 4–6; Ex. 1006, code (54), ¶¶ 1–3, 58–60; Ex. 1003 ¶ 67. We also agree that Hinckley, by addressing a similar problem as Ahn, “goes a long way towards demonstrating a reason to combine the two references.” *ICON Health & Fitness*, 496 F.3d at 1380-81.

“The [Supreme] Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416. We find that altering Ahn’s device by substituting Hinckley’s bezel gestures and associated bezel and radial menus for Ahn’s technique of displaying menus does no more than yield the predictable results of (a) conserving screen real estate, (b) distinguishing bezel gestures from normal gestures so that the bezel gestures do not interfere with normal gestures and vice versa, (c) providing a novice mode to help a user learn the expert way of accessing the functionality of the bezel and radial menus, and (d) providing a user

interface that creates an intuitive, efficient, and pleasing experience for the user as taught by Hinckley. Ex. 1006 ¶¶ 1, 40, 46, 77–80, 110; Ex. 1003 ¶¶ 63–67.

Patent Owner’s arguments to the contrary are unavailing and do not sufficiently undermine Petitioner’s reasoning. First, Patent Owner contends that Hinckley’s novice and expert modes do not apply to Hinckley’s radial menus. PO Resp. 38–41; PO Sur-Reply 18. However, this contention is inconsistent with Hinckley’s disclosure that the radial menus include both a novice mode and an expert mode. Ex. 1006 ¶ 110.

Next, Patent Owner contends that the Petition does not explain why a radial menu would have been beneficial in the context of Ahn. PO Resp. 37; PO Sur-Reply 17. This contention is inconsistent with the Petition’s explanation of the benefits of using Hinckley’s bezel gestures and associated bezel and radial menus as summarized in the paragraphs above. *See* Pet. 23–26.

Patent Owner’s specific contention that Hinckley’s radial menu icon lacks a benefit is inconsistent with paragraph 107 of Hinckley, the Petition’s reliance on this paragraph, and Patent Owner’s acknowledgement that this paragraph describes an icon 1712 that includes a radial menu icon 1714, where a tap of icon 1712 triggers one of five functions associated with that icon, and a tap-and-hold of radial menu icon 1714 displays a radial menu that allows a user to select any of the five associated functions. PO Resp. 52–53 (citing Pet. 52, 54–55). As recognized by Patent Owner, a similar icon in Ahn, such as icon 830 of menu 820 shown in figure 9A, only performs the single function of revealing menu 870 as shown in figure 9B. *Id.* at 52. Thus, one of the benefits of using Hinckley’s icon 1712 that includes radial menu icon 1714 in Ahn’s device is triggering one of five

associated functions in response to a tap of icon 1714, and displaying a radial menu of the five associated functions in response to a tap-and-hold of icon 1714. *See* Pet. 46–55; Ex. 1006 ¶ 107. That is, Hinckley teaches that one benefit of radial menu icon 1714 is that a user can trigger a single function of the radial menu without opening the radial menu, and only needs to open the radial menu to trigger another of the associated functions. We find that a person of ordinary skill in the art would have replaced an icon of Ahn that performs the single function of revealing another menu with Hinckley’s icon 1712 including radial menu icon 1714 for the benefit of triggering one of five associated functions in response to a tap of icon 1714 and displaying a radial menu of all five associated function in response to a tap-and-hold of icon 1714. Ex. 1006 ¶ 107.

Patent Owner’s contention that several of the icons shown in Ahn’s menus would not benefit from a radial menu because of their assigned locations and functions (PO Resp. 42–51) do not address the Petition’s contention that a person of ordinary skill in the art would have used Hinckley’s bezel menu with icon 1712 that includes radial menu icon 1714 in Ahn’s device. *See* Pet. 46–55. Even if some icons would not benefit from a radial menu, we agree with Petitioner that a person of ordinary skill in the art would have recognized that other icons would benefit, such as the icons that display sub-menus when selected, as shown by icon 830 in figure 8C and the answer options icon shown in figure 17 of Ahn as well as icon 1714 shown in figure 17 of Hinckley, and would have therefore provided such icons with a radial menu icon. *See* Reply 2 (quoting *KSR*, 550 U.S. at 418); *see id.* at 15–16 (quoting *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013)). With respect to the specific locations assigned to the bezel menu icons and the radial menu icons, we agree with Petitioner that a

person of ordinary skill would have assigned specific locations to icons in a manner that improves efficiency and usability, such as locating the radial menu icon away from the endpoints of the bezel menu as taught by figure 17 of Hinckley.

Patent Owner's contentions that a person of ordinary skill would have not used Hinckley's radial menus in Ahn's mobile device because of disadvantages such as having less icons than a linear menu and having icons of the radial menu overlap icons in the underlying linear bezel menu, which would prevent a user from selecting an icon in the underlying menu when the bezel menu is open (PO Resp. 21–22, 46–51) are inconsistent with Hinckley's disclosure of implementing its disclosed gesture techniques and associated menus in wireless phones and mobile telephones. Ex. 1006 ¶¶ 43, 53, 56. We find that Hinckley's explicit disclosure of implementing radial menus in mobile telephones shows that a person of ordinary skill in the art would have implemented Hinckley's radial menu in a mobile telephone.

Further, we agree with Petitioner that it is not necessary to show that a combination is “the *best* option, only that it be a *suitable* option.” Reply 1 (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021)); see *id.* at 18–19. “[A] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006). Even Dr. Rosenberg and his supporting evidence recognize benefits of a radial menu over a linear menu, such as faster selection and associating a direction with an assigned function. Ex. 2006 ¶¶ 75, 77; see Ex. 1023 ¶ 31 (citing Ex. 2009, 3; Ex. 2013, 2). Dr. Terveen testifies that the evidence provided by Patent Owner and relied on by Dr.

Rosenberg also weighs advantages and disadvantages of a pie menu such as Hinckley's radial menu. Ex. 1023 ¶ 33 (citing Ex. 2010, 2).

We find that a person of ordinary skill in the art had knowledge that “linear menus are not easy to use on small devices, especially in mobile situations” because “[t]he limited screen space makes it difficult to display a large . . . linear menu while keeping items large enough to be easily selected” (Ex. 1028, 2) and that “[d]istance to and size of the target are important factors that give pie menus the advantage over traditional linear menus” (Ex. 2013, 2). *See* Ex. 1023 ¶¶ 31–33. Given that Hinckley explicitly describes using its radial menu in a mobile telephone, and given that a person of ordinary skill in the art had knowledge of the advantages and disadvantages of Hinckley's radial menu, we find Dr. Terveen's testimony that a person of ordinary skill in the art would have used Hinckley's radial menu in Ahn's mobile device more persuasive than Dr. Rosenberg's testimony to the contrary, because Dr. Terveen's testimony is consistent with the teachings of Hinckley and the knowledge of a person of ordinary skill in the art, whereas Dr. Rosenberg does not reconcile his testimony with Hinckley's express disclosure of displaying a radial menu on the touch screen of a mobile telephone. *See* Ex. 1003 ¶¶ 56, 63–67; 1023 ¶¶ 31–33; Ex. 2006 ¶¶ 71–79; Ex. 1006 ¶¶ 43, 53, 56; Ex. 2009, 3; Ex. 2010, 2; Ex. 2013, 2.

We find that a person of ordinary skill in the art had reason to conclude that implementing Hinckley's radial menu in Ahn's mobile device with limited screen space yields advantages such as distance to and size of the icons as well as associating a function with a direction that outweigh disadvantages such as having less icons than a linear menu. We find that combining the bezel gestures and associated bezel menu and radial menu of

Hinckley with the touch screen mobile device of Ahn yields the predictable result of a mobile device that utilizes bezel gestures on a touch screen to display a bezel menu and a radial menu. *KSR*, 550 U.S. at 416 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

6. Independent claim 1

Petitioner challenges claim 1 as unpatentable over the combination of Ahn, Chaudhri, and Hinckley. Pet. 18–67. Patent Owner presents contentions only with respect to the reasons to combine the teachings of Hinckley with those of Ahn and Chaudhry, and with respect to limitations [1.d.i], [1.d.ii], [1.e.ii], and [1.e.iii], but otherwise does not present arguments contrary to the Petition.

Limitation [1.a]

Limitation [1.a] recites “An electronic device, comprising: a display; a touch interface; one or more processors; memory; and 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.”

Petitioner contends that Ahn teaches this limitation in disclosing a mobile communication terminal that includes a touch input device, a memory, a display, and a controller. Pet. 27 (citing Ex. 1004 ¶ 27, Fig. 1; Ex. 1003 ¶ 68). Petitioner contends that a person of ordinary skill in the art would have understood that Ahn’s memory, which includes a program memory, stores programs for controlling the operation of the mobile communication terminal, and that the controller executes the programs. *Id.* at 28–29 (citing Ex. 1004 ¶¶ 29, 32, 99–100, 106–108; Ex. 1003 ¶¶ 71–72). Patent Owner does not present arguments to the contrary.

We find that Ahn teaches limitation [1.a] of claim 1.

Limitation [1.b]

Limitation [1.b] recites “the one or more programs including instructions for: displaying, utilizing the display, a graphical user interface.”

Petitioner contends that Ahn teaches this limitation in disclosing that the controller utilizes programs stored in program memory to control the display. Pet. 29–30 (citing Ex. 1004 ¶¶ 29, 31–32, 85, 89, 96, 99, 106, 108; Ex. 1003 ¶¶ 74–76). Patent Owner does not present arguments to the contrary.

We find that Ahn teaches limitation [1.b] of claim 1.

Limitation [1.c]

Limitation [1.c] recites “when the graphical user interface is displayed, detecting, utilizing the touch interface, a first gesture that begins in connection with a first edge of the display and moves inward.”

Petitioner contends that this limitation is taught by the combination of Ahn and Hinckley. Pet. 30–34. Petitioner contends that Ahn teaches a user touching a specific position of the touch screen and dragging the touch in a specific direction in order to display a menu list matched to that specific direction in the display. Pet. 30–32 (citing Ex. 1004 ¶¶ 95–99, 102, 118–119, Figs. 13a, 13b, 18a, and 18b; Ex. 1003 ¶¶ 77–79). Petitioner contends that Hinckley also teaches a user initiating a bezel gesture in connection with a first edge of a display then moves inward in order to access a bezel menu. Pet. 33–34 (citing Ex. 1004 ¶¶ 44–45, 72–81, Fig. 6; Ex. 1003 ¶¶ 80–82). Patent Owner does not present arguments to the contrary.

We find that the combination of Ahn and Hinckley teaches limitation [1.c] of claim 1.

Limitation [1.d.i]

We summarize the contentions of the parties and then provide our analysis of limitation [1.d.i]. We highlight that Patent Owner’s arguments regarding whether the combination of Ahn and Hinckley teaches a menu that moves with a user’s finger are found in the section of Patent Owner’s Response labeled “Petitioner’s Mapping to Claim 1’s Blurring Limitation is Deficient,” which addresses limitation [1.d.ii]. *See* PO Resp. 55–62. However, in our view Patent Owner’s arguments regarding the combination of Ahn and Hinckley are better addressed here.

Contentions from the Petition

Limitation [1.d.i] recites “in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in and including one or more first menu items.”

Petitioner contends that Ahn teaches this limitation in disclosing a user touching a specific position of the touch screen, such as a right edge, and dragging the touch in a specific direction, such as left, and the controller displaying a menu list matched to the left direction in the display as shown in Figures 13a and 13b. Pet. 35–36 (citing Ex. 1004 ¶¶ 95–99, 102, 104, Figs. 13a, 13b, 14a, 14b, 15a, 15b; Ex. 1003 ¶¶ 83–85).

Petitioner contends that figure 18 shows that as a user drags a graphic shadow, a menu list is displayed along the dragged graphic shadow, and that a person of ordinary skill in the art would have understood that this teaches displaying the menu as “sliding in” as claimed. Pet. 37 (citing Ex. 1004 ¶¶ 118–119; Ex. 1003 ¶ 86). Petitioner further contends that Hinckley also teaches using a bezel gesture to access a bezel menu as shown in figure 6, where the bezel gesture allows the bezel menu to be dropped down. Pet. 37–

38 (citing Ex. 1006 ¶ 73, Fig. 6; Ex. 1003 ¶¶ 87–88). Petitioner contends that a person of ordinary skill would have understood that this bezel gesture, along with Hinckley’s disclosure of closing the bezel menu by sliding the menu back off of the screen, teaches displaying a first menu as sliding in and sliding off the display. Pet. 38–39 (citing Ex. 1006 ¶¶ 73, 80; Ex. 1003 ¶¶ 88–89).

Contentions from Patent Owner’s Response

Patent Owner contends that Ahn’s menu does not progressively slide with the user’s finger. PO Resp. 56–59. In particular, Patent Owner contends that graphic shadow 1800 does not move (*id.* at 56–57) and that Ahn’s menu operations are binary and that Ahn displays its menu after determining that a drag distance exceeds a first distance (*id.* at 57–59 (citing Ex. 1004, Fig. 16 steps 1620 and 1630; Ex. 2006 ¶¶ 56, 145 (Dr. Rosenberg testifying that Ahn’s figures 11–15 operate in the same manner))).

Patent Owner also contends that Hinckley’s menu does not progressively slide with the user’s finger. PO Resp. 60–61. In particular, Patent Owner contends that in Hinckley’s novice mode the menu is displayed when a timer expires, which is after the corresponding input is detected. *Id.*

Contentions from Petitioner’s Reply

Petitioner contends that Ahn teaches that “as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40, and the menu list 1500 can be displayed as emerging from the left side of the display 40.” Reply 21 (quoting Ex. 1004 ¶ 119). Petitioner contends that a person of ordinary skill would have understood that these temporal descriptions would have been implemented such that menu 1500 emerges as the user drags in a right direction while pressing the graphic

1800. *Id.* (citing Ex. 1004 ¶¶ 117–119; Ex. 1023 ¶ 36). Petitioner contends that Dr. Rosenberg’s testimony to the contrary regarding Ahn’s menu is inconsistent with Ahn’s teachings. *Id.* at 21–22.

Petitioner contends that Hinckley teaches that one example of how revealing the bezel menu can work is by using a timer. Reply 22. Petitioner contends that Hinckley teaches that “the bezel menu slides out and tracks with the user’s finger” in novice mode and that the bezel menu is revealed during a finger-drag gesture in expert mode. *Id.* (citing Ex. 1006 ¶¶ 78–80; Ex. 1023 ¶ 37). Petitioner contends that a person of ordinary skill in the art would have understood these disclosures as teaching that the bezel menu tracks with the user’s finger as the user drags a finger across the display. *Id.* at 22–23. Petitioner contends that this understanding of Hinckley is consistent with contemporaneous publications of Hinckley, which show a bezel menu sliding out with a user’s dragging gesture. *Id.* at 23 (citing Ex. 1025, 8; Ex. 1023 ¶ 38).

Arguments from Patent Owner’s Sur-Reply

Patent Owner contends that Petitioner mixes two different gestures described in paragraphs 118 and 119 of Ahn. PO Sur-Reply 23. In particular, Patent Owner contends that paragraph 118 describes displaying a menu if the user drags in a right direction, and paragraph 119 describes graphic shadow disappearing and a menu emerging from the left side of the display if the user touch drags to the left and presses graphic shadow 1800. *Id.* (citing Ex. 1004 ¶¶ 118–119). Patent Owner contends that Dr. Rosenberg’s testimony is consistent with Ahn’s description of graphic shadow 1800. *Id.* at 24.

Patent Owner contends that figures 7–11 of Hinckley do not show a menu progressively sliding with a user’s finger. PO Sur-Reply 24–25.

Patent Owner contends that the only way for Hinckley's menu to follow a user's finger would be to perform a slide gesture that is exactly the height of the menu. *Id.* at 25–26 (citing Ex. 1006 ¶ 78). Patent Owner contends that Hinckley's contemporaneous publications do not provide evidence of the background knowledge of a person of ordinary skill in the art. *Id.* at 26.

Our Analysis

With respect to Ahn, we credit Dr. Terveen's testimony in finding that a person of ordinary skill in the art would have understood Ahn's disclosure as teaching “in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in” as claimed in limitation [1.d.i]. Ex. 1003 ¶¶ 84–86 (citing Ex. 1004 ¶¶ 99, 102, 104, 118–119, Figs. 13–15 and 18; Ex. 1006 ¶ 80; Ex. 1010 ¶ 52; Ex. 1011 ¶ 51); Ex. 1023 ¶¶ 35–36. We find that Dr. Terveen's testimony is supported by Ahn and the background knowledge of a person of ordinary skill in the art. We also find that Dr. Rosenberg's testimony, to the extent that it is consistent with the teachings of Ahn and the background knowledge of a person of ordinary skill, supports Dr. Terveen's testimony.

In particular, consistent with Dr. Terveen's testimony, Ahn discloses that “[a]s the touch and drag operation is detected, the controller 50 . . . displays an item list” such as a menu “matched to the specific direction in the display 40 (S1120).” Ex. ¶ 99; *see id.* at ¶ 102, Fig. 11. Ahn discloses that, as shown in figures 13a and 13b, “if the user touches a specific position of the touch screen 10 and drags the touch in a left direction a menu list 1300 matched to a left direction is displayed in the display.” *Id.* ¶ 102; *see id.* ¶ 104. Ahn discloses that “as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.” *Id.*

¶ 118. Ahn discloses that “if the user touch drags to the left, the menu list 1500 shown in FIG. 15(b) can be displayed in the display,” and that “the menu list 1500 can be displayed as emerging from the left side of the display.” *Id.* at ¶ 119. Thus, Dr. Terveen’s testimony is supported by the teachings of Ahn.

Even if we accept Patent Owner’s contention that graphic shadow 1800 does not move (PO Resp. 56–57) and that Ahn does not teach or suggest that the menu’s appearance moves together with the user’s finger (*id.*), this contention does not address the Petition’s and Dr. Terveen’s reliance on Ahn’s disclosure of displaying a menu in a manner “matched to the specific direction in the display” as the touch and drag operation, and that the menu is displayed “as emerging from the . . . side of the display.” Ex. 1004 ¶¶ 99, 119; Pet. 35–37; Ex. 1006 ¶¶ 83–86. Similarly, Patent Owner’s contention that paragraph 118 of Ahn describes dragging a finger and displaying a menu from one side of the screen, and paragraph 119 describes dragging and displaying from the other side (PO Sur-Reply 23) does not address Ahn’s disclosure of displaying a menu as the touch and drag operation is detected, where the menu is displayed as emerging from the side of the display.

Patent Owner’s contentions that “Ahn’s menu operations are binary and would open after a corresponding input is received” and that Ahn’s “embodiments are described as binary—not progressive” (PO Resp. 57; *see id.* at 56–59) rely on Ahn’s description of figure 16, which is “another implementation” of displaying a menu (Ex. 1004 ¶ 105) that the Petition does not rely on in contending that Ahn teaches the claimed menu “as sliding in.” Pet. 35–37. In contrast to figure 16, Ahn’s disclosure of figure 11 describes that “[a]s,” not after, “the touch and drag operation is detected,”

the controller displays a menu list “matched to the specific direction in the display.” Ex. 1004 ¶ 99. Ahn further discloses that “the menu list 1500 can be displayed as emerging from the . . . side of the display.” *Id.* ¶ 119.

Dr. Rosenberg’s testimony that Ahn displays the menu after the touch and drag operation is completed is inconsistent with this disclosure of Ahn and also with his testimony that “Ahn’s device is configured such that [the] menu . . . may appear fast enough for the user to think this occurs ‘as’ the selection is happening” and that “the menu may be displayed ‘as’ the user is still dragging their finger on the screen.” Ex. 2006 ¶ 56.

Dr. Terveen’s testimony that a person of ordinary skill in the art would have understood Ahn as teaching the claimed “in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in” (Ex. 1003 ¶ 85) is supported by the background knowledge of a person of ordinary skill in the art at the time of invention (*id.* (citing Ex. 1006 ¶ 80; Ex. 1010 ¶ 52 (disclosing that “the user interface can be presented progressively as the gesture is received”); Ex. 1011 ¶ 51)). *See KSR*, 550 U.S. at 401 (The Supreme Court recognizing that the use of evidence of the skilled artisan’s background knowledge is foundational to a proper obviousness analysis). Neither Patent Owner nor Dr. Rosenberg rebut Dr. Terveen’s testimony that displaying the menu “as sliding in” as claimed was within the background knowledge of a skilled artisan at the time of invention. *See* Ex. 1023 ¶ 35. We find that in response to detecting a first gesture, displaying a first menu “as sliding in” as claimed was within the background knowledge of a skilled artisan.

In summary, we find that Dr. Terveen’s testimony that Ahn teaches “in response to the detection of the first gesture that begins in connection

with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in” is supported by Ahn’s disclosure, including Ahn’s description of displaying a menu as a touch and drag operation is detected and Ahn’s description of displaying a menu as emerging from the side of the screen; the background knowledge of a person of ordinary skill; and Dr. Rosenberg’s testimony that Ahn’s menu is displayed as the user drags a finger on the screen (Ex. 2006 ¶¶ 56–58). We rely on the testimony of Dr. Terveen in finding that Ahn teaches “in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in.”

With respect to Hinckley, Patent Owner is correct that Hinckley discloses that in one embodiment of novice mode, Hinckley’s device observes a finger to cross from the screen bezel into a slot of the bezel menu, starts a timer, and displays the bezel menu after the timer expires. Ex. 1006 ¶ 80. However, we disagree that the gesture mode is limited to the timer embodiment disclosed in paragraph 80. Figure 6 of Hinckley shows a finger of a user’s hand that touches the bezel and then moves across the bezel onto the display device in the direction of the illustrated arrow to allow the bezel menu to be dropped down while in novice mode. Ex. 1006 ¶¶ 73, 77, Fig. 6. Hinckley describes a similar gesture in reverse for closing the bezel menu by sliding the menu back off of the screen. *Id.* ¶ 77.

Dr. Terveen testifies that a person of ordinary skill in the art would have understood Hinckley’s disclosure as teaching a bezel menu that slides on screen following a user’s finger. Ex. 1003 ¶¶ 87–88 (citing Ex. 1006 ¶¶ 73, 80); Ex. 1023 ¶¶ 37–38 (citing Ex. 1006 ¶¶ 78–80; Ex. 1025, 8, Fig. 9b). Dr. Terveen also testifies that the background knowledge a person of ordinary skill in the art at the time of invention included the knowledge that,

in order to access Hinckley's bezel menu, "the user slides a finger across the bezel, which starts to pull out the bezel menu (Fig. 9b)." Ex. 1023 ¶ 38 (quoting Ex. 1025, 8). Exhibit 1025, which is a contemporaneous article listing Hinckley as the first author, discloses that its figures 9a and 9b show "the self-revealing, 'novice' mode." Ex. 1025, 8.

Patent Owner's contention and Dr. Rosenberg's testimony (Ex. 2006 ¶ 147) that Hinckley's bezel menu in novice mode is not displayed until a timer expires does not address Hinckley's figure 6 and corresponding description in paragraphs 73 and 77 that do not include a timer, or address the discussion in paragraph 80 that the embodiment with a timer is "but one example of how this can work in accordance with one embodiment." Patent Owner's contention and Dr. Rosenberg's testimony also does not address Dr. Terveen's testimony that the knowledge of a person of ordinary skill in the art at the time of invention included knowledge that in Hinckley's novice mode, "the user slides a finger across the bezel, which starts to pull out the bezel menu (Fig. 9b)." Ex. 1025, 8.

Therefore, we agree with Petitioner and Dr. Terveen that Hinckley teaches a menu that progressively slides on screen with a user's finger. We rely on the testimony of Dr. Terveen in finding that Hinckley teaches a menu that progressively slides on screen with a user's finger. We agree with Petitioner and find that the combination of Ahn and Hinckley teaches a menu that progressively slides on screen in response to detecting dragging or sliding motion of user's finger.

We find that the combination of Ahn and Hinckley teaches limitation [1.d.i] of claim 1.

Limitation [1.d.ii]

We summarize the contentions of the parties then provide our analysis for limitation [1.d.ii].

Contentions from the Petition

Limitation [1.d.ii] recites “blurring at least a portion of the graphical user interface such that a magnitude of the blurring of the at least portion of the graphical user interface progressively increases as a function of an increase in a magnitude of the first gesture being detected.”

Petitioner contends that Ahn teaches this limitation in describing displaying a menu in translucent form, where the translucent form allows light but not detailed images to pass through. Pet. 39–40 (citing Ex. 1004 ¶ 7; Ex. 1009, 3, 6; Ex. 1003 ¶¶ 90–91; Ex. 1001, 103:57–59). Petitioner contends that a person of ordinary skill would have understood that as a user uses a dragging gesture to open a translucent menu, causing the translucent menu to slide onto the display screen, the translucent menu would progressively blur the background as a function of the magnitude of the sliding gesture. Pet. 40–41 (citing Ex. 1003 ¶ 92). Petitioner asserts that this is because “as the translucent menu slides in, the menu would progressively overlap more of the standby screen and, thus, progressively blur more over the standby screen.” *Id.* at 40.

Petitioner also contends that the combination of Ahn and Chaudhri teaches limitation [1.d.ii]. Petitioner contends that Ahn illustrates blurring a portion of the background as a result of a user opening a menu. Pet. 41 (citing Ex. 1004, ¶¶ 36, 97, 107, 102, Figs. 3a, 4b, 10, 12, 13a, 13b; Ex. 1003 ¶ 93). Petitioner contends that Chaudhri describes a process for indicating progress towards satisfaction of a user input condition, such as a predefined gesture, by transitioning an optical intensity of one or more user

interface objects. Pet. 42–44 (citing Ex. 1005 ¶¶ 60, 80–82, 85, Fig. 6; Ex. 1003 ¶¶ 94–96). Petitioner contends that Chaudhri teaches that the optical intensity may be the visual differentiation between the user interface object and the background, based on transparency. *Id.* at 43–44 (citing Ex. 1005 ¶ 85). Petitioner contends that as the predefined gesture progresses, the optical intensity of the user interface objects would correspondingly vary in magnitude. *Id.* at 44 (citing Ex. 1005 ¶¶ 87–88, Figs. 8A–8C; Ex. 1003 ¶ 97). Petitioner contends that a person of ordinary skill in the art, when using a gesture to slide in a menu on the display as taught by Ahn, would have varied the transparency of the menu by increasing the blurring of the background object as taught by Chaudhri for the benefits of visually indicating the user’s progress in completing the gesture and differentiating between the menu and the background as taught by Chaudhri. *Id.* at 45 (citing Ex. 1005 ¶ 85; Ex. 1003 ¶ 98).

Contentions from Patent Owner’s Response

Patent Owner contends that the optical transition of a clock widget from not blurred to blurred as shown in figures 3A and 4B of Ahn does not suggest to a user when or if the menu will appear as shown in figure 4B. PO Resp. 63–67 (citing Ex. 1004, Figs. 3A, 4B, 10, 13b; Ex. 2006 ¶¶ 151–154). Patent Owner contends that a person of ordinary skill in the art would have understood that the change in appearance indicates that a gesture is happening, but would not provide any indication of progress in completing a touch and drag operation. *Id.* at 67 (citing Ex. 2006 ¶ 155). Patent Owner contends that the variation in optical intensity would not have helped differentiate between the user interface object, which is the menu list, and the background, which is the standby screen including the clock widget,

because the menu is not shown until after the gesture is completed. *Id.* at 67–68 (citing Ex. 2006 ¶ 156).

Patent Owner contends that Chaudhri only varies the optical intensity of foreground objects, but does not vary the optical intensity of background objects. PO Resp. 68–69 (citing Ex. 1005 ¶ 85 (“optical intensity may be the visual differentiation between the user-interface object and the background”); Ex. 2006 ¶¶ 158–159). Patent Owner contends that Chaudhri indicates progress by transitioning objects associated with a second user interface state (corresponding to Ahn’s menu), but Ahn reduces optical intensity of a first user interface state (corresponding to Ahn’s background). *Id.* at 69–71 (citing Ex. 1005 ¶¶ 81–82, Fig. 6; Ex. 1004, Figs. 13a and 13b; Ex. 2006 ¶¶ 161–162). According to Patent Owner, adjusting the optical intensity of Ahn’s clock widget of the first user interface state is the opposite of Chaudhri’s disclosure of “transitioning an optical intensity of one or more user interface objects associated with the second user interface state.” *Id.* at 71 (quoting Ex. 1005 ¶ 82).

Contentions from Petitioner’s Reply

Petitioner contends that the Petition treats Ahn’s clock widget as a user interface object displayed with the background image. Reply 24 (citing Pet. 19–23, 41–45; Ex. 1004 Figs. 3A and 4B). Petitioner contends that Chaudhri teaches an example in which as the user transitions from a first to a second application, the user interface for the second application fades in, or increases in intensity, and the user interface for the first application fades out, or decreases in intensity, which supports Petitioner’s prior art combination. *Id.* (citing Ex. 1005 ¶ 79; Pet. 14–15). Petitioner also contends that fading out Ahn’s clock widget consistent with Chaudhri’s teachings would have been one of a limited number of ways of

implementing the blurring effect shown in figures 4B, 10, and 13B of Ahn. *Id.* at 24–25 (citing Pet. 22–23).

Contentions from Patent Owner’s Sur-Reply

Patent Owner contends that Chaudhri’s fade in and fade out animation effect occurs after the gesture is complete and cannot establish blurring as a function of the magnitude of the first gesture. PO Sur-Reply 27–28 (citing Ex. 1005 ¶¶ 76, 79). Patent Owner contends that Petitioner’s obvious-to-try rationale is deficient because Petitioner did not show a design need or market problem, and also did not show only two possible methods of solving the problem existed. *Id.* at 28–29. Patent Owner contends that Dr. Terveen’s framing of blurring as being binary is incorrect, because according to Patent Owner there are numerous ways to blur an object that are not progressively as a function of a user’s gesture. *Id.* at 29–30.

Our Analysis of Limitation [1.d.ii]

We disagree with Patent Owner’s contention that the variation in optical intensity would not have helped differentiate between the menu list and the clock widget. *See* PO Resp. 63–68. Patent Owner’s contention and the supporting testimony of Dr. Rosenberg are based on the premise that “[b]ecause the menu is not displayed during the gesture, there can be no differentiation until the menu appears, which is after the gesture is completed.” *Id.* at 67 (citing Ex. 2006 ¶ 156). We find that, contrary to Patent Owner’s contention, the prior art combination teaches that the menu is progressively displayed during the gesture as discussed in our analysis of limitation [1.d.i] above. We credit the testimony of Dr. Terveen in finding that as a user utilizes a dragging gesture to open a menu, the menu would slide onto the display and would progressively increase the blurring of the background as a function of the increase in magnitude of the gesture as the

menu slides onto the screen. Ex. 1023 ¶ 40; *see id.* ¶¶ 39, 41–43; Ex. 1003 ¶¶ 60, 91–99.

We disagree with Patent Owner’s contention that Ahn reduces optical intensity of a first user interface state (corresponding to Ahn’s background), which, according to Patent Owner, is the opposite of Chaudhri’s disclosure of indicating progress by transitioning objects associated with a second user interface state (corresponding to Ahn’s menu). PO Resp. 68–71. As we discussed in the Decision to Institute, Chaudhri discloses that “the optical intensity may be the visual differentiation between the user-interface object and the background,” which teaches that increasing the blurring of Ahn’s clock widget underneath the translucent menu increases the visual differentiation between the menu and the background as taught by Chaudhri. Dec. 29 (quoting Ex. 1005 ¶ 85).

Chaudhri discloses that “as a user transitions from a first state to a second state, a first user interface object may decrease in intensity, or fade out, and a second user interface object may increase in intensity, or fade in, and that this change in intensity provides sensory feedback to the user of the progress in transitioning between the user interface states.” Ex. 1005 ¶¶ 79, 81, 82, 85, 87, Figs. 8A, 8B, 8C; *see* Ex. 1003 ¶ 48 (citing Ex. 1005 ¶¶ 79, 87); Ex. 1023 ¶¶ 42–43 (citing Ex. 1005 ¶¶ 79, 85, 87). A prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect. *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985). Chaudhri teaches visually differentiating a foreground object and a background object by increasing intensity of the foreground object, or decreasing intensity of the background object, or both, in order to provide benefits to a user such as visual feedback. We agree with Petitioner that a

person of ordinary skill would have applied Chaudhri's teachings of visually differentiating objects to the corresponding objects of Ahn by gradually blurring the clock widget to yield benefits such as visual feedback as taught by Chaudhri.

We disagree with Patent Owner's contention that Chaudhri's disclosure of the fade in and fade out animation effect is limited to occurring only after the gesture is complete and cannot establish blurring as a function of the magnitude of the first gesture. PO Sur-Reply 27–28 (citing Ex. 1005 ¶¶ 76, 79). Patent Owner's contention is unsupported attorney argument. We credit the testimony of Dr. Terveen in finding that adjusting the intensity of the background of Ahn by progressively increasing the amount of the blur as taught by Chaudhri increases the visual differentiation between the user-interface object and the background as taught by Chaudhri, which yields the benefits of providing the user with sensory feedback and drawing a user's attention to the most relevant part of the user interface. Ex. 1003 ¶¶ 48, 57–62; Ex. 1023 ¶¶ 39–43.

Finally, we disagree with Patent Owner's contention that Dr. Terveen is incorrect in testifying that blurring occurs either progressively or instantly. PO Sur-Reply 29–30. Dr. Terveen provided this testimony in his original declaration (Ex. 1003 ¶ 62) and the Petition relied on this testimony in contending that blurring progressively is one of two known options. Pet. 22–23 (citing Ex. 1003 ¶ 62). Patent Owner's arguments in Sur-Reply to the contrary are untimely and in addition are unsupported attorney argument.

We find that the combination of Ahn, Chaudhri, and Hinckley teaches limitation [1.d.ii] of claim 1.

Limitation [1.e.i]

Limitation [1.e.i] recites “when the first menu is displayed including the one or more first menu items: detecting, utilizing the touch interface, a first duration of contact on at least one of the one or more first menu items.”

Petitioner contends that Hinckley teaches this limitation in describing a bezel menu that includes multiple icons, each of which is associated with a different function. Pet. 48 (citing Ex. 1006 ¶ 74, Fig. 6; Ex. 1003 ¶ 104). Petitioner contends that Hinckley teaches that a user may tap an icon to access the associated function. *Id.* at 49 (citing Ex. 1006 ¶ 77; Ex. 1003 ¶ 105). Petitioner contends that the bezel menu may include an icon that includes a radial menu icon. *Id.* at 49–51 (citing Ex. 1006 ¶¶ 105–107, Fig. 17; Ex. 1003 ¶¶ 106–107). Petitioner contends that tapping the radial menu icon triggers a default action, and tapping and holding the radial menu icon accesses a radial menu. *Id.* Petitioner contends that adding Hinckley’s bezel menu icon to Ahn’s menu yields Ahn’s menu including an icon in which tapping the icon triggers one action, while tapping and holding the icon triggers a different action, such as opening a radial menu. *Id.* at 52–53 (citing Ex. 1006 ¶¶ 105–107; Ex. 1003 ¶ 110). Patent Owner does not present arguments to the contrary.

We find that the combination of Ahn and Hinckley teaches limitation [1.e.i] of claim 1.

Limitations [1.e.ii] and [1.e.iii]

Limitation [1.e.ii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to not surpass a threshold, performing a first operation.”

Petitioner contends that a person of ordinary skill in the art would have implemented Ahn’s menus to include the multiple selectable icons of

Hinckley, and that at least one of the selectable icons would be associated with a radial menu icon as taught by Hinckley. Pet. 53 (citing Ex. 1006 ¶¶ 105–107; Ex. 1003 ¶ 111). Petitioner contends that Hinckley discloses tapping the radial menu icon would have triggered one action different than an action triggered from tapping and holding the icon. Pet. 53–54 (citing Ex. 1003 ¶¶ 111–113).

Limitation [1.e.iii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to surpass the threshold, performing a second operation.”

Petitioner contends that Hinckley discloses tapping and holding the radial menu icon results in an action different than an action that results from tapping the radial menu icon, and that a person of ordinary skill would have applied this teaching to Ahn’s menu icon. Pet. 54–55 (citing Ex. 1003 ¶¶ 114–115).

Patent Owner presents several arguments in contending that Hinckley does not teach limitations 1.e.ii and 1.e.iii. In particular, Patent Owner contends (a) that the Petition maps two instances of the claimed “contact” to two different icons of Hinckley; (b) that the Board mischaracterized the Petition’s mapping of the two instances of contact; (c) that the Reply improperly changes the Petition’s mapping of the two instances of the claimed “contact”; (d) that a tap on radial menu icon 1714 only triggers a function after radial menus 1715 have been opened, and that tapping radial menu icon 1714 before radial menus 1715 have been opened would not trigger a function.

(a) Whether the Petition maps two instances to two different icons

Patent Owner contends that the bezel menu icon 1712 is a different icon than the radial menu icon 1714, therefore, according to Patent Owner,

Petitioner's contention that tapping icon 1712 would have triggered one action while a tap-and-hold on the radial menu icon 1714 portion of icon 1712 would have triggered a different action maps the claimed instances of contact to two different icons. PO Resp. 25–26 (citing Pet. 51); *see id.* at 30–32. In particular, Patent Owner contends that although icon 1712 includes radial menu icon 1714, tapping and holding icon 1712 only opens the radial menus when the radial menu icon 1714 portion of icon 1712 is selected for the tap-and-hold. *Id.* at 29–30. Otherwise, according to Patent Owner, tapping and holding icon 1712 does not open the radial menus. *Id.*

We disagree. Hinckley discloses that “icon or slot 1712 includes a radial menu icon 1714.” Ex. 1006 ¶ 107. Hinckley also discloses that “radial menus 1715 can be accessed through a tap-and-hold . . . on or near radial menu 1714” and that “tapping on the radial menu icon triggers a default action.” *Id.* Patent Owner's contention that a tap-and-hold of icon 1712 at a location other than the radial menu icon portion 1714 of icon 1712 would not open the radial menus fails to address Hinckley's disclosure that icon 1712 includes radial menu icon 1714, that a tap on radial menu icon portion 1714 of icon 1712 triggers a default action, and that a tap-and-hold on radial menu icon portion 1714 of icon 1712 accesses the radial menus. *See id.*

We also disagree with Patent Owner's contention that the Petition did not map the two instances of the claimed contact to radial menu icon 1714. The Petition contends that “[t]he radial menus 1715 can be accessed through a tap-and-hold of the pen or finger on or near the radial menu icon 1714,” and that “selecting ‘the radial menu icon [1714] triggers a default action.’” Pet. 50 (quoting Ex. 1006 ¶ 107). Although the Petition uses the word “selecting” the radial menu icon, the corresponding disclosure from

paragraph 107 of Hinckley explicitly describes that “tapping on the radial menu icon triggers a default action” and that “the radial menus 1715 can be accessed through a tap-and-hold . . . on or near the radial menu icon.” We find that page 50 of the Petition maps the two instances of the claimed “contact” to both the tap and the tap-and-hold of radial menu icon 1714, and maps the claimed “first” and “second” operations to the corresponding default action and the action of accessing the radial menus as described by Hinckley. Patent Owner’s contention to the contrary is inconsistent with the Petition’s assertion that “selecting ‘the radial menu icon [1714] triggers a default action’” and that “[t]he radial menus 1715 can be accessed through a tap-and-hold . . . on or near the radial menu icon 1714.” Pet. 50 (quoting Ex. 1006 ¶ 107); *see* Ex. 1003 ¶¶ 107, 110; Ex. 1023 ¶ 20.

Further, even if we agreed with Patent Owner’s contention that the Petition maps the first instance of the claimed “contact” to tapping icon 1712 of Hinckley and the second instance of the claimed “contact” to tapping and holding radial menu icon 1714 of Hinckley, we disagree with Patent Owner’s conclusion that the Petition does not show that Hinckley meets limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction. As discussed above, paragraph 107 of Hinckley discloses that “tapping on the radial menu icon triggers a default action” and “a tap-and-hold . . . on or near the radial menu icon” accesses the radial menus. We agree with Petitioner, that Hinckley teaches that “a tap . . . on or near radial menu icon 1714, ‘triggers a default action’ whereas tapping and holding ‘on or near’ the radial menu icon 1714 portion of slot 1712 opens radial menu 1715,” and that “at least a portion of slot 1712 ‘on or near’ radial menu icon 1714 is a ‘common starting point’ that would satisfy both limitations [1.e.ii] and Limitation [1.e.iii].” Reply 10 (quoting Ex. 1006 ¶ 107); *see id.* at 7–10; Ex.

1023 ¶¶ 19–25. Dr. Terveen emphasizes this point in testifying that “tapping anywhere inside menu slot 1712, including the radial menu icon 1714, would activate a default operation” and that “tapping and holding on or near the radial menu icon 1714 of menu slot 1712 opens the radial menu 1715,” where “the default operation” is an operation “other than opening the radial menu.” Ex. 1023 ¶ 21.

Thus, even accepting Patent Owner’s contention that the Petition maps a tap to icon 1712 and maps a tap-and-hold to icon 1714, we find that the Petition itself shows that Hinckley teaches limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction when both the tap and the tap-and-hold disclosed by Hinckley occur on the radial menu icon portion 1714 of icon 1712. *See Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1002 (2016) (“[C]ombinations of prior art that sometimes meet the claim elements are sufficient to show obviousness.”). We find that radial menu icon 1714 is a “common starting point” that would satisfy limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction when the first instance of contact is a tap on the radial menu icon portion of icon 1712 and the second instance of contact is a tap-and-hold on this same portion of icon 1712 as disclosed by Hinckley. *Id.*; Ex. 1003 ¶ 107; *see* Reply 7–10; Ex. 1023 ¶¶ 19–25.

(b) Whether the Board mischaracterized Petitioner’s mapping

Patent Owner contends that the Board mischaracterized Petitioner’s mapping when the Board wrote that “Petitioner contends that Hinckley discloses tapping the radial menu icon [1714] would have triggered one action different than an action triggered from tapping and holding the icon [1714].” PO Resp. 30–31 (quoting Dec. 31). In our Decision, we wrote that the “Petition quotes Hinckley as disclosing that ‘[t]he radial menus 1715 can

be accessed through a tap-and-hold . . . on or near the radial menu icon 1714,” and “selecting ‘the radial menu icon [1714] triggers a default action.” Dec. 31 (quoting Pet. 50–51). According to Patent Owner, the Petition’s use of the word “selecting” instead of the word “tapping” as described by Hinckley in paragraph 107 means that the Petition was not relying on a tap of radial menu icon 1714. *See* PO Resp. 32. Patent Owner contends that “[a]t no point in the record does the Petition (or Dr. Terveen) allege a tap on radial menu icon 1714.” *Id.* (citing Pet. 50–51; Ex. 1003 ¶¶ 107, 114, 161).

We disagree with Patent Owner’s contention that the Board failed to appreciate that the Petition, in contending that “selecting” (rather than tapping) “‘the radial menu icon [1714] triggers a default action’” (Pet. 50 (quoting Ex. 1006 ¶ 107)) meant that Petitioner was not mapping the first instance of the claimed “contact” to Hinckley’s tap for the reasons discussed above in the section (a). *See* PO Resp. 30–32. We highlight that the sentence of paragraph 107 quoted on page 50 of the Petition distinguishes tapping in order to trigger a default action from tapping and holding in order to open the radial menus. Ex. 1006 ¶ 107. The Petition, consistent with the corresponding disclosure in paragraph 107 of Hinckley, distinguishes selecting icon 1714 in order to trigger a default action from tapping and holding icon 1714 in order to open the radial menus. Pet. 50. We find that the Petition both contends and shows that Hinckley describes that tapping on radial menu icon 1714 triggers a default action whereas tapping and holding on the radial menu icon 1714 opens radial menu 1715.

Contrary to Patent Owner’s contention, our Decision to Institute did not depart “from the evidence and theories presented by the petition.” *See Arthrex Inc. v. Smith & Nephew, Inc.*, 935 F.3d 1319, 1328 (Fed. Cir. 2019).

Instead, as in *Arthrex*, “the Board properly relied on the same references, the same disclosures, and the same obviousness theories advanced by the petition and debated by the parties.” *See id.*

(c) Whether the Reply changes the mapping of the two instances

Patent Owner contends that the Reply arguments made by Petitioner improperly change the Petition’s mapping of a tap on icon 1712 with a new mapping of a tap on radial menu icon 1714 which, according to Patent Owner, is a different embodiment excluded by the Petition. PO Sur-Reply 4–7. Patent Owner contends that the arguments made in Reply are untimely and deprive Patent Owner with an opportunity to respond with evidence. *Id.* at 7–9. In particular, Patent Owner contends that the Reply arguments are not responsive to a claim construction proposed by Patent Owner. *Id.* at 8.

Even if we agreed with Patent Owner’s contention that the Petition mapped the first instance of the claimed “contact” to a tap of icon 1712 at a location other than radial menu icon 1714 and mapped the second instance of the claimed “contact” to a tap-and-hold of icon 1714, we find that (a) Petitioner’s mapping in Reply is an appropriate response to Patent Owner’s proposed construction that both instances of “contact” must “begin at a common starting point” and must “be[] on the same menu item(s),” (b) Patent Owner had notice and opportunity to respond to this mapping, and (c) Hinckley’s description of a tap of radial menu icon 1714 that triggers an action that may or may not be different than an action triggered by a tap of the remaining portion of icon 1712 describes a single embodiment of bezel menu icon 1712 that includes radial menu icon 1714, not multiple embodiments of icon 1712.

We find Petitioner’s mapping in Reply appropriate because we disagree with Patent Owner’s contention that Patent Owner did not propose

a claim construction and that Petitioner’s contentions are not responsive to a proposed claim construction. *See* PO Resp. 8. Patent Owner’s proposed construction asserts that the claim requires “instances of a user input on a touch screen that begin from a common starting point—the start of a ‘first duration of contact.’” PO Resp. 11. Patent Owner’s proposed construction also asserts that “the contact being on the same menu item(s) is precisely what the claim requires.” PO Sur-Reply 3.

Petitioner addresses Patent Owner’s proposed construction in contending that Patent Owner’s proposed construction reads unclaimed limitations into the claim. Reply 3; *see id.* at 4–7. We highlight that Petitioner is correct in stating that the language of the claim does not recite the phrase “begin from a common starting point” nor does the claim recite the phrase “being on the same menu item(s).” In order to determine whether the claim is limited to Patent Owner’s proposed construction or whether Patent Owner’s proposed construction improperly reads limitations into the claim as asserted by Petitioner, we would need to construe the claim.⁵ Therefore, we agree with Petitioner that Patent Owner’s contentions that the claim requires two instances of contact that must “begin from a common starting point” and must “be[] on the same menu item(s)” is a proposed construction of the claim.

With respect to notice and opportunity to respond, we disagree with Patent Owner’s contention that Patent Owner was “unjustly deprived . . . of an opportunity to meaningfully respond with evidence.” PO Sur-Reply 7; *see id.* at 9. Patent Owner proposed a similar construction in its Preliminary

⁵ We do not construe limitations 1.e.ii and 1.e.iii here because we apply the prior art to the claim under Patent Owner’s proposed construction.

Response in contending that “each claim mandates that: (1) each of the references to ‘the first duration of contact’ must refer to a single contact and (2) each of the references to ‘the at least one . . . first menu items’ must refer to the same menu item(s).” Prelim. Resp. 23–24. In our Decision to Institute, we applied the prior art to limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction in the Preliminary Response in writing that “we are sufficiently persuaded that Hinckley discloses that icon 1714 shown in Figure 17 allows a user to access one action when a user taps icon 1714 and another action when a user taps-and-holds icon 1714 as discussed in paragraph 107 of Hinckley.” Dec. 32. This put Patent Owner on notice that paragraph 107 of Hinckley teaches two instances of contact that “begin from a common starting point,” thus giving Patent Owner an opportunity to respond with arguments and evidence in the Patent Owner Response. Further, Petitioner, in its Reply, explicitly applied the prior art to limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction. Reply 7–10. Patent Owner again had notice and opportunity to respond with evidence in its Sur-Reply. Although evidence such as “declarations are not ‘typically’ permitted with sur-replies,” we highlight that Patent Owner “had not asked for leave to submit an additional expert declaration,” nor any other evidence, in order to address the Reply. *See Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1384 (Fed. Cir. 2023).

With respect to mapping to a different embodiment, Patent Owner contends that Petitioner’s Reply maps the claim to an embodiment of Hinckley that was excluded in the Petition. PO Sur-Reply 4. In particular, Patent Owner contends that Hinckley’s disclosure of “In some embodiments, tapping on the radial menu icon triggers a default action which may or may not be different than the action associated with tapping on the bezel menu

slot” describes mutually exclusive embodiments. *Id.* (quoting Ex. 1006 ¶ 107). Patent Owner contends that the Reply improperly relies on Hinckley’s embodiment of “tapping . . . radial menu icon [1714]” because, according to Patent Owner, the Petition relies on Hinckley’s embodiment of tapping icon 1712 and excluded Hinckley’s embodiment of tapping radial menu icon 1714. PO Sur-Reply 6–7.

In contending that the Reply relies on a different embodiment of Hinckley, Patent Owner contends that the phrase an “action which may or may not be different” in paragraph 107 of Hinckley describes different embodiments. PO Sur-Reply 5–6. We disagree with Patent Owner. We find that the term an “action which may or may not be different” has the same meaning as the term an “action which may be different,” as well as the same meaning as the term an “action which may not be different.” Whether the Petition or the Reply emphasized Hinckley’s disclosure of “may be different” or “may not be different,” the meaning of these terms is the same, namely, that tapping on or near radial menu icon 1714 triggers an action, and that action is either the same as or different than an action triggered by tapping on the remaining portion of icon 1712. Dr. Terveen emphasized this point in testifying that

Hinckley is saying, look, consistent with my teachings, somebody who’s designing a system could design it so that the tap on the radial menu icon portion of the menu slot has a different action than the default action from tapping on the rest of menu slot 1712, or it could be the same action. So that’s—that’s what this sentence is saying. Hinckley is saying . . . “if you are building a system, you could do it both ways, according to my teachings.”

Ex. 2018, 59:16–25. Dr. Terveen also testifies that the default operation is an operation “other than opening the radial menu.” Ex. 1023 ¶ 21.

We rely on Dr. Terveen’s testimony in finding that a person of ordinary skill in the art would have understood that Hinckley’s disclosure of triggering an action by tapping icon 1714 that is either the same as or different than an action triggered by tapping the remaining portion of icon 1712 describes insignificant variations of Hinckley’s disclosed embodiment of icon 1712. Ex. 1023 ¶ 21; Ex. 2018, 59:16–25; Ex. 1006 ¶ 107. We find that this single disclosed embodiment describes that icon 1712 (a) includes radial menu icon 1714, (b) identifies the location of a touch within icon 1712, (c) performs one type of action if the touch is a tap, and (d) performs the specific action of opening the radial menus if the touch is a tap-and-hold at radial menu icon 1714 within icon 1712. Ex. 1023 ¶ 25; Ex. 1006 ¶ 107. We find that Hinckley’s disclosure of “In some embodiments, tapping on the radial menu icon [1714] triggers a default action which may or may not be different than the action associated with tapping on the bezel menu slot [1712]” (Ex. 1006 ¶ 107) describes one embodiment of bezel menu icon 1712 that includes radial menu icon 1714, including the insignificant variation of associating a particular default action with a particular location of a tap on icon 1712. That is, regardless of whether the action triggered by tapping icon 1714 and the action triggered by tapping the remaining portion of icon 1712 are the same or different, Hinckley discloses one embodiment of an icon 1712 that includes radial menu icon 1714, in which tapping anywhere on icon 1712 triggers an action other than opening the radial menu, and tapping and holding on radial menu icon portion 1714 of icon 1712 triggers the specific action of opening the radial menu. Ex. 1006 ¶ 107; *see* Ex. 1023 ¶ 25.

Therefore, even if we were to agree with Patent Owner that the Petition relied on a tap on icon 1712 at a location other than radial menu

icon portion 1714 of icon 1712 to trigger an action, and the Reply relies on a tap on radial menu icon 1714 to trigger an action, we find that the mapping in the Reply relies on the same embodiment of Hinckley as the mapping in the Petition, namely, bezel menu icon 1712 that includes radial menu icon 1714, performs an action triggered by a tap, and opens radial menus in response to tapping and holding radial menu icon 1714. We also find that the Petition, in quoting from paragraph 107 of Hinckley, put Patent Owner on notice that paragraph 107 of Hinckley discloses that icon 1712 includes radial menu icon 1714, that tapping anywhere on icon 1712—including radial menu icon portion 1714—triggers an action, and that tapping and holding radial menu icon portion 1714 of icon 1712 opens the radial menus.

In conclusion, we find that the Petition and the Decision to Institute both gave Patent Owner notice that the tap and the tap-and-hold on icon 1714 described in paragraph 107 of Hinckley meets limitations 1.e.ii and 1.e.iii under Patent Owner’s proposed construction and that Patent Owner had the opportunity to respond. We find that Petitioner’s mapping in the Reply is proper because (a) it is not new and (b) even if it were new, “where a patent owner in an IPR first proposes a claim construction in a patent owner response, a petitioner must be given the opportunity in its reply to argue and present evidence of anticipation or obviousness under the new construction.” *Axonics*, 75 F.4th at 1384.

(d) Whether tapping the radial menu icon occurs only after the radial menus have been opened

Patent Owner contends that Hinckley’s description of a tap on radial menu icon 1714 occurs only after accessing radial menu icon 1715, and that tapping radial menu icon 1714 before accessing radial menu 1715 would have no effect. PO Resp. 34–35 (citing Ex. 2006 ¶¶ 99–101). Patent Owner

contends that reading the tap described by Hinckley as occurring before the radial menus are open is illogical, because Hinckley describes tapping on icon 1714 in a sentence located between discussions of opening and interacting with radial menus 1715. PO Sur-Reply 13 (citing Ex. 1006 ¶¶ 107–108). Patent Owner also contends that when radial menus 1715 are not deployed, the much larger icon 1712 is available to activate the function triggered by tapping (PO Sur-Reply 10), but when radial menus 1715 are deployed, the underlying icon 1712 is covered by radial menus 1715 (PO Resp. 35).

We disagree. In paragraph 107, Hinckley describes a default action triggered by a tap on icon 1712 or on radial menu icon portion 1714 of icon 1712, and describes accessing the radial menus triggered by a tap-and-hold on icon 1714. Thus, paragraph 107 describes actions that occur before the radial menus are open, in contrast to paragraph 108, which describes actions that occur “[o]nce the radial menu 1715 is exposed.” This reading of the last sentence of paragraph 107 is supported by Dr. Terveen, who testifies that the “final sentence of paragraph [0107] does not state that the radial menu is open. . . . In fact, the very next sentence shows that when Hinckley wanted to discuss operations or functionalities with the radial menu open, it explicitly said so.” Ex. 1023 ¶ 24.

We further highlight that if Patent Owner’s contention that the location of the last sentence of paragraph 107 means that tapping icon 1714 occurs after the radial menus are open, then the location of this sentence would also mean that tapping icon 1712 occurs after the radial menus are open under Patent Owner’s contention. However, Patent Owner contends that tapping icon 1712 occurs when the radial menus are closed, because when the radial menus are open, “the underlying icon 1712 is covered by the

radial menu 1715 and would not be selectable.” PO Resp. 35. Patent Owner’s contentions are logically inconsistent. The logically consistent reading of “tapping on the radial menu icon” and “tapping on the bezel menu slot” in the last sentence of paragraph 107 of Hinckley is that the disclosed tapping of icon 1712 and the disclosed tapping of radial menu icon portion 1714 of icon 1712 occur before the radial menus are open. Therefore, we disagree with Patent Owner’s contention and Dr. Rosenberg’s supporting testimony that paragraph 107 discloses opening the radial menus before tapping icon 1714 because it is inconsistent with Hinckley. We find that paragraph 107 discloses a tap-and-hold that occurs when the radial menus are closed and that performs the action of accessing the radial menus, and that paragraph 108 of Hinckley describes actions that occur after the radial menus are open.

Patent Owner contends that “attempted selection of radial menu icon 1714 before radial menu 1715 is open . . . ‘leads to errors where the functions are different.’” PO Sur-Reply 10 (quoting Ex. 1023 ¶ 22); *see id.* at 10–11; PO Resp. 34–35. We disagree. Dr. Terveen testifies that “under Dr. Rosenberg’s theory,” in which “tapping on radial menu icon 1714 would not result in performance of any function before the radial menu is open . . . would create an unintuitive dead-zone within icon 1712 corresponding to radial menu icon 1714.” Ex. 1023 ¶ 23. We also agree with Dr. Terveen that where the action triggered by tapping icon 1712 is the same as that triggered by tapping icon 1714, tapping icon 1714 would not lead to errors. Ex. 1023 ¶¶ 22–23. Patent Owner does not present evidence or argument to the contrary. We agree with Petitioner and Dr. Terveen in finding that paragraph 107 of Hinckley describes actions, such as a tap and a tap-and-

hold, that occur before the radial menus are open, and that paragraph 108 describes actions that occur after the radial menus are open.

We find that the combination of prior art teaches limitations 1.e.ii and 1.e.iii.

Limitation [1.f]

Limitation [1.f] recites “when the graphical user interface is displayed, detecting, utilizing the touch interface, a second gesture that begins in connection with a second edge of the display and moves inward.”

Petitioner contends that Ahn teaches this limitation in disclosing touching the screen on the right and dragging the touch left to display a menu on the right side of the screen as shown in figures 13a and 13b, and touching the screen on the left and dragging the touch right to display a menu on the left side of the screen as shown in figures 15a and 15b. Pet. 55–58 (citing Ex. 1004 ¶¶ 102–103, Figs. 13a, 13b, 15a, 15b; Ex. 1003 ¶¶ 116–120). Petitioner also contends that Hinckley teaches this limitation in disclosing initiating a gesture on an adjacent bezel and moving inward. Pet. 57–58 (citing Ex. 1003 ¶¶ 119–120). Patent Owner does not present arguments to the contrary.

We find that the combination of Ahn and Hinckley teaches limitation [1.f] of claim 1.

Limitation [1.g]

Limitation [1.g] recites “in response to the detection of the second gesture that begins in connection with the second edge and moves inward, displaying, utilizing the display, a second menu including one or more second menu items.”

Petitioner contends that Ahn teaches this limitation as shown in figures 13a, 13b, 15a, and 15b and as discussed in Petitioner’s analysis of

limitation [1.f]. Pet. 58–60 (citing Ex. 1004 ¶¶ 102–104, Figs. 13a, 13b, 15a, 15b; Ex. 1003 ¶¶ 121–122). Patent Owner does not present arguments to the contrary.

We find that Ahn teaches limitation [1.g] of claim 1.

Limitation [1.h.i]

Limitation [1.h.i] recites “when the second menu is displayed including the one or more second menu items: detecting, utilizing the touch interface, a selection contact on at least one of the one or more second menu items.”

Petitioner contends that the combination of Ahn and Hinckley teaches this limitation. Pet. 60–64. Petitioner contends that Ahn teaches selecting an icon displayed in a list of menu items. *Id.* at 60–62 (citing Ex. 1003 ¶¶ 123–125). Petitioner contends that Hinckley teaches that the displayed menu includes icons, and that when one of the icons is touched by the user, the selected icon provides access to an associated function. Pet. 63–64 (citing Ex. 1006 ¶ 77; Ex. 1003 ¶ 127). Patent Owner does not present arguments to the contrary.

We find that the combination of Ahn and Hinckley teaches limitation [1.h.i] of claim 1.

Limitation [1.h.ii]

Limitation [1.h.ii] recites “in response to the selection contact being detected on the at least one of the one or more second menu items, performing a third operation.”

Petitioner contends that the combination of Ahn and Hinckley teaches this limitation. Pet. 64–65. Petitioner contends that a person of ordinary skill in the art would have understood that Ahn’s menu would include multiple selectable icons such as those described by Hinckley. *Id.* at 64

(citing Ex. 1003 ¶ 129). Petitioner contends that Hinckley teaches detecting a tap on a displayed icon and performing an associated function. Pet. 64–65 (citing Ex. 1006 ¶¶ 51, 66, 72–77; Ex. 1003 ¶¶ 129–130). Patent Owner does not present arguments to the contrary.

We find that the combination of Ahn and Hinckley teaches limitation [1.h.ii] of claim 1.

Limitation [1.i]

Limitation [1.i] recites “wherein the electronic device is configured such that the graphical user interface is displayed in at least one virtual display layer, and at least one of the first menu or the second menu is displayed in at least one other virtual display layer.”

Petitioner contends that Ahn teaches this limitation in disclosing that the menu is displayed in a transparent layer above the standby screen. Pet. 65–67 (citing Ex. 1003 ¶¶ 131–137). Patent Owner does not present arguments to the contrary.

We find that Ahn teaches limitation [1.i] of claim 1.

Conclusion for claim 1

We find that the combination of Ahn, Chaudhri, and Hinckley renders obvious claim 1.

7. Independent claim 101

Petitioner challenges claim 101 as unpatentable over the combination of Ahn, Chaudhri, and Hinckley. Pet. 26–41. With respect to this claim, Patent Owner presents arguments only with respect to limitations [101.d], [101.e.iv], and [101.g]. PO Resp. 72–77.. Pages ix to xi of the Petition show claim 101 along with Petitioner’s notation for each limitation of the claim, which we use below in addressing each limitation.

Limitation [101.a]

Limitation [101.a] recites “An electronic device, comprising: a display; a touch interface; one or more processors; memory; and 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.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.a]. Pet. 76. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.b]

Limitation [101.b] recites “the one or more programs including instructions for: displaying, utilizing the display, a graphical user interface.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.b]. Pet. 76. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.c]

Limitation [101.c] recites “when the graphical user interface is displayed, detecting, utilizing the touch interface, a first gesture that begins in connection with a first edge of the display and moves inward.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.c]. Pet. 77. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.d]

Limitation [101.d] recites “in response to the detection of the first gesture that begins in connection with the first edge and moves inward, displaying, utilizing the display, a first menu as sliding in and including one or more first menu items including a particular application icon.” Petitioner contends that Ahn describes icons associated with menus and sub-menus as shown in figures 4b, 5a–5d, 6b, 7b, 7c, 8c, 9a–9c, 10, 13–15, and 17. Pet. 77 (citing Ex. 1003 ¶¶ 154–155). Petitioner contends that a person of ordinary skill in the art would have understood that some of the functions that Ahn calls menus or sub-menus would have been implemented as applications, such as the contacts and messages menus shown in figure 8c. *Id.* at 78 (citing Ex. 1003 ¶¶ 156–157). Petitioner contends that Chaudhri and Hinckley also teach installing applications on a device. *Id.* at 78–79 (citing Ex. 1003 ¶ 157).

Patent Owner contends that Petitioner relies on the menu shown in figure 8C of Ahn to teach the first menu recited in limitation [101.d] and relies on the menu shown in figure 15(b) of Ahn to teach the second menu recited in limitation [101.g]. PO Resp. 72–73. Patent Owner contends that the menus shown in figures 8C and 15(b) of Ahn are the same menu. *Id.* at 74.

Petitioner contends that the Petition maps limitation [101.d] to the menu shown in figure 13(b) of Ahn. Reply 25–26 (citing Pet. 35–36, 77–79). Patent Owner contends that the theory is absent from the Petition and does not explain why a radial menu icon would have been included in the menu shown in figure 13(b). PO Sur-Reply 31–32.

We agree with Petitioner. In addressing limitation [101.d], the Petition adopts the mappings from limitation [1.d.i] (Pet. 77), which maps

the claimed first menu to Ahn's menu list 1300 (Pet. 35–36). The Petition then states that a person of ordinary skill in the art “would have at least found it obvious that, in the Ahn-Chaudhri-Hinckley combination, the one or more first menu items include a particular application icon.” Pet. 77–79; Ex. 1003 ¶¶ 155–157. The Petition explains that Ahn shows icons similar to those shown in figure 8C in figures 4B, 5A–5D, 6B, 7B, 7C, 9A–9C, 10, 13–15, and 17. Pet. 77. We find that the Petition maps the claimed first menu recited in limitation [101.d] to Ahn's menu list 1300 of figure 13(b) and maps the claimed second menu recited in limitation [101.g] to menu list 1500 of figure 15(b).

We disagree with Patent Owner's contention that the Petition does not explain why a radial menu icon would have been included in menu list 1300 for the reasons given in our analysis of the reasons to combine the teachings of Ahn and Hinckley above. We reiterate that even if some icons would not benefit from a radial menu, a person of ordinary skill in the art would have recognized that other icons would benefit, such as the icons that display sub-menus when selected, such as the settings icon of figure 13(b). Also, we credit the testimony of Dr. Terveen in finding that a person of ordinary skill in the art would have recognized that the functions that Ahn refers to as icons associated with the menus and sub-menus shown in figures 4B, 5A–5D, 6B, 7B, 7C, 8C, 9A–9C, 10, 13–15, and 17 would have been implemented as applications. Ex. 1003 ¶¶ 155–157.

We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.e.i]

Limitation [101.e.i] recites “when the first menu is displayed including the one or more first menu items: detecting, utilizing the touch

interface, a first duration of contact on at least one of the one or more first menu items.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.e.i]. Pet. 79. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.e.ii]

Limitation [101.e.ii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to not surpass a threshold, performing a first operation.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.e.ii]. Pet. 79. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.e.iii]

Limitation [101.e.iii] recites “in response to the first duration of contact on the at least one of the one or more first menu items being detected to surpass the threshold, performing a second operation.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.e.iii]. Pet. 79. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.e.iv]

Limitation [101.e.iv] recites “where the second operation is performed in response to the first duration of contact on the particular application icon

being detected to surpass the threshold, and the first duration of contact being detected to include a slide gesture component after the first duration of contact on the particular application icon is detected to surpass the threshold.” Petitioner contends that a person of ordinary skill in the art would have modified Ahn’s menus to include multiple selectable icons as taught by Hinckley, and to associate at least one selectable icon with Hinckley’s radial menu icon, such that tapping the radial menu icon would perform one action and tapping and holding the radial menu icon would perform another action, such as displaying the radial menu. Pet. 79–80 (citing Ex. 1003 ¶ 161). Petitioner contends that Hinckley teaches that after the radial menu is displayed, the user can slide their finger in a certain direction to access a particular function or menu command as shown in figure 17. Pet. 80–81 (citing Ex. 1003 ¶¶ 162–163).

Patent Owner presents arguments to the contrary similar to those presented for limitations 1.e.ii and 1.e.iii which we find unpersuasive as discussed in our analysis of limitations 1.e.ii and 1.e.iii. PO Sur-Reply 30. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.f]

Limitation [101.f] recites “when the graphical user interface is displayed, detecting, utilizing the touch interface, a second gesture that begins in connection with a second edge of the display and moves inward.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.f]. Pet. 81. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.g]

Limitation [101.g] recites “in response to the detection of the second gesture that begins in connection with the second edge and moves inward, displaying, utilizing the display, a second menu including one or more second menu items.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.g]. Pet. 82.

Patent Owner presents arguments against Petitioner’s contention regarding this limitation which we address in our analysis of limitation [101.d] above. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.h.i]

Limitation [101.h.i] recites “when the second menu is displayed including the one or more second menu items: detecting, utilizing the touch interface, a selection contact on at least one of the one or more second menu items.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.h.i]. Pet. 82. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.h.ii]

Limitation [101.h.ii] recites “in response to the selection contact being detected on the at least one of the one or more second menu items, performing a third operation.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.h.ii]. Pet. 82. Patent Owner does not

present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Limitation [101.i]

Limitation [101.i] recites “wherein the electronic device is configured such that the graphical user interface is displayed in at least one virtual display layer, and at least one of the first menu or the second menu is displayed in at least one other virtual display layer.” Petitioner contends that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation for the reasons given in Petitioner’s analysis of limitation [1.i]. Pet. 82. Patent Owner does not present arguments to the contrary. We find that the combination of Ahn, Chaudhri, and Hinckley teaches this limitation of claim 101.

Conclusion for claim 101

We find that the combination of Ahn, Chaudhri, and Hinckley renders claim 101 obvious.

8. *Dependent claims 2, 3, 7, 9, and 10*

Petitioner challenges dependent claims 2, 3, 7, 9, and 10 as unpatentable. *See* Pet. 67–76. Patent Owner does not separately argue against Petitioner’s showing with respect to the dependent claims. *See* PO Resp. We find that the combination of prior art teaches the limitations of claims 2, 3, 7, 9, and 10 for the reasons given in the Petition.

X. CONCLUSION

We determine that Petitioner has proved by a preponderance of the evidence that claims 1–3, 7, 9, 10, and 101 of the ’413 patent are unpatentable. In summary:

in the following table:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–3, 7, 9, 10, 101	103(a)	Ahn, Chaudhri, Hinckley	1–3, 7, 9, 10, 101	

XI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–3, 7, 9, 10, and 101 of the '413 patent have been proved unpatentable by a preponderance of the evidence; and

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

IPR2024-01083
Patent 10,642,413 B1

FENICK, *Administrative Patent Judge*, concurring.

I concur with the outcome of this Final Written Decision, but write separately because I come to this outcome without relying on the Petitioner's arguments that Ahn, on its own, teaches or suggests, in its Figure 18 and related disclosure, that "as a user utilizes the dragging gesture to open a given translucent menu, the translucent menu would progressively slide onto the display as a function of the magnitude of the user's dragging gesture." Pet. 40; *see also* Ex. 1004 ¶¶ 117–119, Fig. 18; Pet. 36; Pet. Reply 21–22; Ex. 1003 ¶¶ 84, 85, 92; Ex. 1023 ¶ 36. Rather, I agree with the argument and evidence presented by Patent Owner that Ahn's disclosure that "the user drags the graphic shadow 1800" does not teach or suggest the movement of a displayed object as a result of a user action, but rather the movement of the

user's finger across the area of the display where the graphic shadow is being displayed, with the shadow graphic being an identifier for notifying a start position of the touch and drag operation. PO Resp. 16–17 (citing Ex. 2006 ¶¶ 57–59), 56–59 (citing Ex. 2006 ¶¶ 54–56, 143–146); PO Sur-reply 23–24.

Thus, my concurrence is based, with respect to limitations [1.d.i] and [1.d.ii] of claim 1, on the teachings of the combination of Ahn and Hinckley (as described at Pet. 37–39) and Ahn and Chaudhri (as described at Pet. 41–45).

I agree with and join in my colleagues' analysis in all other respects.

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Patent 10,642,413 B1

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