

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,
Patent Owner.

Case IPR2024-01084
Patent 10,649,578

**PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE**

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PETITIONER’S EXHIBIT LIST

APPLE-1001	U.S. Patent No. 10,649,578
APPLE-1002	U.S. Patent No. 10,649,578 File History
APPLE-1003	Declaration of Dr. Loren Terveen
APPLE-1004	U.S. Pat. Apl Pub. No. 2010/0095240 (“Shiplacoff”)
APPLE-1005	U.S. Pat. No. 9,658,766 (“Nan”)
APPLE-1006	First Complaint, <i>Smith Interface Technologies, LLC v. Apple Inc.</i> , 3-23-cv-01187, S.D. Cal. (June 27, 2023)
APPLE-1007	Exhibit A2 of Infringement Contentions, <i>Smith Interface Technologies, LLC v. Apple Inc.</i> , 3-23-cv-01187, S.D. Cal. (June 5, 2024)
APPLE-1008	U.S. Pat. No. 9,311,112 (“Shaffer”)
APPLE-1009	U.S. Pat. No. 8,547,244 (“Duarte”)
APPLE-1010	U.S. Pat. No. 8,375,336 (“Matthews”)
APPLE-1011	U.S. Pat. App. Pub. No 2010/0185989 (“Shiplacoff ’989”)
APPLE-1012	U.S. Pat. No. 9,716,874 (“Jacobs”)
APPLE-1013-1019	RESERVED
APPLE-1020	United States District Courts — National Judicial Caseload Profile (Dec. 31, 2023) United States Courts (uscourts.gov), https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf (last visited June 25, 2024)
APPLE-1021	Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Guidance”)

APPLE-1022 Case Management Order, *Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187, S.D. Cal. (June 20, 2024)

APPLE-1023 Reply Declaration of Dr. Loren Terveen

APPLE-1024 Transcript of Deposition of Dr. Vijay Madisetti

I. Introduction

Patent Owner's ("Smith's") arguments focus on rebutting a simple case of obviousness established in the Petition: in addition to utilizing a "swipe up" gesture to switch between two display modes (*e.g.*, full screen mode to card mode), as detailed in a non-limiting example of gesture input set forth in Shiplacoff, it would have been obvious to a POSITA to utilize a different and yet other well-known gesture, such as a "flick" or "tap" (which Shiplacoff used in a different of its examples) to alternatively switch between two other display modes (*e.g.*, full screen mode to launcher mode). Smith's arguments fail because they unjustifiably turn away from Shiplacoff's express teaching by demanding that a POSITA would have been limited to the details offered by Shiplacoff in describing its non-limiting "examples" when selecting a gesture to transition among display modes.

Shiplacoff teaches that "the user can switch among ... various [display] modes by performing a gesture." APPLE-1004, [0127]. To illustrate, Shiplacoff offers various examples that it identifies as non-limiting. APPLE-1004, [0124]-[0132]. Among its non-limiting examples, Shiplacoff describes several display modes through which a user may select and interact with different activities, including: (1) a full screen mode, in which an activity occupies substantially all of the display; (2) a card mode, in which the interfaces of several activities are displayed simultaneously; and (3) a "launcher" screen mode, in which icons

associated with activities are displayed and may be selected to launch a new activity. *See* APPLE-1004, [0063], [0068]-[0074], [0124]-[0132].

Notably, in setting forth non-limiting gestures, Shiplacoff offers that “[o]ne example of such a gesture is a ‘swipe up’ gesture beginning in gesture area 102 and extending onto screen 101.” APPLE-1004, [0127]. In doing so, while taking pains to confirm reference to just “one embodiment,” Shiplacoff offers that “such a [‘swipe up’] gesture switches from full-screen mode to card mode....” APPLE-1004, [0127]. Throughout, Shiplacoff is clear that it is using “examples” to demonstrate the broader concept of gesture manipulation to achieve display mode transitions, and with respect to gestures specifically, Shiplacoff goes further by expressly clarifying that changes can be inspired by gestures other than those described by its examples. *See* APPLE-1004, [0124]-[0132] (“other gestures can be used for mode changes”).

The Petition and record evidence establish that, in view of the wide range of known gestures that are clearly contemplated by Shiplacoff, a POSITA would have known and found it obvious to switch from among display modes (*e.g.*, full screen mode to the launcher screen mode) using a similarly wide range of known gestures, including gestures that were among those described by Shiplacoff itself, which include gestures with a “movement parameter” that differs from that of a “swipe up” and, yet, that is not above a movement threshold (*e.g.*, a “tap” or

“flick”). The Petition explained how selection of such a gesture would have been obvious both in the context of Shiplacoff’s own teachings and in the context of a combination of Shiplacoff with Nan. *See* Petition, 17-24, 43-47; APPLE-1003, [34]-[40], [54]-[61], [87]-[88]. Indeed, driving the obviousness home, Nan explicitly describes determining “which interface to present based on one or more factors of the gesture,” including “the length of the gesture, speed, or a number of inputs (e.g., fingers).” APPLE-1005, 7:30-46; Petition 46-47.

Despite Smith’s attempt to overly complicate the issue, this is a straightforward case of obviousness. If the Board finds it would have been obvious for a POSITA to have selected a well-known gesture, for example, a “flick” or “tap” gesture, to switch from Shiplacoff’s full screen mode to Shiplacoff’s launcher screen, the Challenged Claims are unpatentable based on both grounds.

II. Shiplacoff Teaches Changing Between Display Modes Through Detection of Various Gestures, Rendering Obvious Distinguishing Gestures Based on Their Characteristics, Including the Claimed Parameters

The POR seeks to limit the arguments set forth in the Petition to the references made in the Petition to implementation examples set forth by Shiplacoff, which involved the use of a “tap or flick” to change from full screen mode to the launcher screen. *See* POR, 1 (“Petitioner’s Ground 1 mapping is premised on the assertion that Shiplacoff’s ‘swipe up’ gesture and ‘tap or flick’

input are the claimed ‘second input’”). But the Petition is not so limited. The POR further attempts to limit Shiplacoff, by attempting to establish through reference to one of Shiplacoff’s examples that it teaches “tap or flick” gestures being limited to a “different operational context[]” that does not inform a transition from full screen mode to the launcher screen. *See* POR, 32-38, 43-47. But this argument fails to regard express statements in Shiplacoff, which recognize its examples as such, and that otherwise clarify that Shiplacoff’s selection of gestures within its examples was for illustrative purposes, and that “other gestures can be used for mode changes.” *See* APPLE-1004, [0124]-[0132].

Indeed, more broadly, the POR’s theory of non-obviousness rests on three contentions: (1) that “[n]either Shiplacoff nor Duarte-992 suggest distinguishing between user inputs based on a movement threshold” (*see* POR, 39-42); (2) Shiplacoff and Duarte-992 “teach away” from using a “tap” or “flick” to change from full screen mode to the launcher screen (*see* POR, 47-54); and (3) that a “tap” does not include a movement across a screen (*see* POR, 55-57). Each of these contentions are contrary to the teachings of the prior art and demonstrably false.

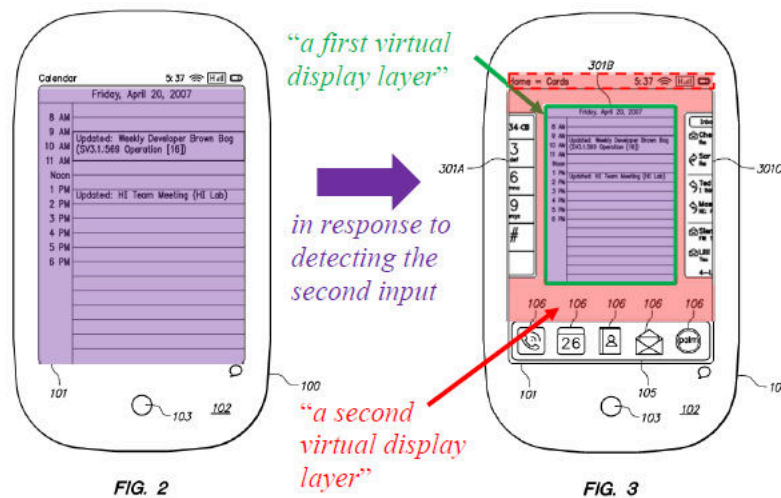
A. Ground 1 Established, Consistent with Limitation [1k], the Obviousness of Mode Transitions Based on Varying Parameters of Gestures Of Which “Tap” and “Flick” Were Examples

As explained in the Petition, Shiplacoff teaches that “the user can switch among the various modes by performing a gesture.” APPLE-1004, [0127];

Petition, 15-16, 17-24 (citing and applying same). Shiplacoff offers several non-limiting “examples” for gestures that a user may use to trigger a switch in display modes. *See* APPLE-1004, [0124]-[0132]. In “[o]ne example,” Shiplacoff introduces “a ‘swipe up’ gesture beginning in gesture area 102 and extending onto screen 101.” APPLE-1004, [0127]. In that same paragraph, Shiplacoff explains that such gestures can be used to trigger “switch[ing] from full-screen mode to card mode...,” and thus, among display modes. APPLE-1004, [0127]. And yet, as previewed above and as indicated in the Petition, Shiplacoff is careful to point out that the gestures it describes are merely “examples” and Shiplacoff suggests that “other gestures can be used for mode changes.” *See* APPLE-1004, [0124]-[0132]. Beyond this, Shiplacoff explains that it has left the implementation details open to the designer. APPLE-1004, [0132] (“[o]ne skilled in the art will recognize that mode changes can take place in response to other types of commands, contexts, and/or environmental factors.”); APPLE-1023, [12].

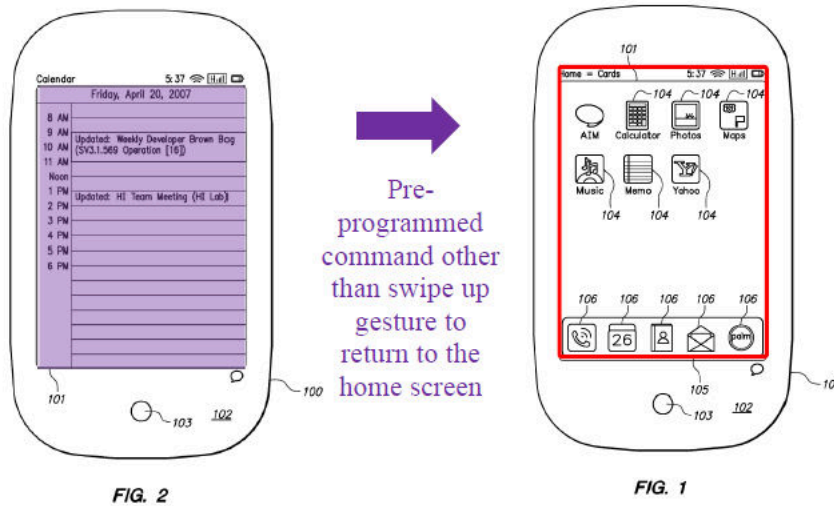
In light of these teachings and with respect to Limitations [1i]-[1k], the Petition explained (a) how Shiplacoff describes that, in at least some embodiments, a gesture with a movement parameter that is above a movement threshold (*e.g.*, a “swipe up” gesture) would have performed one transition (*e.g.*, transitioning Shiplacoff’s device from full screen mode to card mode, consistent with [1i] and [1j]), and (b) that it would have been obvious to utilize a gesture with a movement

parameter that is not above a movement threshold (e.g., a “flick” or “tap” gesture) to perform a different transition (e.g., from full screen mode to the “launcher” screen, consistent with [1i] and [1k]). *See* Petition, 15-24; APPLE-1023, [22]. The Petition even provided two diagrams to help visualize its explanation of these positions. *See* Petition, 18, 24. In a first diagram, the Petition illustrated how Shiplacoff teaches that a “swipe up” gesture transitions from full screen mode to card mode. Petition, 18; APPLE-1023, [11].



APPLE-1004, FIGS. 2 (left), 3 (right).

Id. And in a second diagram, the Petition illustrated how “it would have been obvious to a POSITA that, when a different pre-programmed gesture, such as a tap or flick, is used, such a gesture . . . would have returned the display . . . to the launch screen in FIG. 1 that includes the calendar icon.” Petition, 24; APPLE-1023, [12].



APPLE-1004, FIGS. 2 (left), 1 (right).

Id.

Smith does not dispute that Shiplacoff's "swipe up" gesture meets limitations [1i] (and corresponding limitations [15e] and [27d]) and [1j] (and corresponding limitations [15f], and [27e]). *See* POR, 33-34 (taking no issue with the Petition's mapping of limitations [1i] and [1j]). Rather, Smith focuses on the use of Shiplacoff's "flick" and "tap" gestures, and Shiplacoff's introduction of those gestures when describing changes within its card mode (*e.g.*, closing a card while in the card mode); Smith urges a reading of Shiplacoff that would have those gestures bound to this example. *See* POR, 34-38.

But, as mentioned, portions of Shiplacoff tell the reader exactly the opposite, by instead urging that disclosed gestures are intended to serve merely as "examples" and encouraging the reader to consider when reviewing its use cases

that “other gestures can be used for mode changes.” *See* APPLE-1004, [0124]-[0132]. Smith does not offer any basis for disregarding these highly relevant statements by Shiplacoff, much less even acknowledge them, despite reference to them by the Petition and by Dr. Terveen. *See, e.g.*, Petition, 16, 22; APPLE-1003, [52]-[53], [59]. In fact, when responding to questions during deposition, Dr. Terveen again and further highlighted the flexibility that a POSITA would have understood from Shiplacoff. *See* SMITH-2006, 50:21-57:17 (questions and answers related to Shiplacoff’s mode change examples). Yet again, not even an acknowledgement of this testimony by Smith in the POR.

Based on Shiplacoff’s express indication that disclosed gestures are merely “examples” and that “other gestures can be used for mode changes,” the Petition also explained that a POSITA would consider it obvious to use a known alternative gesture with a distinct “movement parameter” that is “above a movement threshold” instead of the disclosed swipe up gesture, and for an example of such a known alternative gesture, the Petition looks no further than Shiplacoff itself for disclosure of tap/swipe gestures. *See* Petition, 23-24.

Smith is left by Shiplacoff’s express disclosure and the Petition’s case for obviousness to distract with unavailing reference to Shiplacoff’s introduction of these alternative gestures within the context of its description of exemplary use cases. The fact remains—these are indeed also examples of gestures, which were

recognized as distinguishable by Shiplacoff itself¹. APPLE-1023, [13]. Nor does this disqualify them as among the “other gestures” contemplated by Shiplacoff that “can be used for mode changes.” *See* APPLE-1004, [0124]-[0132]; EX1023, [13]. Indeed, a POSITA would have recognized from Shiplacoff alone: (1) disclosure of gesture use to instigate mode changes, (2) disclosure of swipe up as merely an example of a gesture to be used to instigate mode changes, (3) disclosure that “other gestures can be used for mode changes,” and (4) disclosure of numerous examples of “other gestures,” including tap and flick. *See* Petition, 15-24; APPLE-1023, [13]. And therefore, a POSITA would have found it obvious, from the text of Shiplacoff, to use a gesture with a distinct “movement parameter” that is not “above a movement threshold” (*e.g.*, a tap or flick) to instigate a change from full

¹ Indeed, Shiplacoff teaches its system is capable of recognizing and distinguishing numerous gestures, including: “tapping;” “double-tap;” “dragging;” “tapping and holding;” “flicking;” “swipe up;” “swipe down;” and “multi-finger gesture[s] such as a pinch.” *See, e.g.*, APPLE-1004, [0077], [0084], [0091], [0098], [0100], [0104], [0112], [0113], [0124]-[0129], [0169]; APPLE-1023, [13]. These and “other” gestures are described as causing multiple possible outcomes depending at least on where they are performed on the screen and the context of what’s being displayed at the time the gesture is received. *See id.*

screen mode to the launcher screen. *Id.* Moreover, even failing somehow to appreciate from the text or context of Shiplacoff disclosure that tap and flick would serve as known potential alternatives to the disclosed and yet exemplary use of a swipe up gesture within Shiplacoff’s display mode use case, which a POSITA would not, the Petition further clarifies that a tap or flick gesture would have been “a matter of design choice” as an alternative to the “swipe up” gesture, for transitioning between display modes. *Id.*

B. Shiplacoff, Through Duarte-992, Confirms Using a “Movement Threshold” to Differentiate Gestures, and Neither Teach Away From the Petition’s Explanation of Doing So

Smith argues that “[n]either Shiplacoff nor Duarte-992 suggest distinguishing between user inputs based on a movement threshold” (*see* POR, 39-42), and further that “Shiplacoff teaches away from using its ‘flick’ to switch from ‘full-screen mode’ to the ‘launcher screen’” (*see* POR, 47-54). Not so. “A reference does not teach away...if it...does not criticize, discredit, or otherwise discourage investigation into the invention claimed.” *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009). Shiplacoff provides no such teaching. APPLE-1023, [14]-[15].

Importantly, after providing examples of “switch[ing] among the various modes by performing a gesture,” Shiplacoff clarifies that, “[i]n other embodiments, other gestures can be used for mode changes....” APPLE-1004, [0127]-[0129].

And Shiplacoff ends the section of its description titled “Switching Among Modes” with the invitation that “[o]ne skilled in the art will recognize that mode changes can take place in response to other types of commands, contexts, and/or environmental factors.” APPLE-1004, [0132]. Not once in this section does Shiplacoff criticize, discredit, or otherwise discourage one of skill in the art from utilizing any type of gesture to change modes, much less discredit the use of known gestures (such as “tap”) to change display mode. *See* APPLE-1004, [0124]-[0132]; APPLE-1023, [15].

Smith argues that a “POSITA would have recognized that, to program a device such that a particular input triggers a switch from ‘full-screen mode’ to either the ‘launch screen’ or one of the other display modes, the input must not already be programmed to trigger a different action for manipulation of on-screen elements in the application,” and that “Shiplacoff—via Duarte-992—discloses that its ‘flick’ is an on-screen input that, when in ‘full-screen mode,’ is already programmed to trigger ‘scrolling’ of displayed objects.” POR, 49-54. This argument is inconsistent with Shiplacoff, Duarte-992, and the understanding of a POSITA. *See* APPLE-1023, [16]-[21].

Both Shiplacoff and Duarte-992 recognize that the same type of gesture can have different outcomes with respect to the same display mode depending on where, when, and how the gesture is input by the user. APPLE-1023, [16]; *see*

SMITH-2006, 40:6-42:14 (Dr. Terveen explaining the same in response to deposition questions), 44:16-57:17 (same). For example, with respect to the card mode illustrated in FIG. 6E, Shiplacoff teaches that, “[o]nce the telephone application is in the central position in card 301A as shown in FIG. 6E, the user can tap on card 301A...to switch to full-screen mode, as shown in FIG. 6F.” APPLE-1004, [0098]. However, FIG. 6E also shows that quick launch area 105 is simultaneously displayed, “including additional icons 106 for launching commonly used applications and other functions,” which a user can tap to “launch additional activities.” APPLE-1004, FIG. 6E, [0063], [0099]. In other words, exposing Smith’s argument, Shiplacoff associates the same type of input—a tap—with two different functions performed with respect to the same display, shown in FIG. 6E, depending on where the input is detected. APPLE-1023, [17]. A tap on card 301A displays the telephone application in full screen mode, whereas tapping one of the icons 106 launches the application associated with the tapped icon. APPLE-1004, [0098]-[0099]; APPLE-1023, [17].

Duarte-992 goes further². Duarte-992 describes that slight variations in input can change the resulting operation. APPLE-1023, [18]. For example, with respect to the “scrolling” operation on which Smith focuses, Duarte-992 describes two similar, yet distinct, types of input: a “drag-scroll” gesture and a “flick” gesture. *See* SMITH-2003, [0069]-[0072]; APPLE-1023, [18]. For both the “drag-scroll” and “flick,” the gesture “must start moving immediately upon contact with screen 101.” SMITH-2003, [0069] (“In one embodiment the drag must start moving immediately upon contact with screen 101, in order to be recognized as a scroll”), [0070] (“the flick must start immediately upon contact with screen 101”). The difference between these two gestures is how the user’s finger leaves the surface of screen 101. *Id.* For a “flick,” the “user’s finger must leave the surface of screen 101 before stopping movement,” whereas, for a “drag-scroll,” the user’s finger comes to rest before leaving the surface. *See* SMITH-2003, [0070]; APPLE-1023, [18]. Duarte-992 confirms the distinction by teaching that “[a] drag-

² Notably, Dr. Madisetti did not seem to notice being questioned with respect to a different version of Duarte-992 than he cited to until told by counsel. *See* APPLE-1024, 110:5-130:3. This is unsurprising, as Dr. Madisetti admitted to not carefully reading the paragraphs of the references to which he cited. *See* APPLE-1024, 67:17-78:12.

scroll may be converted into a flick by lifting the finger before coming to a rest.”

Id. And whereas for a drag-scroll the resulting scroll amount is “proportional to the distance moved by the user’s finger,” for a “flick” the scroll amount is “proportional to the speed **and** distance which the user flicked.”³ SMITH-2003, [0069]-[0070]; APPLE-1023, [18].

Based on these teachings, a POSITA would have understood or at least found obvious that Shiplacoff’s device would have been able to distinguish between “flick” gestures depending on when, where, and how that gesture was input by the user. APPLE-1023, [19]. For example, like the “swipe up” gesture described for changing modes, a “flick” gesture started in the gesture area 102 or near an edge of screen 101 would have been distinguishable from a “flick” gesture

³ Notably, these teachings of Duarte-992 contradict Smith’s and Dr. Madisetti’s contention that the only basis upon which Shiplacoff distinguishes inputs that involve movement across the display is by “whether the input does or does not include contact with an off-screen ‘gesture area.’” POR, 40; SMITH-2004, [76]. In fact, Duarte-992 describes the ability to distinguish gestures based on at least speed, distance, and location. *See* SMITH-2003, [0069]-[0070] (basing functionality on speed and distance), [0077]-[0078] (basing functionality on location, speed, and distance).

started well within screen 101 and its display of a particular activity. *See* APPLE-1004, [0127]; *see also id.*, [0064] (describing use of the “touch-sensitive gesture area 102 for entering gesture-based commands”); APPLE-1023, [19]. In fact, Smith and Dr. Madisetti acknowledge that Shiplacoff is able to at least distinguish gestures that begin in gesture area 102 and cross over onto screen 101 from those that start on screen 101. POR, 41; SMITH-2004, [78]-[79]. This distinction is simply a matter of degree and demonstrates that when, where, and how a gesture is received can alter the outcome associated with the gesture. APPLE-1023, [19].

Furthermore, Duarte-992 teaches that “[i]n one embodiment a modifier key, such as a shift key, is provided.” SMITH-2003, [0064]. Duarte-992 teaches that “[c]ertain commands performed in touch-sensitive screen 101 can be modified by performing the command while holding down the modifier key, or by pressing the modifier key prior to performing the command.” *Id.* In other words, Duarte-992 provides even further mechanisms by which Shiplacoff’s device may assign different functions to the same “command.” APPLE-1023, [20]. For example, a “flick” received while the modifier key is not depressed might scroll, while a “flick” received while the modifier key is held down might change display mode. APPLE-1023, [20].

Thus, contrary to Smith’s contention that “Shiplacoff teaches away from using its ‘flick’ to switch from ‘full-screen mode’ to the ‘launcher screen’” (*see*

POR, 49), Shiplacoff and Duarte-992 provide several mechanisms (*e.g.*, a gesture area, a modifier key, and recognition of the varying characteristics of a gesture, such as location, speed, and distance) by which a device may distinguish between different instances of a given type of input (*e.g.*, a tap or flick) received in a given display mode and assign functionality consistent with those distinctions. APPLE-1023, [21].

C. A POSITA Would Have Understood that a “Tap” Gesture Can Include Less Than a Threshold Amount of Finger “Movement Across a Display in a Direction,” Consistent with Limitation [1i]

The POR takes the position that “a POSITA would have understood the ‘tap’ input described by Shiplacoff to be a touchscreen input that does *not* include movement across the screen.” POR, 55-56 (emphasis in original). Neither Smith nor Dr. Madisetti cite any evidence supporting this position. This lack of any objective support is unsurprising: Smith’s argument is inconsistent with the knowledge of a POSITA as of the Critical Date, as demonstrated by contemporaneous evidence cited in the Petition.

Indeed, contrary to Smith, the Shaffer reference that was highlighted in the Petition describes:

For example, a tap gesture may be effectively defined by a sequence of two, or optionally, three sub-events. First, a touch should be detected, and this will be sub-event 1. For example, the touch sub-event may be a user's finger touching a touch-sensitive surface in a view that includes the event recognizer having state machine 400. Second, an optional measured delay where the touch does not substantially move in any given direction (e.g., any movement of the touch position is less than a predefined threshold, which may be measured as a distance (e.g., 5 mm) or as a number of pixels (e.g., 5 pixels) on the display), and the delay is sufficiently short, would serve as sub-event 2. Finally, termination of the touch (e.g., liftoff of the user's finger from the touch-sensitive surface) will serve as sub-event 3. By coding the event recognizer state machine 400 to transition between states based upon receiving these sub-events, the event recognizer state machine 400 effectively expresses a tap gesture event definition. However,

APPLE-1008, 28:37-62. In other words, according to Shaffer, POSITAs knew what is common sense—a “tap” may include some small amount of movement of a user's finger, so long as the movement is “less than a predefined threshold” and the time to liftoff of the user's finger is “sufficiently short.” *Id.*; APPLE-1023, [24].

The Matthews reference that was highlighted in the Petition similarly establishes that POSITAs considered movement, albeit limited amounts of movement, as an attribute of a tap gesture. To this point, Matthews offers that, “[i]f the duration of the gesture does not comprise a distance of uninterrupted movement above a predefined distance or does not meet a predefined threshold time period, the gesture is considered a tap-type operation....” APPLE-1010, 10:65-11:7; *see also id.*, APPLE-1010, 3:38-46. Matthews clarifies further by

pointing out that it is the amount of movement or time that distinguishes taps from other types of gestures, not the mere presence of movement or time. APPLE-1010; 11:7 (“Otherwise, the gesture is considered a drag operation.”). In other words, movement of a user’s input may be detected below the threshold distance (*e.g.*, a *de minimis* amount of movement) and the input will still be interpreted as a “tap-type operation.” *See* APPLE-1010, 10:65-11:7; APPLE-1023, [25].

Indeed, with respect to independent claim 27, the Petition and Dr. Terveen relied upon Shaffer and Matthews to establish the obviousness of distinguishing based on “the difference in the gestures[, which] include the time duration of the touch (which then determines the speed), the length of the movement after the initial touch, and the directionality of the movement after the initial touch.” Petition, 36-37; APPLE-1003, [80]. Smith does not offer any evidence to the contrary. Nor did Smith even ask Dr. Terveen about his testimony on this issue.

Accordingly, the record evidence leaves no room for debate. A POSITA reading Shiplacoff and seeing its express reference to “tap” would have understood and found obvious from Shiplacoff to transition among Shiplacoff’s display modes based on gestures that include “movement across the display screen in a direction,” and that the “tap” has a “movement parameter” that is not “above a movement threshold.” APPLE-1023, [27]; *see* Petition, 24 (“it would have been obvious to a POSITA that when a different pre-programmed gesture, **such as a tap**...is used,

such a gesture (“second input”) “*does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold*”) (emphasis in original, highlighting added).

III. Ground 2’s Combination with Nan Further Underscores the Obviousness of Utilizing a “Movement Threshold” to Distinguish Between Gestures

Smith argues that Ground 2 does not meet the claim language for two reasons: (1) “Petitioner’s contentions for substituting Nan’s ‘edge gesture’ for Shiplacoff’s ‘swipe up’ gesture are limited to how Nan’s ‘edge gesture’ purportedly satisfies the requirements of Limitation [1j], [15f], and [27e] (not [1k], [15g], and [27f])” (*see* POR, 57-60); and (2) “Petitioner has not shown that a POSITA would have sought to modify Shiplacoff to utilize Nan’s ‘edge gesture,’ as doing so would render Shiplacoff’s ‘gesture area’ inoperable” (*see* POR, 60-64). Each of these arguments are based on an overly narrow view of the combination, looking only to “the disclosures of [the] individual prior-art references,” which the law rejects. *See Randall Mfg. v. Rea*, 733 F. 3d 1355, 1362 (Fed. Cir. 2013).

A. The Shiplacoff/Nan Combination Would Have Determined Which of Different Interfaces to Display Based on the Claimed Parameters of a User Input

On pages 46-47, the Petition explains how the combination of Shiplacoff and Nan (referred to as “the SNC system”) would have rendered Limitations [1i]-[1k] obvious. For example, the Petition explained that, “in SNC, an edge gesture

with a certain length, speed, hold time, or a number of inputs, is used to execute a change from the full-screen mode to the card mode.” Petition, 46-47. “SNC’s system would have determined that an edge gesture occurred when the detected user input movement is above the movement threshold associated with one or more of the length, speed, and number of inputs of the edge gesture.” Petition, 47.

In support, the Petition cited Nan’s teachings with respect to FIG. 8, which “depicts a method 800 for enabling edge gestures including determining an interface to present based on some factor of the gesture.” APPLE-1005, 7:9-55; Petition, 46-47 (citing same). In other words, the entire point of FIG. 8 is to select between multiple possible interfaces to display based on variations in “one or more factors” of the edge gestures. APPLE-1005, 7:30-44; APPLE-1023, [29]. Nan teaches that, “[i]n some cases, two or more factors of a gesture determine which interface to present such as a drag-and-hold gesture having a drag length and hold time or a drag-and-drop gesture having a drag length and drop position.” APPLE-1005, 7:34-38.

With respect to FIG. 8, Nan teaches an example in which “block 804 may determine to present...an application-selection interface in response to a relatively short single-finger gesture, or a system-control interface permitting selection to shut down computing device 102 in response to relatively long single-finger gesture, for example.” APPLE-1005, 7:38-44; Petition, 46-47 (citing same). In

other words, the very example provided in Nan is one in which the device is choosing to which of two different interfaces the display should be transitioned based on whether a single-finger gesture is above or below a threshold (*i.e.*, whether the gesture is “relatively short” or “relatively long”). *See id.*; APPLE-1023, [30].

Limitation [1j] of the '578 Patent recites displaying one interface “in accordance with a determination that the second input meets one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold,” and limitation [1k] recites displaying a different interface “in accordance with a determination that the second input does not meet the one or more criteria that is met when the second input is detected to include the movement parameter that is above the movement threshold.” APPLE-1001, 96:13-32. In other words, the differentiating determination in both limitations is the same: whether “the second input is detected to include a movement parameter that is above a movement threshold.”⁴ *See id.*; Petition, 46 (noting this determination is common to [1j] and [1k]); APPLE-1023, [31]. As noted above, the Petition

⁴ Limitations [15f] and [27e] recite similar limitations as [1j], and limitations [15g] and [27f] recite similar limitations as [1k]. The arguments here are thus similarly applicable to these limitations.

explained that the SNC system would make this same differentiating determination. Petition, 47 (“SNC’s system would have determined that an edge gesture occurred when the detected user input movement is above the movement threshold associated with one or more of the length, speed, and number of inputs of the edge gesture.”).

In the SNC system described in the Petition, when it is determined that an edge gesture “is above the movement threshold associated with one or more of the length, speed, and number of inputs of the edge gesture”—akin to the “relatively long single-finger gesture” example described by Nan—the interface would change from the full-screen mode to the card mode. *See* Petition, 46-47; APPLE-1023, [32]. And as the Petition earlier described, when the gesture did not meet these criteria—akin to the “relatively short single-finger gesture” example described by Nan—the interface would change from the full-screen mode to the launcher screen. *See* Petition, 23-24; APPLE-1023, [32].

In other words, at least one attribute of the SNC system, would have been that, consistent with the teachings of Nan, “a ‘gesture handler 128 may determine the length of the gesture, speed, or a number of inputs (e.g., fingers),’ and a corresponding user interface may be determined.” Petition, 43; *see also id.*, 43 (“A POSITA would have” applied “the teachings of Nan to Shiplacoff such that Shiplacoff’s system can implement gestures such as Nan’s edge gestures”), 44

(“For example, Shiplacoff’s system would have been modified to incorporate software, code, and/or related programming to recognize certain gestures, *e.g.*, an edge gesture with a certain length, speed, hold time, or a number of inputs, to execute a change from the full-screen mode to the card mode”); APPLE-1023, [33].

Thus, contrary to Smith’s arguments, the SNC system was never limited to only addressing limitation [1j], as the teachings of Nan were equally applicable to both limitations [1j] and [1k]. APPLE-1023, [33].

B. The Combination of Shiplacoff and Nan Described in the Petition Complements Shiplacoff’s Intended Purpose

Smith’s arguments against the motivation to combine Shiplacoff and Nan are premised on its contention that “[i]ncorporating Nan’s edge gesture into Shiplacoff’s device would render Shiplacoff’s off-screen ‘gesture area’ inoperable.” POR, 62. This contention misunderstands both Shiplacoff and the combination of Shiplacoff and Nan proposed in the Petition.

Shiplacoff describes that, “[i]n one embodiment, device 100 also includes a touch-sensitive gesture area 102 for entering gesture-based commands....” APPLE-1004, [0064]. In other words, only some embodiments of Shiplacoff’s gesture area 102 include a touch-sensitive gesture area 102. *See id.*; APPLE-1023, [35]. Shiplacoff is clear that “[t]he present invention can be implemented,

according to various embodiments, in any type of device having a touch-sensitive screen, and is not limited to devices having the listed functionality.” APPLE-1004, [0066]; *see also id.*, [0177].

Gesture area 102 is not a required part of Shiplacoff’s device 100, nor is it necessary for switching between display modes. As described above, Shiplacoff teaches “the user can switch among the various modes by performing a gesture.” APPLE-1004, [0127]. While Shiplacoff describes examples of gestures “beginning in gesture area 102 and extending onto screen 101” for switching between display modes, Shiplacoff goes on to clarify that “other gestures can be used for mode changes” and that “[o]ne skilled in the art will recognize that mode changes can take place in response to other types of commands, contexts, and/or environmental factors.” APPLE-1004, [0127]-[0132]. Because Shiplacoff contemplates implementations without a gesture area 102, it discloses a lack of reliance on gesture areas and thus implementations that would not be rendered inoperable through removal of the same. APPLE-1023, [36].

As the Petition explains, “[a] POSITA would have implemented Nan’s teachings into Shiplacoff’s system through programming efforts well-within the knowledge and capabilities of a POSITA,” and “[a]s part of this programming, Nan’s gesture handler would have been incorporated into Shiplacoff’s system to realize the above-noted benefits.” Petition, 44. That is, Nan’s edge gestures and

gesture handler provides the teachings necessary to achieve the functionalities attributed to the combination of Shiplacoff and Nan. APPLE-1023, [37].

Furthermore, even if the combination of Shiplacoff and Nan were to include gesture area 102, the teachings with respect to Nan's edge and associated edge gestures would complement, not conflict with, Shiplacoff's teachings. APPLE-1023, [38]. As Smith acknowledges, "Nan teaches that an 'edge' can be located beyond the display limit of the touchscreen 'when an input mechanism is able to receive a gesture portion beyond the display or screen.'" POR, 62 (citing EX1005, 4:35-47). Based on this teaching of Nan, a POSITA would have recognized that Shiplacoff's gesture area 102 and Nan's edge could be the same area of the device, and thus Nan's teachings regarding how to differentiate gestures from this common region of the device at the edge of the display are complementary to Shiplacoff's teachings regarding gestures that begin in gesture area 102. APPLE-1023, [38].

In other words, the purpose of Shiplacoff's gesture area 102 is very similar to, if not the same as, Nan's "edge" and therefore Nan's teachings regarding distinguishing between "edge gestures" are equally useful in the context of Shiplacoff's gesture area 102 as they are in the context of Nan's "edge." *Id.* Given these clear similarities, a POSITA would have been drawn to, not away from, teachings related to Nan's edge gestures when considering how to implement Shiplacoff's gesture area 102. APPLE-1023, [38].

IV. For Limitations [1k] [15g], and [27f], Neither Ground Relies Upon a Gesture Differentiated from a “Swipe Up” Based on Factors at Issue in the Dependent Claims

Smith argues that “Petitioner makes no allegation that Shiplacoff’s ‘tap or flick’ input—which Petitioner maps to ‘the second input’ of the remaining Limitations [1k], [15g], and [27f]—satisfies the additional requirements of” dependent claims 2 and 3 (or corresponding claims 16, 17, 28, and 29). It did not need to.

With respect to Limitations [1k], [15g], and [27f], the Petition explained how “it would have been obvious, if not understood, to use a different gesture, such as a tap or flick, that does not have the same movement parameters”—and “duration parameters”—as “those of a swipe up gesture.” *See* Petition, 23-24, 36-39. Thus, both Grounds simply argue that it would have been obvious to change the “movement parameters” and “duration parameters” of the “different gesture” that transitions from full screen mode to the launcher screen, without requiring or relying on a change from the aspects of the “swipe up” gesture that would otherwise meet dependent claims 2 and 3. *See id.*; APPLE-1023, [39]-[42]. Thus, for the same reason the “swipe up” gesture meets dependent claims 2 and 3 so too would the “different gesture” described with respect to Limitations [1k], [15g], and [27f]. *Id.*

V. Conclusion

For these reasons, Smith's arguments fail to rebut the Petition's explanation of how Grounds 1 and 2 render the Challenged Claims unpatentable.

Respectfully submitted,

Date: August 12, 2025

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner Reply to Patent Owner Response totals 5,599 words, which is less than the 5,600 allowed under 37 CFR § 42.24(c)(1).

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on August 12, 2025, a complete and entire copy of this Petitioner's Reply to Patent Owner's Response were provided by email to the Patent Owner by serving the correspondence address of record as follows:

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