UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,

Petitioner,

v.

SMITH INTERFACE TECHNOLOGIES, LLC,

Patent Owner.

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IPR2024-01084
Patent 10,649,578

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PATENT OWNER RESPONSE

TABLE OF CONTENTS

I. INTRODUCTION 1
II. OVERVIEW OF THE '578 PATENT 3
A. Pattern-Based Gestures 3
B. Independent Claims 1, 15, and 27 10
C. Dependent Claims 2-3, 16-17, and 28-29 13
III. LEVEL OF ORDINARY SKILL 13
IV. CLAIM CONSTRUCTION 13
A. "Criteria" Limitations 13
B. Conditional Limitations 15
1. Claims 1 and 27 15
2. Claim 15 21
C. "The Second Input" 23
V. OVERVIEW OF THE PRIOR ART 27
A. Shiplacoff (EX1004) 27
B. Nan (EX1005) 31
VI. PETITIONER'S GROUND 1 FAILS TO ESTABLISH OBVIOUSNESS OF ANY OF THE CHALLENGED CLAIMS 32
A. Limitations [1i]-[1k], [15e]-[15g], [27d]-[27f]: Shiplacoff Fails to Teach or Suggest Programming Logic Capable of Triggering the Recited Display Actions in the Required Operational Context 32
B. Limitations [1j]-[1k], [15f]-[15g], [27e]-[27f]: Shiplacoff Does Not Teach or Suggest Using a "Movement Threshold" To Differentiate Between Inputs 39
C. Limitations [1k], [15g], [27f]: Petitioner's Mapping of Shiplacoff's "Tap or Flick" Input Fails for Several Reasons 42
1. Shiplacoff Does Not Teach or Suggest That Its "Tap or Flick" Input Triggers the Recited Display Action 43

2. A POSITA Would Not Have Been Motivated To Modify Shiplacoff Such That Its "Tap or Flick" Input Triggers "Replacing the User Interface of the Application with the Home Screen" *47*

3. Shiplacoff's "Tap" Input Does Not Meet the Requirements of the Claimed "Second Input" *55*

D. Limitation [27f]: Petitioner's "Alternative[]" Theory for Limitation [27f] Fails Because It Is Conclusory 56

VII. PETITIONER'S GROUND 2 FAILS TO CURE GROUND 1'S DEFECTS FOR LIMITATIONS [1K], [15G], AND [27F] 57

VIII. THE PETITION FAILS TO SHOW THAT A POSITA WOULD HAVE BEEN MOTIVATED TO COMBINE SHIPLACOFF AND NAN 60

IX. THE PETITION FAILS TO ESTABLISH OBVIOUSNESS OF ANY OF DEPENDENT CLAIMS 2-3, 16-17, AND 28-29 64

X. CONCLUSION 67

PATENT OWNER'S EXHIBIT LIST

Exhibit	Shorthand	Description
2001	JCC	Excerpts of Joint Claim Construction Chart
2002	Stay Order	October 2, 2024 Order Granting in Part Apple's Motion to Stay in *Smith Interface Technologies, LLC v. Apple Inc.*, 3-23-cv-01187, S.D. Cal. (DKT. No. 127).
2003	Duarte-992	U.S. Pat. App. No. 12/115,992
2004	Madisetti Declaration	Declaration of Vijay Madisetti, Ph.D
2005	Madisetti CV	CV of Vijay Madisetti, Ph.D
2006	Terveen Deposition	Deposition of Loren Terveen, Ph.D. (April 25, 2025)
2007	'918 Provisional	U.S. Prov. Pat. App. No. 61/581,918
2008	Anzures	U.S. Pat. App. Pub. No. 2009/0174680
2009	Jobs	U.S. Pat. App. Pub. No. 2008/0122796

I. INTRODUCTION

Petitioner fails to establish unpatentability of any challenged claim because (a) the asserted references fail to disclose or suggest all features of any challenged claim, and (b) the references teach away from combining them as proposed.

First, the challenged claims require programming logic that is capable of detecting "a second input" in a specific operational context (i.e., "while [the device is] displaying the user interface of the application"), evaluating that input, and triggering each of the recited display actions as appropriate depending on whether "the second input" "meets" or "does not meet" specified criteria. 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." That mapping fails, however, because Shiplacoff teaches that its "swipe up" gesture and "tap or flick" input are detected and evaluated in different operational contexts, only one of which Petitioner maps to the operational context required by the claims (i.e., "while displaying the user interface of the application").

Second, the challenged claims require determining whether "the second input" either "meets" or "does not meet" "one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold." Petitioner's Ground 1 invalidity theory for these claim elements fails because it is premised on Shiplacoff's purported teaching of differentiating "between

contacts and gestures such as a single tap or swipe up gesture." Even if that were an accurate characterization of Shiplacoff—and it is not—merely distinguishing between a stationary input and an input with movement is not sufficient to render obvious differentiating between inputs that "include a movement parameter that is above a movement threshold."

Third, Petitioner's Ground 1 theory for Limitations [1k], [15g], and [27f]—which are premised on mapping Shiplacoff's "tap or flick" input to "the second input"—fail because Shiplacoff does not teach or suggest that a "tap or flick" input triggers the recited display action, nor has Petitioner established that a POSITA would have been motivated to modify Shiplacoff to do so.

Fourth, Petitioner's Ground 2 theory for Limitations [1k], [15g], and [27f] is premised on the same flawed mapping as Ground 1 (i.e., the mapping of those limitations to Shiplacoff's "tap or flick" input) and fails for the same reasons.

Finally, Petitioner's mappings for Dependent Claims 2-3, 16-17, and 28-29 fail because they are inconsistent with Petitioner's invalidity mappings for Independent Claims 1, 15, and 27. These dependent claims recite further constraints on "the second input," which Petitioner maps to Shiplacoff's "swipe up" gesture (or alternatively Nan's "edge gesture") for Limitations [1j], [15g], and [27e] and Shiplacoff's "tap or flick" input for Limitations [1k], [15g], and [27f]. But Petitioner's contentions regarding Dependent Claims 2-3, 16-17, and 28-29 include

no allegation that Shiplacoff's "tap or flick" input satisfies the additional requirements of Dependent Claims 2, 16, and 28. That is, Petitioner fails to establish that the input it maps to "the second input" of Limitations [1k], [15g], and [27f] satisfies the additional requirements of Dependent Claims 2-3, 16-17, and 28-29.

Thus, for the reasons below, the Board should uphold all challenged claims.

II. OVERVIEW OF THE '578 PATENT

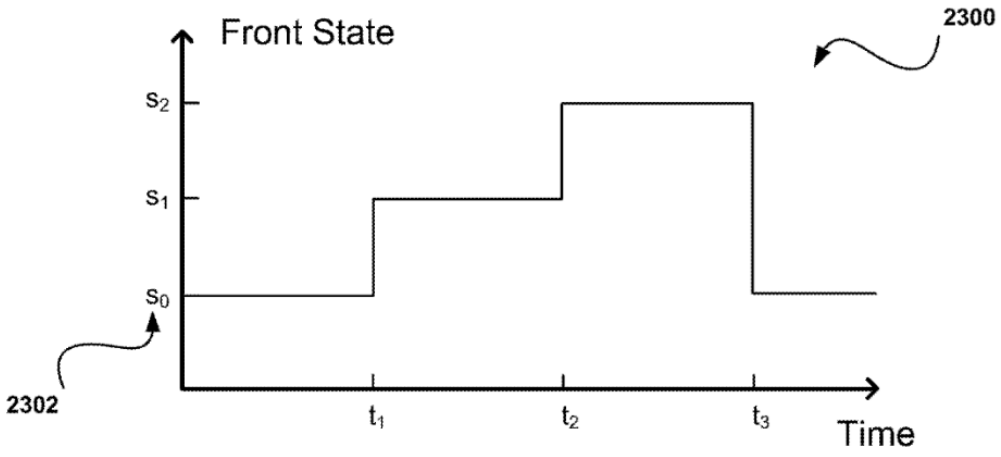
At the time of the '578 Patent's August 2011 priority date (*see* Paper 2 ("Pet."), 2), touchscreen mobile devices were becoming increasingly capable of more complex tasks that required more control than possible with basic input methods. EX2004, ¶23. Further, the limited screen space of such devices meant that the input and output techniques used for more complex tasks on laptop and desktop computers could not be used. *Id.* The '578 Patent addresses these shortcomings by enabling users to operate these new, powerful mobile devices and their feature-rich applications through implementation of novel "pattern-based gestures," which are gestures defined by different attributes and contexts that enable users to trigger a variety of corresponding actions. *Id.*

A. Pattern-Based Gestures

The '578 Patent describes "pattern-based gestures" as "an ordered sequence" of one or more "gesture attributes," also referred to as "touch event attributes," that may be recognized using a "decision tree." EX1001, 74:33-35, 74:14-16, 54:10-16;

EX2007, ¶¶[00579], [00581], [00359]; EX2004, ¶24. Such gestures are described in the '578 Patent as "a path through a phase space of one or more dimensions." EX1001, 72:36-38; EX2007, ¶[00564]; EX2004, ¶24; *see also* EX1001, 75:3-10 ("[P]robabilistic pattern recognition algorithms may output a probability… [where] this probability may be used to alter or modify a selection."); EX2007, ¶[00585].

As an example, multi-part "pattern-based gesture 2302" is differentiated from other gestures by a unique "phase space path which represents the time evolution of the touch state associated with a contact point" on the touchscreen:



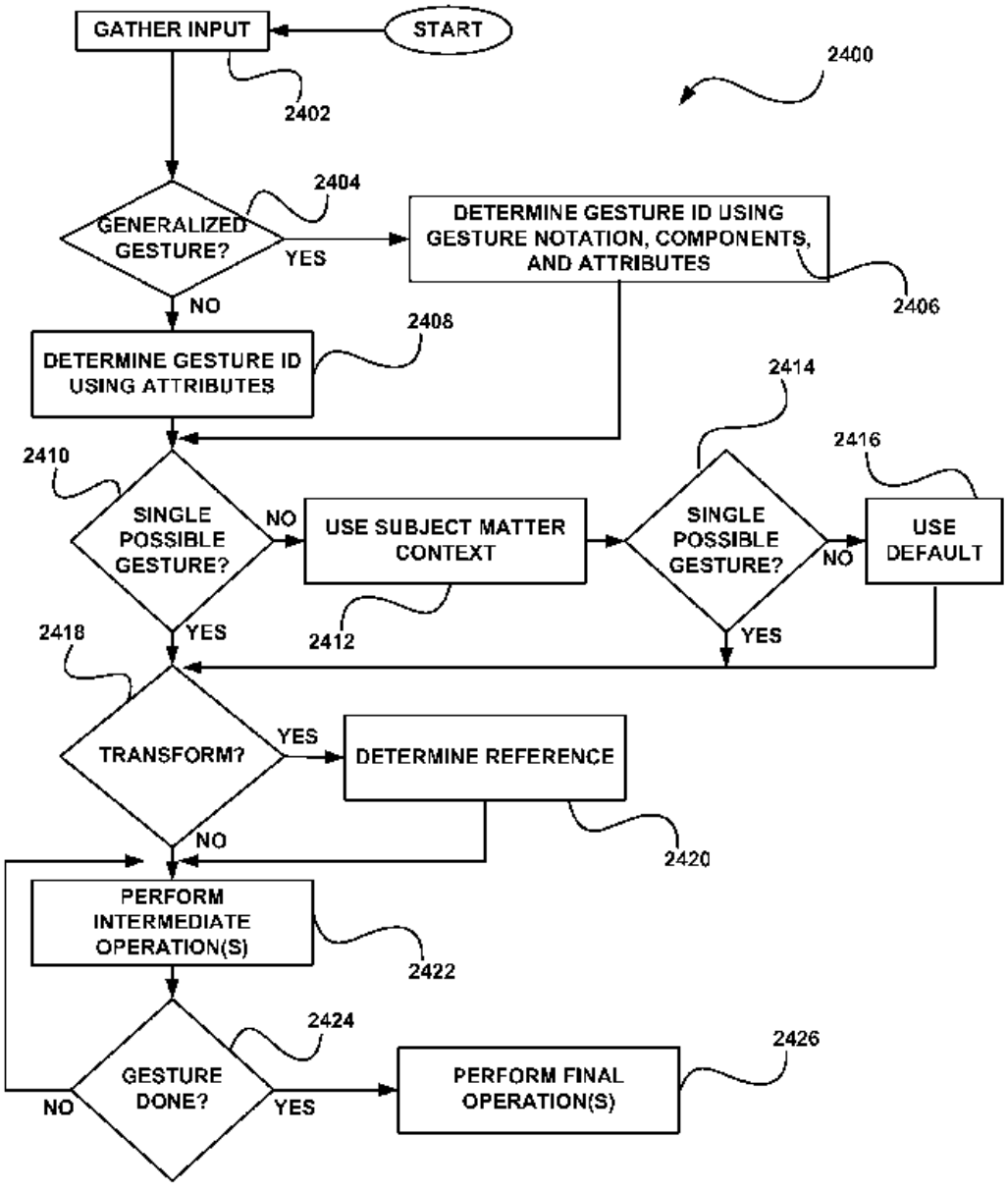
EX1001, 72:36-55, FIG. 23; EX2007, ¶[00566], FIG. 28; EX2004, ¶25. As shown, a gesture's phase space may include one or more "touch state transitions," each defining attributes such as "contact point changes" and "the time spent on each leg of the path through phase space." EX1001, 72:50-73:16; EX2007, ¶¶[00566]-[00570]; EX2004, ¶25. "[P]attern-based gesture 2302" includes three touch state transitions: a first transition in which, "[a]t time t1, the contact point changes from

touch state s0 to s1," as well as a second and third transition in which "[s]imilar changes of state occur at t2 and t3," respectively. EX1001, 72:56-64; EX2007, ¶[00567]; EX2004, ¶25.

Different gestures may be defined by different touch states, transitions, time spent at each touch state and transition, and other factors. EX1001, 72:65-73:16; EX2007, ¶[00568]; EX2004, ¶26; *see also, e.g.*, EX1001, 73:37-62 (describing other exemplary pattern-based gestures 2304 and 2306); EX2007, ¶¶[00573]-[00577]. Multiple pattern-based gestures may share the same starting points (e.g., s0) and even intermediate points (e.g., s1), but each individual gesture can nonetheless be differentiated using decision-tree logic. EX1001, 74:33-35; EX2007, ¶[00581]; EX2004, ¶26. The '578 Patent describes using "pattern recognition algorithms and methods" to analyze the attributes of a user input to determine whether it meets all the attributes for a defined gesture. EX1001, 74:43-75:15, 65:31-39; EX2007, ¶¶[00582]-[00586], [00444]; EX2004, ¶26; *see also, e.g.*, EX1001, 18:1-10 (explaining that "initial contact pressure" may also be used to differentiate an "accidental" input); EX2007, ¶[00101].

The '918 Provisional, which the '578 Patent incorporates by reference (EX1001, 1:8-24), also discloses techniques for "gesture differentiation," which is distinguished from simply detecting a "basic user interaction (i.e., button press, basic application interaction, etc.)." EX2007, ¶¶[00498]-[00502], FIG. 24; EX2004, ¶27.

As shown in the '918 Provisional's FIG 24 (inset below), the process begins by "determin[ing] whether there is any meaningful user input," including by applying a "threshold above which user interaction may rise before it may be deemed meaningful." EX2007, ¶¶[00501]-[00502]; EX2004, ¶27. Thereafter, the attributes of the user input are analyzed to determine whether they correspond a particular gesture. EX2007, ¶¶[00503]-[00529], FIG. 24; EX2004, ¶27.

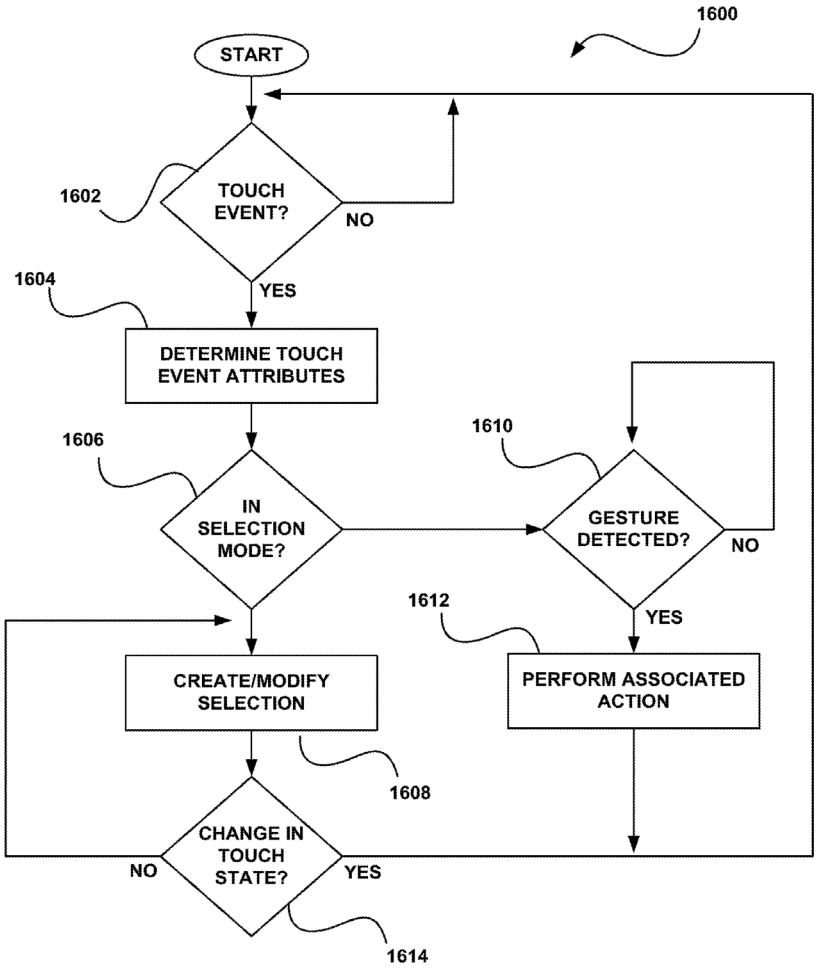


Further, as shown in the '918 Provisional's FIG. 24, determining whether a user input corresponds to a defined gesture may also depend on the "gesture subject matter context." EX2007, ¶[00512]; EX2004, ¶28. Specifically, in addition to attributes, gestures may "be distinguished from each other through the context of their use." EX1001, 65:20-22; EX2007, ¶[00444]; EX2004, ¶28. For instance, the '578 Patent explains that a user input with the same or similar touch state attributes may trigger a different operation depending on "application context," e.g., "which application is active" during the user's contact with the touchscreen. EX1001, 60:12-17 (explaining that "a gesture which scrolls a text field in one application may turn a page when performed in a different application"); EX2007, ¶[00404]; EX2004, ¶28. As another example, the '918 Provisional explains that "gesture subject matter context" may include whether a certain object is being displayed and/or has been selected, as well as the location of the object relative to the user's contact with the touchscreen. EX2007, ¶[00512]-[00513]; EX2004, ¶28. Thus, a gesture may be defined to require a starting point on or near a specific object displayed on the touchscreen. EX2007, ¶[00512]-[00513]; EX2004, ¶28.

The '578 Patent further explains that each gesture may be mapped to a particular command or operation, such as "scrolling a display or user interface element, zooming in or out, modifying the display brightness, and/or… placing the system in a selection mode." EX1001, 55:1-16, Limitations [1h], [1j]-[1k]; EX2007,

¶¶[00369]-[00370]; EX2004, ¶29. Thus, for instance, "the association between gesture and operation may be context-dependent." EX1001, 60:11-12, Limitations [1i]-[1k]; EX2007, ¶[00404]; EX2004, ¶29.

The '578 Patent's FIG. 16 (inset below) and related parts of the description illustrates the type of decision-tree-based programming logic used to determine whether a user's contact with the touchscreen corresponds to a pre-defined gesture and, if so, trigger the action mapped to the particular gesture that is detected:



EX1001, FIG. 16, 53:57-55:16; EX2007, FIG. 16, ¶¶[00355]-[00370]; EX2004, ¶30. The particular logic illustrated in FIG. 16 enables the device to determine whether a

user's contact with the touchscreen corresponds with "a selection made within a user interface." EX1001, 53:57-65; EX2007, ¶[00355]; EX2004, ¶30. As illustrated, the logic operation begins with detection of a touch event and determination of the "touch event attributes" for that event. EX1001, 53:57-54:9, Limitations [1i]-[1k]; EX2007, ¶¶[00355]-[00357]; EX2004, ¶30. "Touch event attributes" can include any measurable aspect of the user interaction with the touchscreen, such as touch state, contact area, contact point, and touch event attributes over time. EX1001, 54:10-16, 56:45-16; EX2007, ¶¶[00359], [00386] ("Possible gesture inputs may include, but are not limited to, touch event attributes (both initial and over time)[.]"); EX2004, ¶30.

After determining the attributes of the touch event that started the logic operation, a determination is made, at step 1606, as to whether the system is in a "selection mode." EX1001, 54:17-18; EX2007, ¶[00360]; EX2004, ¶31; *see also* EX1001, 76:19-24 (describing "selection mode" as another exemplary "context"); EX2007, ¶[00593]. "If it is determined in 1606 that the system is not in a selection mode," then a determination must be made, at step 1610, whether the touch attributes match a predefined gesture (i.e., whether "a gesture has been detected"). EX1001, 54:61-63, Limitations [1j]-[1k]; EX2007, ¶[00368]; EX2004, ¶31. "If a gesture is detected, then an associated action is performed" (step 1612). EX1001, 55:1-2, Limitations [1j]-[1k]; EX2007, ¶[00369]; EX2004, ¶31. On the other hand, "[i]f the

system is in a selection mode," the same touch event attributes may instead trigger a "selection" operation such that "a selection is created and/or modified as a function of the touch event attributes [and] then displayed." EX1001, 54:35-37; EX2007, ¶[00363]; EX2004, ¶31.

B. Independent Claims 1, 15, and 27

Petitioner challenges the three independent claims of the '578 Patent: Claims 1, 15, and 27. Claim 1 is directed to an "electronic device" with "one or more programs including instructions for" causing the device to perform certain logic operations. Among other things, Claim 1 recites "instructions for" causing the claimed device to "detect[] a second input by a second contact" that: (1) "includes movement across the display in a direction," and (2) occurs "while [the device is] displaying the user interface of the application." EX1001, Limitation [1i]. Claim 1 further recites a logic operation that is executed "in response to detecting ***the*** second input" and causes the device to (a) determine whether or not the "second input" meets specified "criteria," and (b) "in accordance with" that yes/no determination, perform a specified display action. *Id.*, Limitations [1j]-[1k]. Limitations [1j] and [1k] recite the display action to be performed by the device depending on whether the input meets the specified criteria. In particular, Limitations [1j]-[1k] recite[1]:

[1] All emphasis added throughout unless otherwise noted.

- [1j] "in accordance with a determination that ***the second input <u>meets</u> one or more criteria*** that is met when the second input is detected to include a movement parameter that is above a movement threshold," the instructions cause the device to "***display[] at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer***…"; and

- [1k] "in accordance with a determination that ***the second input <u>does not meet</u> 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," the instructions cause the device to "***replac[e] the user interface of the application with the home screen***…."

Claim 15 is substantially similar to Claim 1 but directed to a method with steps (i.e., Limitations [15b]-[15g]) that are analogous to Limitations [1f]-[1k].

Claim 27 is directed to a "non-transitory computer readable storage medium" including "instructions" that, when executed, "cause the electronic device to" perform certain logic operations. Like Claim 1, Claim 27 recites instructions that cause the device to "detect[] a second input by a second contact" that: (1) "includes movement across the display in a direction," and (2) occurs "while [the device is] displaying the user interface of the application." EX1001, Limitation [27d]. Also like Claim 1, Claim 27 recites a logic operation that is executed "in response to detecting the second input" and causes the device to determine whether or not the

"second input" meets specified "criteria" and, based on that determination, perform a specified display action. *Id.*, Limitations [27e]-[27f]. Claim 27 differs from Claim 1 in that the recited logic operation specifies two different "criteria" against which the "second input" is evaluated. Specifically, Limitations [27e]-[27f] recite:

- [27e] "in accordance with a determination [i] that ***the second input meets a first 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 [ii] that ***the second input that meets a second one or more criteria*** that is met when the second input is detected to include a duration parameter that is above a duration threshold," the instructions cause the device to "***display at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth as compared to a second virtual display layer***…"; and

- [27f] "in accordance with a determination that ***the second input meets the first one or more criteria*** that is met when the second input is detected to include the movement parameter that is above the movement threshold and that ***the second input does not meet the second one or more criteria*** that is met when the second input is detected to include the duration parameter that is above the duration threshold," the instructions cause the device to "***replace the user interface of the application with the home screen***…."

C. Dependent Claims 2-3, 16-17, and 28-29

Dependent Claims 2-3, 16-17, and 28-29 recite additional requirements that must be met by "***the*** second input" of Limitations [1i]-[1k], [15e]-[15g], and [27d]-[27f]. *Compare, e.g.*, EX1001, Limitations [1i]-[1k], *with id.*, Claims 2-3.

Dependent Claims 2, 16, and 28 recite that "the second contact" of "the second input" must include "movement that starts at an edge of the display." Thus, in each instance of the claimed logic operation for these claims, the detected "second input" must "start[] at an edge of the display."

Dependent Claims 3, 17, and 29 recite that "the second contact" of "the second input" must include "movement across the display [in] a vertical direction." Thus, in each instance of the claimed logic operation for these claims, the "second input" must "include[] a vertical direction" of movement.

III. LEVEL OF ORDINARY SKILL

Patent Owner ("PO") agrees with the level of ordinary skill in the art adopted by the Board for the purposes of the Institution Decision. *See* Paper 7 ("ID"), 5; EX2004, ¶39. PO's expert, Dr. Madisetti, satisfies this definition of a POSITA and can opine on the perspective of a POSITA. *Id.*, ¶¶4-9; *see also id.*, ¶¶1-22; EX2005.

IV. CLAIM CONSTRUCTION

A. "Criteria" Limitations

In the Institution Decision, the Board interpreted PO's use of the phrase "movement criteria" in PO's Preliminary Response as a proposed claim construction

of the phrase "one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold." ID, 8-9. That was not PO's intent. Rather, PO merely used "movement criteria" as a shorthand reference for the longer claim phrase quoted above. *See* Paper 6 ("POPR"), 26 ("***[T]his criteria*** will be referred to hereinafter as the "***movement criteria.***" (second emphasis in original)). To avoid confusion, PO will hereinafter directly quote the claim language rather than using a shorthand reference.

Further, to address the Board's question about this claim phrase (*see* ID, 9), PO's position is that the meaning of the phrase "one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold" is readily understandable from the plain language of the claims, and therefore no formal claim construction is necessary. *See* EX2004, ¶¶32-33. The plain language of the claims define the "one or more criteria" as criteria "that is met ***when*** the second input is detected to include a movement parameter that is above a movement threshold." EX1001, Claims 1, 15, 27 (reciting this as "a ***first*** one or more criteria"); EX2004, ¶¶32-33. The claims do not recite any other parameters that either would satisfy the "one or more criteria" or are necessary to satisfy such criteria. Thus, under the plain language of the claims, the "one or more criteria" is satisfied when "a movement parameter" of "the second input" is detected to be "above a movement threshold." *See* EX2004, ¶¶32-33.

PO similarly used the shorthand "duration criteria" in the POPR to refer to the element of Claim 27 reciting: "a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold." *See* POPR, 27. Use of this shorthand was likewise not intended as a proposed claim construction. Like the claim phrase discussed above, the meaning of this phrase is readily understandable from the plain language of the claims, and therefore no formal claim construction is necessary. *See* EX2004, ¶34. The plain claim language defines the "second one or more criteria" as criteria "that is met ***when*** the second input is detected to include a duration parameter above a duration threshold." EX1001, Claim 27; EX2004, ¶34. The claims do not recite any other parameters that either would satisfy the "second one or more criteria" or are necessary to satisfy such criteria. Thus, under the plain language of the claims, the "second one or more criteria" is satisfied when "a duration parameter" of the "second input" is detected to be "above a duration threshold." *See* EX2004, ¶34.

B. Conditional Limitations

1. Claims 1 and 27

Limitations [1i]-[1k] of Claim 1 collectively recite "one or more programs including instructions for" "detecting a second input by a second contact" that "includes movement across the display in a direction" and occurs "while [the device is] displaying the user interface of the application," determining whether "the second

input" "meets" or "does not meet" specified criteria, and "in accordance with [that] determination" performing a corresponding display action. A POSITA would have understood Limitations [1i]-[1k] to require programming logic that is executed in a specific operational context—"while [the device is] displaying the user interface of the application"—to detect, evaluate, and respond to user input by triggering each of the recited display actions as appropriate, depending on whether the input "meets" or "does not meet" specified criteria. EX2004, ¶40. Based on the plain claim language, a POSITA would have understood that logic operation to include:

(i) "detecting a second input by a second contact that includes movement across the display in a direction;"

(ii) "in response to detecting the second input," determining whether "the second input meets" or "does not meet" the recited criteria; and

(iii) "in accordance with" that yes/no determination, triggering performance of each corresponding display action where appropriate.

Id.

Petitioner attempts to deviate from the plain and ordinary meaning of this claim language by mapping Limitations [1j]-[1k] to two separate logic operations that detect, evaluate, and respond to user input in different operational contexts. *See* Pet., 17-24; *infra* §VI.A. Specifically, Petitioner maps programming logic from Shiplacoff's "***full-screen* mode**" to Limitation [1j], alleging that the recited function is triggered when the device is operating in "full-screen mode" and detects user input

that "meets" the specified criteria. Pet., 17-23. Petitioner maps separate programming logic from Shiplacoff's "***card* mode**" to Limitation [1k], alleging that the recited function is triggered when the device is operating in "card mode" and detects user input that "does not meet" the specified criteria. *See id.*, 23-24. But that reading of the claims is inconsistent with the plain language of the claims, as well as the nature of programming logic. EX2004, ¶41.

Executable instructions to cause a device to perform a specific action require logic operations that detect when a user's contact with the touchscreen matches the attributes for the gesture or input defined to trigger performance of the action. *Id.*, ¶42. Without such logic operations, the system would not know what action to trigger or when to trigger the action. *Id.*

Here, the plain claim language dictates that triggering the performance of the display actions recited in Limitations [1j]-[1k] requires "detecting a second input by a second contact that includes movement across the display in a direction" while the device is "displaying the user interface of the application." EX1001, Limitation [1i]; EX2004, ¶43. The plain claim language further dictates that, to determine the display action to be performed, the device must evaluate "***the*** second input" to determine whether it either "meets" or "does not meet" "one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold." EX1001, Limitations [1j]-[1k]; EX2004, ¶43.

Although the programming logic of Limitations [1i]-[1k] would not trigger the display actions recited in both Limitations [1j] and [1k] in response to the same instance of input—because an input cannot simultaneously "meet" and "not meet" the recited criteria—Limitations [1j] and [1k] nonetheless require programming logic capable of triggering each of the recited display actions. *See Ex Parte Schulhauser*, Appeal 2013-007847, 2016 WL 6277792, *7 (PTAB Apr. 28, 2016) (precedential) ("[A] ***system claim*** [reciting] structure that performs a function, which only needs to occur if a condition precedent is met, ***still requires structure for performing the function should the condition occur.***"); EX2004, ¶44.[2] Thus,

[2] *See also Nazomi Commc'ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1344 (Fed. Cir. 2014) ("The claims recite a CPU that can perform particular functions, namely, the processing of… instructions. Since hardware cannot meet these limitations in the absence of enabling software, the claims are properly construed as claiming an apparatus comprising a combination of hardware and software ***capable of practicing the claim limitations***."); *Ex Parte Rebstock*, Appeal 2022-003164, 2023 WL 4643799, *4 (PTAB June 23, 2023) ("We construe the scope of the computer program product claim 17, as being such that the computer program ***has the capability of performing operations of both the alternatives***."); *cf. In re Varma*, 816 F.3d 1352, 1363 (Fed. Cir. 2016) ("For a dog owner to have 'a dog that rolls over

Limitations [1j]-[1k] are not satisfied by programming logic capable of triggering performance of only one of the two recited display actions. EX2004, ¶44. Nor are they satisfied by separate logic operations that detect and evaluate user input in different operational contexts to trigger each of the display actions. *Id.*

Rather, the plain language of Limitations [1i]-[1k] requires a single logic operation (or series of logic operations) executed while the device is "displaying the user interface of the application" and capable of: (i) "detecting a second input by a second contact that includes movement across the display in a direction," (ii) determining whether "the second input" "meets" or "does not meet" the recited criteria, and (iii) triggering performance of each of the corresponding display actions as appropriate. EX1001, Limitations [1i]-[1k]; EX2004, ¶45.

As explained above, Claim 27 recites executable "instructions" that cause the device to perform logic operations that are substantially similar to those of Claim 1. *See supra* §II.B; EX2004, ¶46. Claim 27 differs from Claim 1 in that the logic operation recited in Limitations [27d]-[27f] specifies two different "criteria" against which the "second input" is evaluated. EX1001, Limitations [27d]-[27f]; EX2004, ¶46; *see also supra* §II.B. As explained with respect to Claim 1, a POSITA would

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and fetches sticks,' it does not suffice that he have two dogs, each able to perform just one of the tasks.").

have understood Limitations [27d]-[27f] to require a single logic operation (or series of logic operations) executed in the operational context required by the claim—i.e., while the device is "displaying the user interface of the application"—that enables the device to: (i) "detect[] a second input by a second contact that includes movement across the display in a direction," (ii) determine whether "the second input" "meets" or "does not meet" the two recited criteria, and (iii) trigger performance of each of the recited display actions as appropriate. EX1001, Limitations [27d]-[27f]; EX2004, ¶46; *Schulhauser*, *7.

This interpretation of the plain language of Claims 1 and 27 is consistent with the descriptions in the '578 Patent and '918 Provisional of "decision-tree" logic for detecting pattern-based gestures and altering the output from and/or processing by the device in response thereto.[3] *See supra* §II.A; EX2004, ¶47.

[3] While PO has demonstrated that the plain language of the claims is consistent with the specification's disclosure, it was not incumbent on PO to do so, nor would the lack of any specific embodiment be a justification to ignore the plain language. As the Federal Circuit recently reaffirmed, "the patentee is free to choose a term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope." *Iqris Techs. LLC v. Point Blank Enters., Inc.*, 130 F.4th 998, 1004 (Fed. Cir. 2025).

2. Claim 15

As Petitioner acknowledges, Limitations [15e]-[15g] of Claim 15 are substantially similar to Limitations [1i]-[1k] of Claim 1—indeed, the Petition makes no distinction between these limitations and instead merely incorporates Petitioner's contentions with respect to Limitations [1i]-[1k] for Limitations [15e]-[15g]. Pet., 33-34, 47; EX2004, ¶48. For that reason alone, Limitations [15e]-[15g] should be interpreted consistently with Limitations [1i]-[1k].

Nonetheless, in the Institution Decision, the Board questioned whether the method steps of Limitations [15f]-[15g] "are written as mutually exclusive alternatives," and specifically whether only "one of these two limitations needs to be satisfied in order to meet the claim." ID, 7-8 (citations omitted). The plain and unambiguous language of Claim 15 requires that "to come within the claim" ***each*** of the display actions recited in Limitations [15f] and [15g] must be performed "where their preconditions apply." *See Sierra Wireless ULC v. Sisvel S.p.A.*, 130 F.4th 1019, 1022 (Fed. Cir. 2025) (holding that, to satisfy a method claim reciting alternative steps linked with "and," each step must be performed "where their preconditions apply"). This is true even though Limitations [15f] and [15g] "cannot both occur in response to the same set of stimuli." *See id.*; EX2004, ¶¶49-50.

Further, Claim 15 closely resembles the claim the Federal Circuit addressed in *Hytera Communications Co. v. Motorola Solutions, Inc.*, 841 F. App'x 210 (Fed.

Cir. Jan. 19, 2021), which distinguished *Schulhauser*. There, the Federal Circuit held that the method claim at issue "requires that a specific action be taken in response to each of two alternative specified conditions," and the claim "is not met unless the TDMA system is configured to perform ***each*** claimed responsive action." *Hytera*, 841 F. App'x at 216; *see also Ex Parte Brosius*, Appeal 2010-001734, slip op., 4-5 (BPAI Jan. 19, 2012) (explaining that two conditional method "limitations (b) and (c) are not optional because if their condition is satisfied, these limitations ***require*** certain steps to be performed" (emphasis in original) (citing *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1372 (Fed. Cir. 2003)).

The same is true here. Claim 15 recites conditional steps that specify the performance of different display actions based on whether the touch input either meets or does not meet specified criteria. EX1001, Limitations [15f]-[15g]; EX2004, ¶50. Each condition—i.e., meeting or not meeting the specified criteria—leads to a different display action, and understanding the claim fully requires evaluating all possible conditions and their corresponding display actions. EX2004, ¶50. Further, like the claim in *Hytera*, which recited that the method must be performed "in a TDMA system," Claim 15 recites that the method must be performed "at a mobile device" (EX1001, Limitation [15a]) and therefore "is not met unless the [mobile device] is configured to perform each claimed responsive action" when the corresponding preconditions are met. *See Hytera*, 841 F. App'x at

216. Thus, like with Claims 1 and 27, a POSITA would have understood Claim 15 to require a single logic operation (or series of logic operations) executed in the operational context required by the claim—i.e., while the device is "displaying the user interface of the application"—that enables the device to: (i) "detect[] second a second input by a second contact that includes movement across the display in a direction," (ii) determine whether "the second input" "meets" or "does not meet" the two recited criteria, and (iii) trigger performance of each of the corresponding display actions as appropriate. EX1001, Limitations [15f]-[15g]; EX2004, ¶51.

This interpretation of the plain language of Claim 15 is consistent with the descriptions in the '578 Patent and '918 Provisional of "decision-tree" logic for detecting pattern-based gestures and altering the output from and/or processing by the device in response thereto.[4] *See supra* §II.A; EX2004, ¶52.

C. "The Second Input"

Petitioner also attempts to deviate from the plain language of the claims by mapping touch events detected and evaluated in two different operational contexts to the same claimed "second input." *See* Pet., 15-24; *infra* §VI.C.1. Specifically, Petitioner maps Limitation [1j]'s "the second input" to Shiplacoff's detection of a "swipe up" gesture during a "***full-screen mode***" (Pet., 17-23), but then maps that

[4] *See supra* n.3.

same "***the*** second input" in Limitation [1k] to Shiplacoff's detection of a "tap or flick" input during Shiplacoff's "***card mode.***" *See id.*, 23-24.

But the plain language of the claims require that "the second input" of Limitations [1j] and [1k] be detected ***in the same operational context***. In particular, Limitation [1i] recites: "while displaying the user interface of the application, detecting ***a second input*** by a second contact that includes movement across the display in a direction." And Limitations [1j]-[1k] collectively recite executing a logic operation "in response to detecting ***the second input***" to (a) determine whether "***the second input***" either "meets" or "does not meet" specified criteria, and (b) "in accordance with" that yes/no determination, trigger each of the recited display actions where appropriate. *See supra* §IV.B. Limitations [15f]-[15g] and [27d]-[27f] include similar language. *See id.* The antecedent basis "***the***" dictates that Limitations [1i]-[1k], [15e]-[15g], and [27d]-[27f] require a single, common contact event as the starting point of the claimed logic operations. *See Insituform Techs., Inc. v. Cat Contracting, Inc.*, 99 F.3d 1098, 1105 (Fed. Cir. 1996) (holding that "the cup" later in claim is same as "a cup" earlier in claim where claim "specifically describes using the same cup repeatedly" and "nothing in the text of [the] claim suggests the use of more than one cup"); EX2004, ¶54. And the plain language of the claims define that common starting point as "a second input by a second contact that includes movement across the display in a direction," which is detected while

the device is "displaying the user interface of the application." EX1001, Limitations [1i], [15e], [27d]; EX2004, ¶54.

In *Creative Internet Advertising Corp. v. Yahoo!, Inc.*, the Federal Circuit reviewed a similarly structured claim reciting a "computer program comprising": (a) "logic configured to receive ***an*** end user communication message," (b) "logic configured to insert a background reference… into ***said*** end user communication message," and (c) "logic configured to transmit ***said*** end user communication message." 476 F. App'x 724, 725-26 (Fed. Cir. Apr. 22, 2011) (original emphasis omitted). The court explained that, "[a]lthough the antecedent phrase, '***an*** end user communication message,' is broad enough to cover multiple messages, each use of the phrase '***said*** end user communication message' still refers to the antecedent phrase." *Id.*, 728. Thus, the use of antecedent basis "mean[t] that the claim does not cover a system that only receives ***a*** message, inserts a background reference into a ***different*** message, and then transmits a ***third*** message." *Id.*, 728-29. Rather, to meet the claim, the system must "contain logic configured to insert a background reference into ***the same*** messages that are received and transmitted by other logic in the program." *Id.*, 728.

Here, each use of the phrase "***the*** second input" in Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f] similarly refers to the antecedent phrase "***a*** second input" in Limitations [1i], [15e], and [27d]. *See supra* §II.B, IV.B; *Creative*, 476 F. App'x at

728; EX2004, ¶55; EX2006, 56:22-57:21, 58:22-59:13. Thus, just as in *Creative*, the claim cannot be met by a user input that meets only "***the*** second input" in Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f]; rather, this same user input must also satisfy the requirements for "***a*** second input" in Limitations [1i], [15e], [27d]. *See* 476 F. App'x at 728-29; EX2004, ¶55; EX2006, 57:14-59:13 (agreeing that "***the*** second input" "must be detected while the user interface of the application is displayed and must include movement across the display in a direction").

Dependent Claims 2-3, 16-17, and 28-29 also refer to, and place further constraints on, "***the*** second input." *See supra* §II.C; EX2004, ¶56. In particular, Dependent Claims 2, 16, and 28 recite that "***the*** second input" is by a contact "that includes movement that starts at an edge of the display." EX2004, ¶56; EX2006, 59:17-61:7. Dependent Claims 3, 17, and 29 recite that "***the*** second input" is by a contact "that includes movement across the display in… a vertical direction." EX2004, ¶56; EX2006, 59:17-61:7. Again, the antecedent basis "the" indicates that, in each instance of operation, these claims impose additional requirements on "***the*** second input" in the independent claims. *See Creative*, 476 F. App'x at 728-29; EX2004, ¶56; EX2006, 59:17-61:7.

V. OVERVIEW OF THE PRIOR ART

A. Shiplacoff (EX1004)

Shiplacoff discloses a device in which multiple "[display] modes are available for interacting with [the] device." EX1004, ¶[0068]. One such "display mode" is "full-screen mode," in which (as in FIG. 2 inset below) an "activity" such as a "calendar application occupies substantially the entire display screen." *Id.*, ¶[0075].

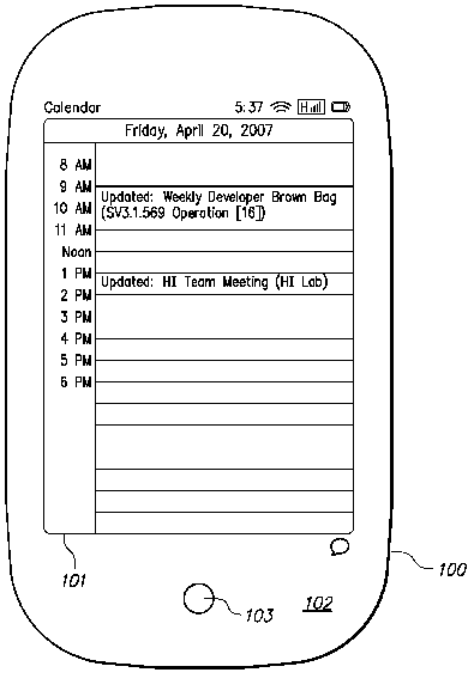


FIG. 2

Id., FIG. 2. "[F]ull-screen mode is optimized for maximum use of screen space for interacting with a single activity." *Id.*, ¶[0074]; EX2006, 23:21-24:8, 26:1-7. Shiplacoff teaches that "full-screen" mode allows the user to "interact[] with the active activity (such as the calendar application shown in FIG. 2)" by "manipulating on-screen elements" within the application. EX1004, ¶¶[0074]-[0076].

Among Shiplacoff's display modes is a "card mode." EX1004, ¶¶[0068]-[0074]; Pet., 6-7. Unlike "full-screen mode," "card mode is optimized for easily switching focus from one activity to another and for easily initiating and terminating activities." EX1004, ¶[0074]; EX2006, 24:4-8; *see also* EX2006, 23:3-8 (agreeing that "card mode is optimized for something different than what full-screen mode is optimized for"). Shiplacoff teaches that, to achieve this, applications are represented by "cards" "that can be moved and manipulated by the user" on the screen. EX1004, ¶[0060]. Multiple "cards" are displayed when in "card mode," "each card representing an application or other activity." *Id.*, ¶¶[0068]-[0072]; EX2006, 31:1-6. Shiplacoff's FIG. 3 illustrates an example in which three such cards 301A-301C are displayed by the device while in "card mode." EX1004, ¶¶[0078]-[0079].

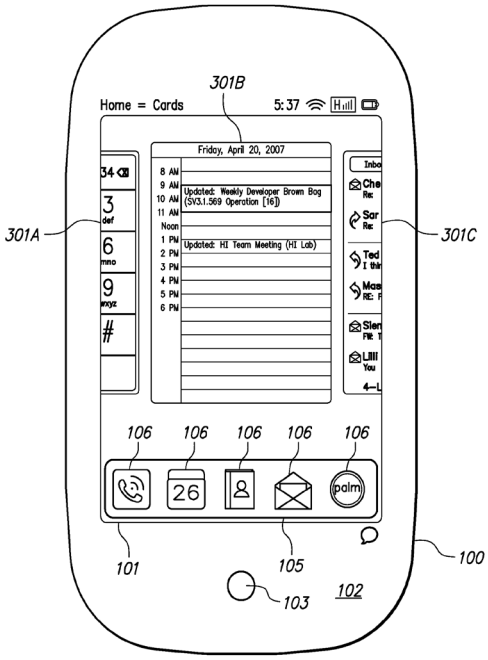


FIG. 3

Id., FIG. 3.

Shiplacoff teaches that, when in "card mode," a user can rearrange, dismiss, and switch between cards using various on-screen commands. *Id.*, ¶¶[0084]-[0106]. For instance, a user can perform a "flicking action" on a card upward off the screen to dismiss the card and its associated application. *Id.*, ¶¶[0100]-[0103]. The user can also perform a different input on the card—such as a "touch or double-tap"—to reenter a "full-screen mode" that displays and reenables interaction with the card's application. *Id.*, ¶[0091]; EX2006, 24:16-25:2 ("[I]n card mode you cannot have a focus on a single activity to interact with, so you would have to change modes if you want to do that."); *see also, e.g.*, EX1004, ¶[0128] (explaining that "a 'swipe down' gesture beginning on screen 101 and extending onto gesture area 102" is another input that can switch "from card mode to full-screen mode").

Another display mode described by Shiplacoff is "shuffle mode." EX1004, ¶¶[0068]-[0074]. Shiplacoff explains that, although "shuffle mode" is a separate display mode from "card mode," "the user can interact with cards 301 in shuffle mode in substantially the same manner as in card mode." EX1004, ¶[0112]; EX2006, 29:2-22, 31:1-6.

Shiplacoff teaches that various user inputs are programmed to trigger a switch from one display mode to another or to the device's "launcher screen." *See, e.g.*, EX1004, ¶¶[0099], [0124]-[0132]. For instance, Shiplacoff teaches that a user can switch from "card mode" to the device's "launcher screen" "by performing a gesture

or other command." *Id.*, ¶[0099]. Shiplacoff also teaches that the user can initiate a switch from "full-screen mode" to "card mode" by using "a 'swipe up' gesture" that begins in an ***off-screen*** "gesture area" and extends onto the screen. *Id.*, ¶[0127].

Shiplacoff teaches—through its incorporation-by-reference of U.S. Patent Application No. 12/115,992 (Duarte-992) (*see* EX1004, ¶[0066])—that the device is able to distinguish the described "swipe up" gesture from other inputs based on whether the gesture or input includes contact with the off-screen "gesture area 102" (green, below) and/or a cross-over between "gesture area 102" and "screen 101" (red, below). EX2003, ¶¶[0059], [0077], Abst.

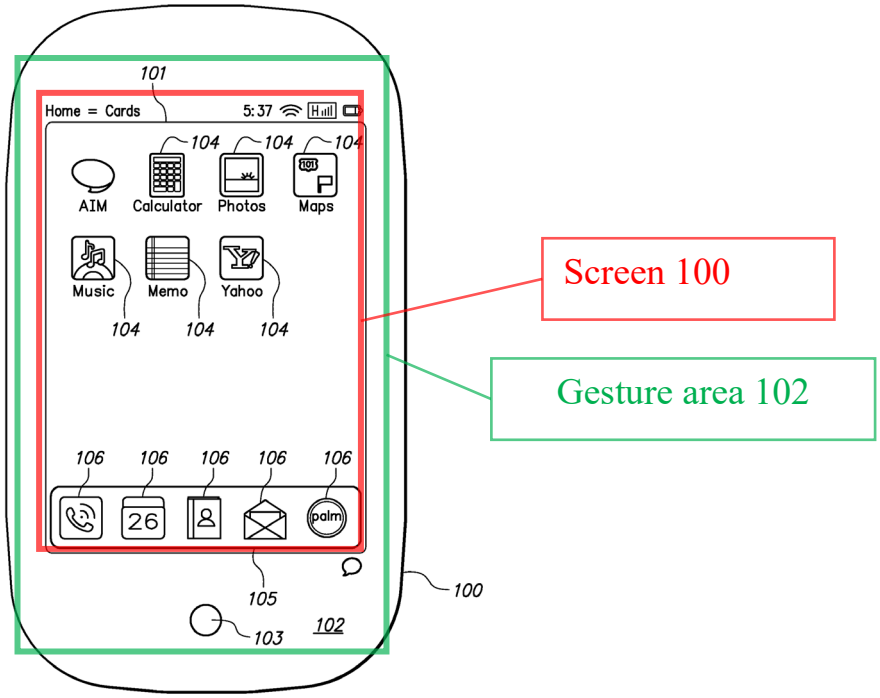
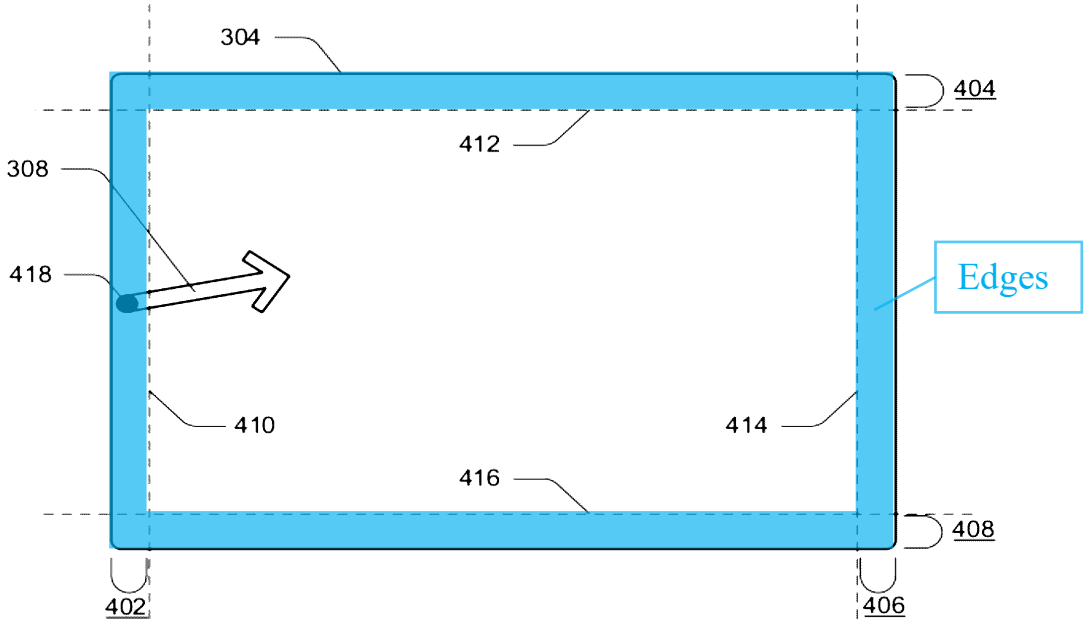


FIG. 1

EX1004, FIG. 1 (annotated); *see also* EX2003, ¶¶[0060], [0062].

B. Nan (EX1005)

Nan teaches the use of an "edge gesture" that "has a start point at an edge of [a] user interface and a later point not within the edge." EX1005, Abst., 7:17-22. Nan explains that the "edge" for an "edge gesture" is a "small" region of pixels extending inward up to an "edge limit," as shown in the annotated version of Nan's FIG. 4 inset below. EX1005, 4:35-62.



Id., FIG. 4 (annotated). Nan's FIG. 4 illustrates four "edges" 402, 404, 406, and 480 (highlighted in blue), each lying between the "display limit" of an "immersive interface 304" and an inner "edge limit" (dashed lines 410, 412, 414, and 416). EX1005, 4:52-62. Using these "edges," an "edge gesture" is distinguished from other user inputs based on whether the "start point" of a touch event "is at an edge." EX1005, 4:35-5:2, 4:65-5:2.

VI. PETITIONER'S GROUND 1 FAILS TO ESTABLISH OBVIOUSNESS OF ANY OF THE CHALLENGED CLAIMS

A. Limitations [1i]-[1k], [15e]-[15g], [27d]-[27f]: Shiplacoff Fails to Teach or Suggest Programming Logic Capable of Triggering the Recited Display Actions in the Required Operational Context

As explained above, Limitations [1i]-[1k], [15e]-[15g], and [27d]-[27f] require programming logic capable of evaluating "***a second input***" detected in a particular operational context—while "displaying the user interface of the application"—to determine whether "***the second input***" "meets" or "does not meet" specified criteria and triggering each of the recited display actions as appropriate "in accordance with" that determination. *See supra* §§II.B, IV.B-IV.C; EX2004, ¶64. The antecedent basis "***the second input***" dictates that any input mapped to Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f] must be detected while the device is "displaying the user interface of the application." EX1001, Limitations [1i], [15e], [27d]; EX2004, ¶64; *see also supra* §IV.C.

Petitioner's Ground 1 maps Shiplacoff's "swipe up" gesture to "the second input" of Limitations [1j], [15f], and [27e] and maps Shiplacoff's "tap or flick" input to "the second input" of Limitations [1k], [15g], and [27f]. Pet., 15-24, 36, 38-39. Petitioner's mapping fails, however, because Shiplacoff teaches that its "swipe up" gesture and "tap or flick" input are utilized—and therefore detected—in two different operational contexts, only one of which Petitioner maps to the operational

context required by the claims—"while displaying the user interface of the application." EX2004, ¶65.

Shiplacoff teaches that its "swipe up" gesture is utilized when the device is operating in "***full-screen mode***"—such as the full-screen display of a "calendar user interface" shown in Shiplacoff's FIG. 2—and causes the device to change from "full-screen mode" to "card mode." EX1004, ¶[0127]; EX2004, ¶66; EX2006, 35:18-36:16. Petitioner maps Shiplacoff's "full-screen mode" to the claimed "while displaying the user interface of the application," which Limitations [1i], [15e], and [27d] dictate is the operational context in which "the second input" must be detected. Pet., 15-23; EX2006, 61:22-63:2. Petitioner maps "card mode" to "display[ing] at least a portion of the user interface of the application in a first virtual display layer," which is the display action of Limitations [1j], [15f], and [27e]. Pet., 17-23; EX2006, 63:3-64:8. This mapping is illustrated in Petitioner's annotations to Shiplacoff's figures, reproduced below:

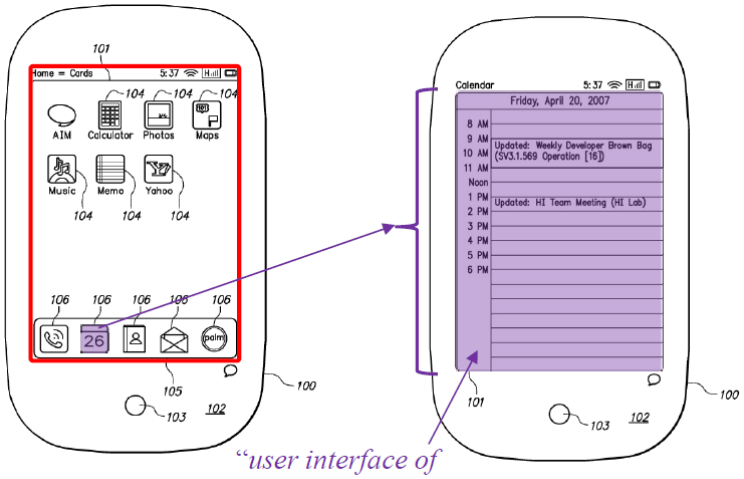
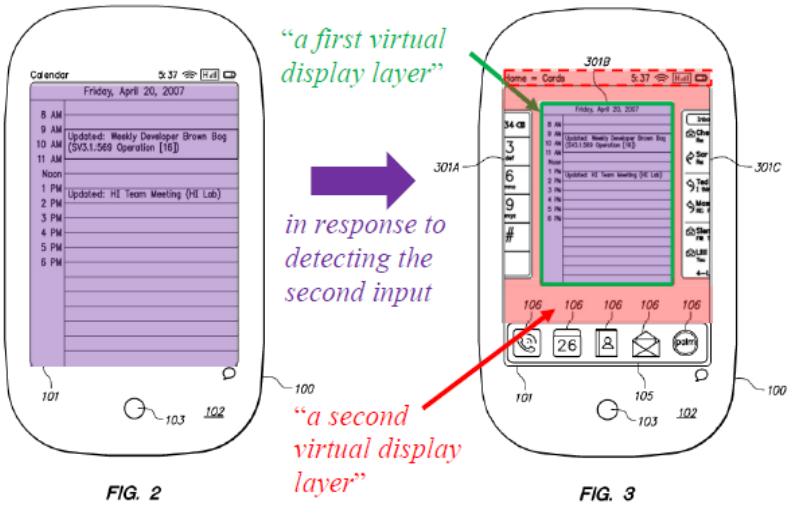


FIG. 1 FIG. 2



Pet., 14-15 (annotating, for Limitation [1h], Shiplacoff's FIGS. 1-2), 16 (asserting that because "Shiplacoff's device detects a gesture, such as a swipe up gesture, while displaying an application, Shiplacoff teaches [Limitation [1i]]"), 17-18 (annotating Shiplacoff's FIGS. 2-3 and arguing that, "[a]s explained in [1i], a user can switch from the full-screen mode to the card mode… by using a swipe up gesture"), 36-37.

As for Shiplacoff's "tap or flick" input that Petitioner maps to Limitations [1k], [15g], and [27f] (*see* Pet., 23, 39), Shiplacoff teaches that when the device is operating in "***card mode***," "a card can be dragged or flicked off screen, or a control can be selected to close a display card and, in some cases, return to the launch screen." EX1004, ¶[0100]. But the claims dictate that "the second input" of Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f] must be detected "while displaying the user interface of the application," which Petitioner maps to Shiplacoff's "full-screen mode." *See supra* §§II.B, IV.B-IV.C; Pet., 15-23; EX2006,

61:22-63:2. And as Petitioner acknowledges, Shiplacoff's "card mode" is different from "full-screen mode." Pet., 6-7; EX2006, 20:7-20; EX2004, ¶67.

Petitioner attempts to bridge this gap with just two sentences from Shiplacoff:

> In one embodiment, the user can launch additional activities by returning to the launch screen as shown in FIG. 1. In one embodiment, this is performed by performing a gesture or other command.

EX1004, ¶[0099]; Pet., 23-24. Petitioner contends these two sentences suggest that Shiplacoff's system is able to distinguish "a swipe up gesture" from "a tap or flick," and, when detecting the latter in "full-screen mode," would close the displayed activity (such as the "calendar application" illustrated in FIG. 2) to switch from the "full-screen mode" to the "launch screen in FIG. 1." Pet., 23-24.

But nothing in Shiplacoff's paragraph [0099] or the other paragraphs Petitioner cites (*see* Pet., 23-24 (citing EX1004, ¶¶[0099]-[0102], [0167])) suggest that Shiplacoff's "tap or flick" input is utilized in Shiplacoff's "***full-screen mode***." EX2004, ¶69. Rather, these cited paragraphs address only the device's responses to user input while in "***card mode***" and/or "***shuffle mode***." *Id.*[5]

[5] Shiplacoff includes a section entitled "Full Screen Mode" that makes no reference to the "tap or flick" input on which Petitioner relies. EX1004, ¶¶[0075]-[0076]; EX2004, ¶70 n.2.

Specifically, Shiplacoff's paragraphs [0099]-[0102] are included in a section of the specification entitled "Card Mode." EX1004, ¶¶[0077]-[0106]; EX2004, ¶70. In all preceding paragraphs of this section, Shiplacoff describes the device's operation with respect to entering and exiting "card mode." EX2004, ¶70; *see generally* EX1004, ¶¶[0077]-[0098]. Paragraphs [0097]-[0098]—i.e., the portion of Shiplacoff's disclosure immediately preceding the portion of paragraph [0099] on which Petitioner focuses—describe how Shiplacoff's device enters, operates in, and exits "card mode" as illustrated across Shiplacoff's FIGS. 6A-6F. EX1004, ¶¶[0097]-[0098]; EX2004, ¶70. The remainder of paragraph [0099] and those that follow in this "Card Mode" section likewise describe the device's operation in "card mode," as shown in all of Shiplacoff's FIGS. 7, 8A-8B, and 9A-9D. EX2004, ¶70; *see generally* EX1004, ¶¶[0099]-[0106]. In particular, these disclosures focus on how "newly launched activities generate new cards that are added to the end of the sequence of cards shown in FIG. 7" (EX1004, ¶[0099]; EX2006, 27:16-28:9), how "a card 301 can be closed by," e.g., "clicking on a control within the card[,]… dragging the card upward off screen 101, or performing a flicking action in an upward direction" as shown in FIGS. 8A-8B (EX1004, ¶¶[0100]-[0103]; EX2006, 28:10-29:1), and how cards can be "rearrange[d]… while in card mode[] by tapping and holding… and then dragging a card 301 from one position to another" as shown over FIGS. 9A-9D (EX1004, ¶¶[0104]-[0106]). EX2004, ¶70. Nowhere in

Shiplacoff's paragraphs [0099]-[0102] is "full-screen mode" discussed or mentioned. EX2004, ¶70. Given that context, a POSITA would have viewed paragraphs [0099]-[0102] as limited to ***the specific operational context of "card mode***." EX2004, ¶70.

Shiplacoff's paragraph [0167]—which is located in a section entitled "Card Groups" (EX1004, ¶¶[0155]-[0184])—is similarly limited. The title of the section in which paragraph [0167] is included alone indicates that paragraph [0167] relates to Shiplacoff's "card mode." EX2004, ¶71. Indeed, paragraph [0167] begins by explaining that, "***[i]n shuffle mode and/or in card mode***, a user can remove a card 301 from a group by dragging the card 301 to an area of the screen not occupied by a card group." Shiplacoff, ¶[0167]; EX2004, ¶71. The paragraph then explains Shiplacoff's FIGS. 17A-17D, which further elaborate on this "shuffle mode" and/or "card mode" operation. EX1004, ¶[0167]; EX2004, ¶71; EX2006, 29:2-22. Like paragraphs [0099]-[0102], Shiplacoff's paragraph [0167] does not address "full-screen mode." EX2004, ¶71.

Petitioner's failure to address Shiplacoff's statements within their context is impermissible. *See Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 448 (Fed. Cir. 1986) ("It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what

such reference fairly suggests to one skilled in the art.") (citations omitted) (quoting *In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965)). A POSITA considering Shiplacoff as a whole would have understood the cited paragraphs of Shiplacoff to teach only detecting—and taking action in response to—Shiplacoff's "tap or flick" input while the device is in "***card mode***" and/or "***shuffle mode***." EX1004, ¶¶[0099]-[0102], [0167]; EX2004, ¶72; *see also* EX2006, 47:14-49:10 (acknowledging that "gestures are assigned a meaning depending on the context in which they're used" and that "a POSITA implementing Shiplacoff would understand that not all modes are going to use a given gesture in the same way").

Because Petitioner fails to identify any teaching or suggestion in Shiplacoff that the "tap or flick" described in paragraphs [0099]-[0102] and [0167] is detected while in "full-screen mode"—which is the only display mode Petitioner maps to "while displaying the user interface"—Petitioner's Ground 1 mapping fails.[6]

[6] Additionally, as explained below in Section VI.C.1, Petitioner's Ground 1 mapping also fails because Petitioner does not identify any teaching or suggestion in Shiplacoff that a "tap or flick" input would cause the device to switch the display from "full-screen mode" to the "launch screen," which Petitioner maps to the recited display action of Limitations [1k], [15g], and [27f].

B. Limitations [1j]-[1k], [15f]-[15g], [27e]-[27f]: Shiplacoff Does Not Teach or Suggest Using a "Movement Threshold" To Differentiate Between Inputs

As explained above, Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f] require programming logic capable of evaluating "the second input" to trigger each of the recited display actions as appropriate depending on whether "the second input" "meets" or "does not meet" "one or more criteria that is met when the second input is detected to include a movement parameter that is above a movement threshold." *See supra* §§II.B, IV.B-IV.C; EX2004, ¶74. Petitioner contends it would have been obvious to a POSITA that "Shiplacoff's device can distinguish different gestures." Pet., 23-24. But the only support Petitioner offers is that Shiplacoff purportedly discloses a device that "detects user input and differentiates between contacts and gestures such as a single tap or swipe up gesture, so that it can determine the appropriate corresponding operation to execute." *Id.*, 21-22.

Even if that were an accurate characterization of Shiplacoff—and PO does not agree that it is—distinguishing between an input that does ***not*** have movement (such as a tap) and one that does have movement (such as a swipe) is insufficient to render obvious Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f]. Those limitations recite that "the second input" includes "movement across the display" and further recite determining whether that input includes "a movement parameter above a movement threshold." *See supra* §§II.B, IV.B-IV.C; EX2004, ¶75. Thus, the plain language

of the claims requires programming logic to distinguish between two inputs, both of which include movement across the display, based on whether the movement parameter of the input is above or below a movement threshold. EX2004, ¶75.

Shiplacoff does not teach or suggest distinguishing between two inputs on that basis. Instead, Shiplacoff teaches distinguishing between inputs that involve movement across the display (such as its "swipe up" gesture or "flick" input) based on whether the input does or does not include contact with an off-screen "gesture area." EX1004, ¶[0066]; EX2004, ¶76.

As shown in the annotated version of Shiplacoff's FIG. 1 inset below, the device described in Shiplacoff includes a "touch-sensitive gesture area 102" (green) that "extend[s] beyond the edges of touch-sensitive screen 101" (red):

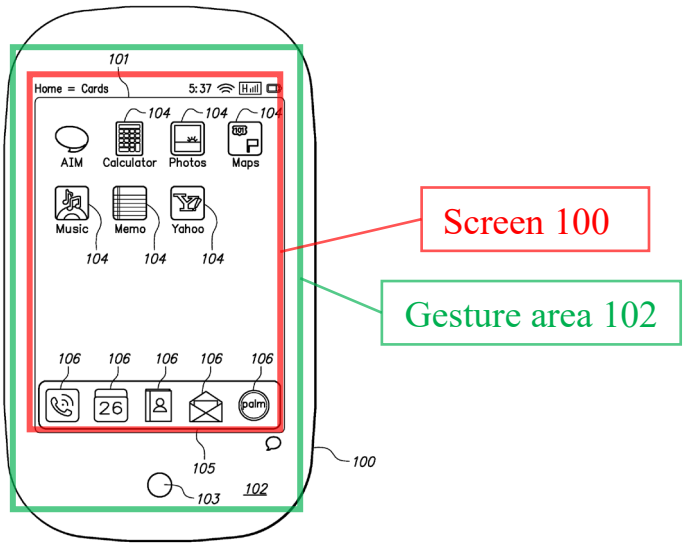


FIG. 1

EX1004, FIG. 1 (annotated), ¶¶[0064],[0066]; EX2004, ¶77; *see also* EX2003, ¶¶[0060], [0062].

When describing how the device uses these "touch-sensitive" areas to distinguish between different gestures and to activate the appropriate corresponding function, Shiplacoff refers to Duarte-992, which Shiplacoff incorporates by reference. EX1004, ¶¶[0066], [0064]; EX2004, ¶78. Duarte-992 teaches that the device "allows the user to enter touch commands such as gestures in gesture area 102 and/or touch-sensitive screen 101, as well as to enter touch commands that ***cross over*** from gesture area 102 to touch-sensitive screen 101, and vice versa." EX2003, ¶[0059]; EX2004, ¶78; *see also* EX2006, 73:19-74:5 (acknowledging consistent item numbering between Shiplacoff and Duarte-992). The device then evaluates whether the command "includes one ***or both of these areas***, and can perform whatever action is appropriate to such input." EX2003, ¶[0013]; EX2004, ¶78.

For example, Shiplacoff teaches that its "swipe up" gesture "begin[s] in gesture area 102 and extend[s] onto screen 101." EX1004, ¶[0127]; EX2004, ¶79; *see also* EX2003, ¶[0077]. A POSITA would have understood from this disclosure that Shiplacoff's device differentiates its "swipe up" gesture from its "flick" input[7] based on the fact that the "swipe up" gesture begins in the gesture area and includes "a cross over" from gesture area 102 to touch-sensitive screen 101. EX2004, ¶79.

[7] As explained below in Sections VI.C.1-VI.C.2, Shiplacoff defines its "flick" input as being an input that begins on-screen.

Neither Shiplacoff nor Duarte-992 suggest distinguishing between user inputs based on a movement threshold. EX2004, ¶80. Instead, Duarte-992 teaches "implementing a vocabulary of touch commands including gestures that are performed within gesture area 102, within screen 101, ***or on some combination of the two***" to "expand[] the available space and the vocabulary of gestures over prior art systems." EX2003, ¶[0072]; EX2004, ¶80. In other words, it is the "'***gesture area[]***' [that] allows a user to activate commands using a gesture vocabulary." *See* EX2003, Abst.; EX2004, ¶80. Accordingly, a POSITA would have understood Shiplacoff to teach differentiating user input based on whether the input includes contact with Shiplacoff's gesture area, rather than whether the input includes a "movement parameter that is above a movement threshold." EX2004, ¶80.

Because Shiplacoff does not teach or suggest using a "movement threshold" to differentiate between inputs, Shiplacoff cannot render obvious Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f].

C. Limitations [1k], [15g], [27f]: Petitioner's Mapping of Shiplacoff's "Tap or Flick" Input Fails for Several Reasons

Petitioner's mapping for Limitations [1k], [15g], and [27f] is premised on Shiplacoff's disclosures regarding the use of its "tap or flick" input, which Petitioner contends causes the device to "return[] to the launch screen" when in "full-screen mode." Pet., 23-24. As explained below, however, that mapping fails because: (1) Shiplacoff does not teach or suggest that its "tap or flick" input triggers a switch

from "full-screen mode" to "the launch screen," (2) a POSITA would not have been motivated to modify Shiplacoff to do so, and (3) a "tap" input does not "include[] movement across the display" and therefore cannot be "the second input."

1. Shiplacoff Does Not Teach or Suggest That Its "Tap or Flick" Input Triggers the Recited Display Action

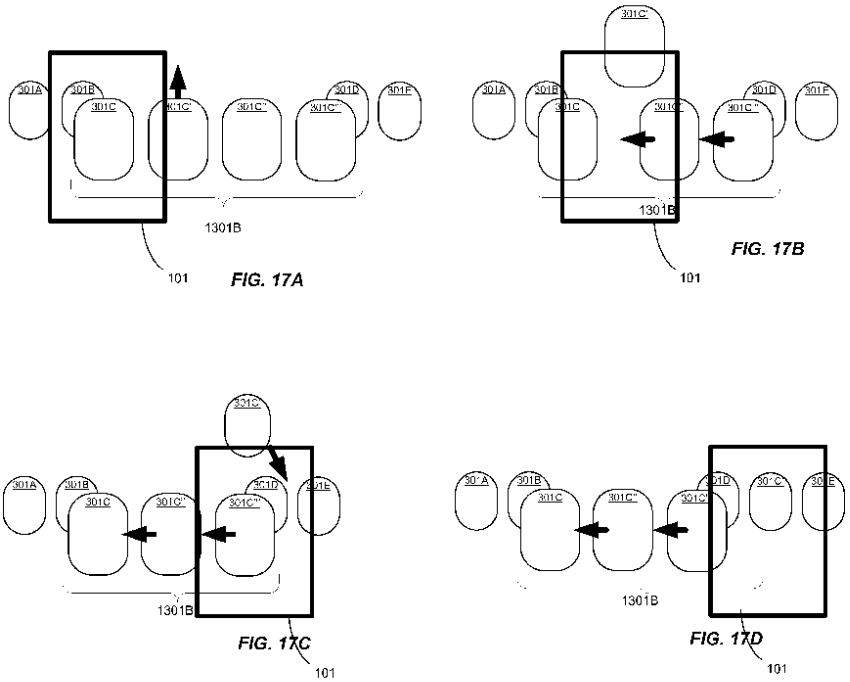
The display action recited in Limitations [1k], [15g], and [27f] is "replacing the user interface of the application with the home screen including the icon associated with the application." *See supra* §§II.B, IV.B-IV.C; EX2004, ¶83. Petitioner maps the claimed "user interface of the application" to Shiplacoff's "full-screen mode" and the claimed "home screen" to Shiplacoff's "launcher screen." Pet., 16-23; EX2006, 61:22-63:2, 64:9-65:6. But Petitioner fails to identify any teaching in Shiplacoff that its "tap or flick" input triggers a switch from "full-screen mode" to the "launcher screen." EX2004, ¶83.

As explained above, the parts of Shiplacoff Petitioner cites for Shiplacoff's "tap or flick" input (i.e., ¶¶[0099]-[0102] and [0167]) are limited to the specific operational context of "***card mode***" and/or "***shuffle mode***." EX2004, ¶84; *see supra* §VI.A. Additionally, the cited parts of Shiplacoff relate to the use of its "tap or flick" input in these modes to close cards, ***not*** to switch from "full-screen mode" to the "launcher screen." EX2004, ¶84; *see supra* §VI.A. And because Shiplacoff teaches that display modes are optimized for different purposes, a POSITA would have understood that an input used to trigger an action in one display mode—such as

Shiplacoff's "tap or flick" input in "card mode"—would not be programmed to trigger the same action in a different display mode. EX2004, ¶84; *see also* EX2006, 39:6-21 (agreeing that, "when you're in full-screen mode, certainly that is optimized for interaction with a particular activity, like your calendar application or your email or whatever it may be," "[a]nd when you're using gestures to interact in general with your device, some of those gestures will be focused on that activity").

For example, Shiplacoff teaches that "card mode is optimized for easily switching focus from one activity to another and for easily initiating and terminating activities." EX1004, ¶[0074]; EX2006, 24:4-8; EX2004, ¶85. To achieve this, "card mode" displays multiple "cards" on-screen that each represent an "activity" and enables the user to move cards (either rearranging them on the screen or moving them off the screen) "so as to change focus from one card to another." EX1004, ¶[0015]; EX2006, 22:8-17, 31:1-6; EX2004, ¶85. Shiplacoff teaches that "shuffle mode" is similarly "optimized for reordering and manipulating cards representing activities." EX1004, ¶¶[0074], [0016]; EX2006, 30:12-31:6; EX2004, ¶85.

Within this context, a POSITA would have understood Shiplacoff to disclose that its "tap or flick" input is an on-screen input available in "card mode" that "cause[s] cards to move on the screen, so as to change focus from one card to another." EX2004, ¶86; EX1004, ¶¶[0015]-[0016], [0112]. This is illustrated in Shiplacoff's FIGs. 17A-17D inset below:



EX1004, 17A-17D, ¶[0167]; EX2004, ¶86; *see also* EX1004, ¶[0112].

In contrast, Shiplacoff teaches that "in a full-screen mode, one activity occupies substantially an entire display screen" and "[t]he user interacts with the active activity (such as the calendar application shown in FIG. 2) by conventional user interface methods, including manipulating on-screen elements, entering text, and the like." EX1004, ¶¶[0014], [0076]; EX2004, ¶87; *see also* EX2006, 23:3-8 (agreeing that "card mode is optimized for something different than what full-screen mode is optimized for"), 39:6-21 (acknowledging that, "when you're in full-screen mode, certainly that is optimized for interaction with a particular activity," and so "when you're using gestures to interact in general with your device, some of those gestures will be focused on that activity").

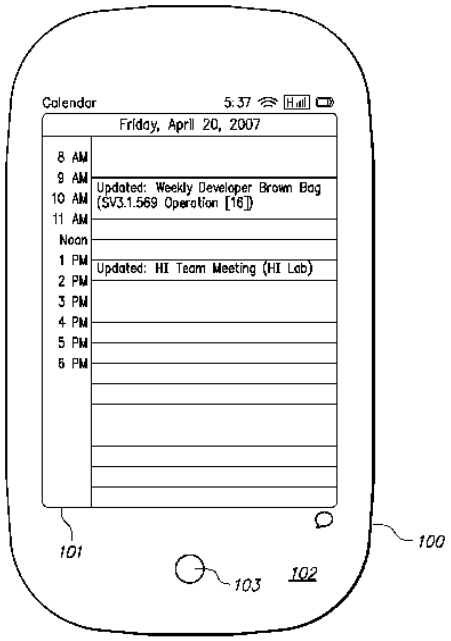


FIG. 2

EX1004, FIG. 2. Given these teachings, a POSITA would not have recognized Shiplacoff's "tap or flick" input—which Shiplacoff describes as being an on-screen input for "manipulating ***cards*** representing activities" when in "card mode" (*id.*, ¶¶[0074], [0099]-[0101])—to be applicable to or available in "full-screen mode"—which is instead optimized for, e.g., "manipulating ***on-screen elements***" ***within*** a single "active activity" (*id.*, ¶[0076]). EX2004, ¶87; *see also* EX2006, 26:1-17 (acknowledging "[f]ull-screen mode and card mode are different modes, different user interfaces. And in full-screen mode, you are ***not*** navigating through a set of different cards"), 24:16-25:2 (explaining that "in card mode you cannot have a focus on a single activity to interact with, so you would have to change modes if you want to do that").

Although Shiplacoff teaches several mechanisms for "switching among modes," it does not suggest any gesture or touch-input that triggers switching from "full-screen mode" (which Petitioner maps to the "user interface of the application" to the "launch screen" (which Petitioner maps to "the home screen"). EX2004, ¶88. In particular, in paragraphs [0124]-[0132], Shiplacoff describes various inputs that trigger switching between the four display modes (i.e., "full-screen," "card," "shuffle," and "grid"), but describes switching to the "launcher screen" ***only*** from "card mode" and ***only*** in response to its "swipe up" or "swipe down" gestures. EX1004, ¶¶[0124]-[0132]; EX2004, ¶88. Thus, Petitioner fails to show that Shiplacoff suggests the use of its "tap or flick" input to trigger "replacing the user interface of the application with the home screen." EX2004, ¶88.

Apparently recognizing this failure, Petitioner alternatively argues that a POSITA would have found it obvious to use Shiplacoff's "tap or flick" input to trigger "replacing the user interface of the application with the home screen." Pet., 23-24. But that theory fails because, as explained below, Petitioner fails to show that a POSITA would have been motivated to modify Shiplacoff to do so.

2. A POSITA Would <u>Not</u> Have Been Motivated To Modify Shiplacoff Such That Its "Tap or Flick" Input Triggers "Replacing the User Interface of the Application with the Home Screen"

The Petition does not identify any particular motivation to modify Shiplacoff such that Shiplacoff's "tap or flick" input would trigger the recited display action of

Limitations [1k], [15g], [27f]. Instead, Petitioner asserts merely that it would have been "a matter of design choice" to use the "tap or flick" to "return the display… to the launch screen." Pet., 24. Aside from Shiplacoff—which does ***not*** teach or suggest using its "tap or flick" to switch from "full-screen mode" to the "launch screen" (*see supra* §VI.C.1)—Petitioner's only support for this assertion is its expert's testimony, which merely repeats *verbatim* the conclusory assertion found in the Petition. *Compare* Pet., 24 (citing EX1003, ¶61), *with* EX1003, ¶61.

Neither Petitioner nor its expert articulate why a POSITA would have been motivated to modify Shiplacoff to use its "tap or flick" input to trigger switching from "full-screen mode" to the "launch screen." The conclusory assertions of Petitioner and its expert are not enough to establish motivation. *See In re Nuvasive, Inc*., 842 F.3d 1376, 1383 (Fed. Cir. 2016); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9, 15 (PTAB Aug. 24, 2022) (precedential) (unsupported assertions of an expert are "entitled to little weight").[8]

Further, Petitioner improperly attempts to stitch together an obviousness theory based on "selected bits and pieces" of Shiplacoff's disclosure while failing to

[8] *See also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (requiring "a reason" for a skilled artisan "to combine the elements in the way the claimed new invention does").

account for its teachings as a whole. Setting aside Shiplacoff's "tap" input, which independently fails to satisfy the claims (*see infra* §VI.C.3), Shiplacoff teaches away from using its "flick" to switch from "full-screen mode" to the "launcher screen."

For example, Shiplacoff teaches that its "full-screen mode" reserves substantially the entire user-interface area for, e.g., "manipulating ***on-screen elements***" within a single "active activity." EX1004, ¶¶[0076], [0074]; EX2006, 39:6-21 (acknowledging that, in "full-screen mode," "when you're using gestures to interact in general with your device, some of those gestures will be focused on that activity"); EX2004, ¶93. 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. EX2004, ¶93; *see also* EX2006, 42:16-45:17 (agreeing that, "[i]n any given user interface or mode, a gesture should have a single meaning."), 49:11-51:16 (agreeing that "a POSITA implementing Shiplacoff is going to consider which gesture might be appropriate for a given mode" and would avoid, for instance, "us[ing] tapping for switching from the full-screen mode" because Shiplacoff's "tap" "key[s] off the idea that there could be unoccupied areas of the screen or not occupied by any card" when in "card mode, shuffle mode, and grid mode").

A POSITA would have understood that Shiplacoff's "flick" input is already programmed to trigger a different action in "full-screen mode." Shiplacoff explains that, in "full-screen mode," "[t]he user interacts with the active activity (such as the calendar application shown in FIG. 2) by conventional user interface methods, including manipulating on-screen elements[.]" EX1004, ¶[0076]; EX2004, ¶94. A number of such "conventional" techniques for "direct manipulation of on-screen objects" are disclosed by Shiplacoff through incorporation by reference of Duarte-992. EX1004, ¶[0066]; EX2003, ¶¶[0013], [0006], [0080]; EX2004, ¶94. In particular, Duarte-992 discloses "a ***drag-scroll*** operation" in which a user performs "a ***drag*** gesture (also referred to as a ***flick*** gesture) across [the] screen in a direction that supports ***scrolling*** for the current state of the display." EX2003, ¶[0089] (item numbering omitted); EX2004, ¶94. Thus, 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. EX2004, ¶94; *see also* EX2006, 71:16-73:18 (admitting to not having seen or reviewed Duarte-992).

Even without these express disclosures, a POSITA would have understood that inputs similar to Shiplacoff's "flick" input commonly trigger scrolling within an application. EX2004, ¶95; *see also* EX2006, 83:5-12 ("So in a particular context or state a flick could support scrolling."). For example, as Dr. Madisetti explains, a POSITA would have understood that, when a "calendar application" is active (such

as displayed in "full-screen mode" in Shiplacoff's FIG. 2), a "vertical finger swipe" on the displayed calendar would conventionally be used for scrolling to other months, dates, and/or times in the calendar. EX2004, ¶96 (citing EX2008, ¶¶[0169]-[0181], [0217], and comparing EX2008, FIGS. 5A, 7E, with EX1004, FIG. 2). As another example, Dr. Madisetti explains that a POSITA would have understood that, when an "email application" is active (such as on shown in "full-screen mode" in Shiplacoff's FIG. 5), "vertically upward and/or vertically downward gestures… on the touch screen" would likewise typically be used for scrolling, including to other emails in the depicted inbox and scrolling through a selected email itself. EX2004, ¶97 (citing EX2009, ¶¶[0638]-[0672], [0678], and comparing EX2009, FIG. 35A, with EX1004, FIG. 5); *see also* EX2006, 41:15-22 (acknowledging that "in th[e] email application that's shown in [Shiplacoff's] Figure 5, a user would expect to be able to scroll up and down in those messages").

Given this background knowledge, as well as the teachings of Shiplacoff and Duarte-992, a POSITA would have avoided programming Shiplacoff's "flick" or other on-screen user inputs with similar attributes to trigger switching from "full-screen mode" to another mode so as to avoid any ambiguity about whether the input was instead intended for scrolling. EX2004, ¶98; *see also* EX2006, 44:15-45:17 (agreeing that "within the same mode, a single gesture… has to have a single effect, like has to map to a single command, if you will. And that means by a single gesture

it has to have something that's distinguishable to a user and the system"). Indeed, Duarte-992 explains that mobile devices, particularly those with small screens, are already "relatively unforgiving in their interpretation of user input" and create "difficulty activating the correct command or object." EX2003, ¶¶[0008]-[0009]; EX2004, ¶98. To avoid further difficulty, a POSITA would not have sought to use an input already used for scrolling in "full-screen mode," such as Shiplacoff's "flick," to trigger a switch from "full-screen mode" to another display mode or to the "launch screen." EX2004, ¶98.

Further, Shiplacoff not only teaches away from using its "flick' input to trigger switching from "full-screen mode" to a different display mode, but instead teaches that such a display change is triggered by a gesture or command beginning in an ***off-screen*** area. EX2004, ¶99. For example, Shiplacoff's paragraph [0127] teaches that "switch[ing] ***from*** full-screen mode" to another display mode is triggered by "a 'swipe up' gesture beginning ***in gesture area 102***" (green, below) "and "extending onto screen 101" (red, below):

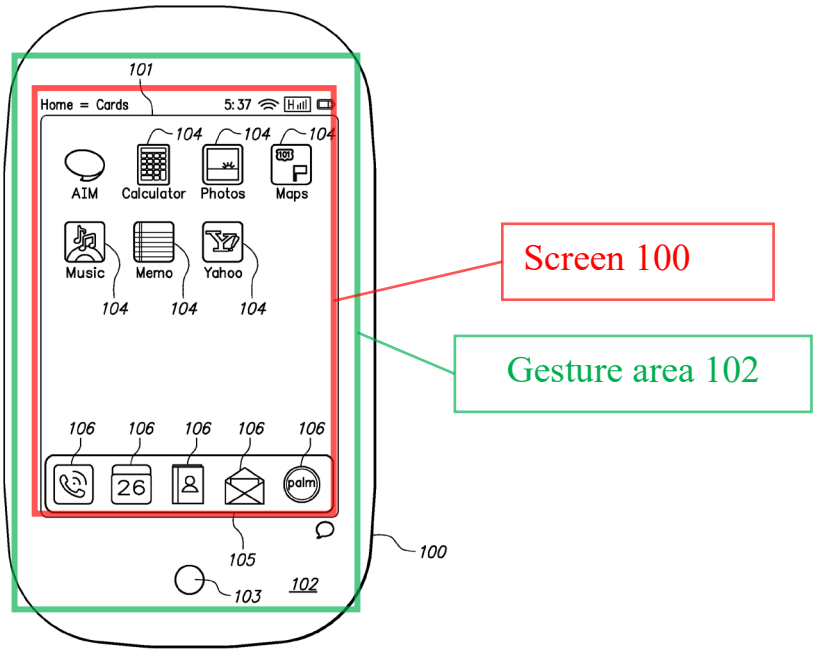


FIG. 1

EX1001, FIG. 1 (annotated), ¶[0127]; EX2003, ¶¶[0060], [0062]; EX2006, 35:18-36:16; EX2004, ¶99; *see also, e.g.*, EX1004, ¶¶[0067] ("***[P]hysical button 103*** can be used to toggle between full-screen mode and card mode[.]"), [0079] ("[T]he user can move cards 301 left and right by ***dragging a finger along gesture area 102***[,]… even in full-screen mode[.]").

In contrast, Shiplacoff's next paragraph teaches that "a 'swipe down' gesture," beginning ***on screen 101*** and extending onto gesture area 102" can trigger "switch[ing] ***to*** full-screen mode" from "card mode." EX1004, ¶[0128]; EX2004, ¶100. While noting that its "swipe down" gesture can cause switching between ***certain*** modes, Shiplacoff does ***not*** teach that its "swipe down" gesture "switch[es] ***from*** full-screen mode" to any other display mode or to the launch screen. EX1001,

¶[0128]; EX2006, 37:14-38:13; EX2004, ¶100. Given these teachings, a POSITA would not have been motivated to modify Shiplacoff to use its "flick" input—which is described as an input "performed ***on[-]screen***"—to switch from "full-screen mode" to another display mode or to the "launcher screen." *See* EX2003, ¶¶[0105], [0080], [0099]-[0100]; EX1004, ¶¶[0060], [0112] (describing use of its "flick" input in "card mode" to close cards, which are "areas ***of the screen*** that can be moved and manipulated by the user"); EX2004, ¶100; *see also* EX2006, 46:12-47:13 (agreeing that, "in a hypothetical example where you have an identical gesture, it has to have a single effect. It can't have an effect of doing something within the user interface mode and then switching to another mode"); EX2003, ¶[0008] ("[S]ome operations in connection with control of an electronic device are **not** particularly well suited to **direct** manipulation. These include operations that affect the ***entire screen***, ***application environment***, or the device itself.").

Petitioner's failure to address these broader teachings is fatal to its obviousness theory. *See In re Enhanced Sec. Research*, 739 F.3d 1347, 1355 (Fed. Cir. 2014) ("§103 does not permit… stitch[ing] together an obviousness finding from discrete portions of prior art references without considering the references as a whole." (citing *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1578 (Fed. Cir. 1987)); *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1332 (Fed. Cir. 2016) ("must consider the prior art 'in its entirety, i.e., as a whole'").

3. Shiplacoff's "Tap" Input Does Not Meet the Requirements of the Claimed "Second Input"

Independently, Petitioner's mapping of Shiplacoff's "tap" input to "the second input" of Limitations [1k], [15g], and [27f] fails because a "tap" does not "include[] movement across the display As explained above, Limitations [1i], [15e], [27d]—which recite detecting "***a second input*** by a second contact that includes movement across the display in a direction"—provide the antecedent basis for "***the*** second input" recited in Limitations [1j]-[1k], [15f]-[15g], and [27e]-[27f]. *See supra* §II.B, IV.C. Accordingly, to satisfy Limitations [1k], [15g], and [27f], "***the*** second input" must be "by a second contact that includes movement across the display in a direction." *See supra* §IV.C; *Creative*, 476 F. App'x at 728-29.

The Petition does not identify any teaching in Shiplacoff that a "tap" input meets all claimed requirements for the "second input." While Petitioner asserts that Shiplacoff's "swipe up" gesture involves "movement across the display in a direction," Petitioner makes no such assertion for Shiplacoff's "tap" input. *See, e.g.*, Pet., 16 (describing only Shiplacoff's "swipe up" gesture as involving "movement"). Nor does Petitioner include any assertion that a POSITA would have understood a "tap" input to include "movement across the display." *See, e.g.*, *id.* And as explained by Dr. Madisetti, a POSITA would have understood the "tap" input described by Shiplacoff to be a touchscreen input that does ***not*** include movement across the screen. EX2004, ¶102. This is consistent with Shiplacoff's disclosure,

which distinguishes between "tapping" on a card and "dragging" the card "from one position to another." EX1004, ¶[0104]; EX2004, ¶102. Accordingly, Petitioner's mapping of Shiplacoff's "tap" input to Limitations [1k], [15g], and [27f] fails.

D. Limitation [27f]: Petitioner's "Alternative[]" Theory for Limitation [27f] Fails Because It Is Conclusory

For Limitation [27f]—though not for the corresponding limitations of Claims 1 and 15—Petitioner presents an "[a]lternative[]" theory based on Shiplacoff's purported teaching "that various mechanisms can 'be provided for switching among the modes.'" *Compare* Pet., 39-40, *with id.*, 23-24, 34. But Petitioner fails to articulate this alternative theory with the statutorily required "particularity." *See Harmonic Inc. v. Avid Tech., Inc*., 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. §312(a)(3)); *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("[T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute."); *In re Magnum Oil Tools Int'l, Ltd.,* 829 F.3d 1364, 1380 (Fed. Cir. 2016) (holding that, to carry its burden, Petitioner must "articulate specific reasoning, based on evidence of record")). Instead, Petitioner merely asserts:

> It would have been obvious to a POSITA that, as a matter of a flexible design choice, the gesture to switch back to the home screen would have involved a gesture that is different from the slide up gesture, and would have involved movement beyond a movement threshold but would not require a duration of the gesture beyond a duration threshold.

Pet., 40. The only support Petitioner cites is a paragraph of its expert's declaration that includes the same conclusory assertion. *Compare id.* (citing EX1003, ¶85), *with* EX1003, ¶85. Neither Petitioner nor its expert explain why a POSITA would have chosen a gesture that "involved movement beyond a movement threshold, but [did not involve] a duration… beyond a duration threshold," as required by Limitation [27f]. Nor does Petitioner identify any teaching in the art suggesting using an input that satisfies those specific parameters.

Rather, Petitioner improperly uses the claim language as a roadmap to argue that a POSITA, recognizing some flexibility in implementing "various mechanisms," would have used an input that satisfies the precise requirements of Claim 27. Those threadbare allegations fall far short of "identify[ing] 'with particularity... the evidence that supports the grounds for the challenge to each claim.'" *See Harmonic*, 815 F.3d at 1363; *Intelligent Bio-Systems*, 821 F.3d at 1369; *Magnum*, 829 F.3d at 1380; 35 U.S.C. §312(a)(3); *see also Ex Parte Levengood*, 28 USPQ2d 1300 ("That which is within the capabilities of one skilled in the art is ***not*** synonymous with obviousness.").

VII. PETITIONER'S GROUND 2 FAILS TO CURE GROUND 1'S DEFECTS FOR LIMITATIONS [1K], [15G], AND [27F]

Despite relying on Nan for certain other limitations, Petitioner's Ground 2 obviousness theory for Limitations [1k], [15g], and [27f] is premised on the same flawed mapping as Ground 1 (i.e., the mapping of those limitations to Shiplacoff's

"tap or flick" input). *See supra* §VI. Accordingly, Petitioner's Ground 2 fails for the same reasons discussed above.

Petitioner's Ground 2 proposes combining Shiplacoff with Nan such that Shiplacoff's device is modified to utilize Nan's "edge gesture." Pet., 43-45. Although Petitioner broadly alleges that this combination renders obvious the features of Limitations [1i]-[1k], [15e]-[15g], and [27d]-[27f], Petitioner's Ground 2 contentions only substantively address modifying Shiplacoff such that "the edge gesture" of Nan "would substitute ***the swipe up gesture*** in Shiplacoff." *See id.*, 46-48 (addressing Claim 1 and citing those contentions for Claims 15 and 27).

As discussed above for Ground 1, Petitioner maps Shiplacoff's "swipe up" gesture to "the second input" of Limitations [1j], [15f], and [27e], but maps Shiplacoff's "tap or flick" to "the second input" of Limitations [1k], [15g], and [27f]. *See supra* §VI.A. Consistent with that mapping, 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]). Petitioner contends Nan's "edge gesture" would be "used to execute a change from the full-screen mode to the card mode," which is Petitioner equates to "displaying at least a portion of the user interface of the application in a first virtual display layer that appears at a lesser depth…," as in Limitation [1j]. Pet., 46-47, 17-23.

Similarly, Petitioner asserts that Nan's "edge gesture" includes "movement [that] is ***above*** the movement threshold." *Id.*, 47. That contention is necessarily related to Limitation [1j]—i.e., "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"—*rather than* Limitation [1k]—i.e., "the second input does not meet" that criteria. *Compare id.*, *with* EX1001, Limitations [1j]-[1k].

Petitioner's Ground 2 contentions for Claim 15 merely cross-reference its Ground 2 contentions for Claim 1. Pet., 47. Petitioner's Ground 2 contentions for Claim 27 likewise cross-reference its Ground 2 contentions for Claim 1, but include additional contentions for the portion of Limitation 27[e] that recites "the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold." *Id.*, 48. Specifically, Petitioner asserts that, "because Nan discloses that its edge gesture can have an associated length (movement) and hold time (duration) characteristics ('second one or more criteria') and because the gesture handler determines that an edge gesture has been made when a user input ('second input') satisfying the length and hold is detected ('a duration parameter that is above a duration threshold'), [Shiplacoff-Nan] renders obvious 'the second input that meets a second one or more criteria that is met when the second input is detected to include a duration parameter that is above a duration threshold.'" *Id.*, 48-49 (citations and emphases omitted).

Petitioner's Ground 2 contentions do not mention Shiplacoff's "tap or flick" input, which Petitioner mapped for Limitations [1k], [15g], and [27f] in Ground 1, much less propose modifying that aspect of Shiplacoff in light of Nan's "edge gesture" teachings. *Id.*, 41-49; *see also* EX2006, 66:7-67:16 (admitting that Dr. Terveen "only gave the example here of the swipe up gesture" being substituted by Nan's "edge gesture"). Thus, Petitioner's Ground 2 contentions do not purport to alter Petitioner's Ground 1 obviousness theory for Limitations [1k], [15g], and [27f].

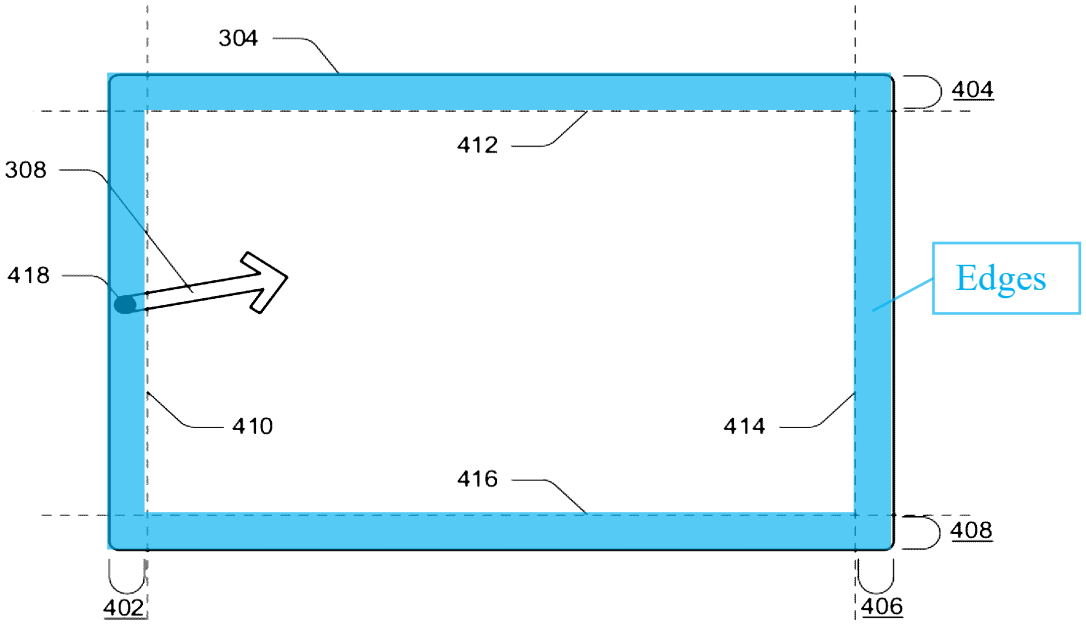
Because Petitioner's Ground 2 only substantively addresses the requirements of Limitations [1j], [15f], and [27e], Ground 2 fails to cure Ground 1's defects with respect to the other claim limitations discussed above. *See Harmonic*, 815 F.3d at 1363; *Intelligent Bio-Systems*, 821 F.3d at 1369; *Magnum*, 829 F.3d at 1380; 35 U.S.C. §312(a)(3). In particular, Petitioner's Ground 2 fails to remedy the fatal flaws in Petitioner's mapping of Shiplacoff's "tap or flick" input to "the second input" of Limitations [1k], [15g], and [27f]. *See supra* §VI.C. Thus, like Ground 1, Petitioner's Ground 2 fails to establish unpatentability of any Challenged Claim.

VIII. THE PETITION FAILS TO SHOW THAT A POSITA WOULD HAVE BEEN MOTIVATED TO COMBINE SHIPLACOFF AND NAN

Petitioner's Ground 2 further fails because 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* Pet., 43-45.

Nan teaches using an "edge gesture" that includes "a start point… ***at an edge***."

EX1005, 4:35-36; EX2004, ¶103. Nan explains that "an edge" for an "edge gesture" is a "small" region of pixels that extends inward up to an "edge limit." As shown in Nan's FIG. 4, inset and annotated below, four [blue] "edges" each lie between the "display limit" of an "immersive interface 304" and an inner "edge limit." EX1005, 4:52-62; EX2004, ¶103.



EX1005, 4:35-62, FIG. 4 (annotated); EX2004, ¶103.

Nan teaches that its device distinguishes between an "edge gesture" and other touch inputs by determining whether the "start point" of the touch event "is at an edge." EX1005, 4:35-5:2; EX2004, ¶104. For example, Nan teaches that the device "receiv[es] data indicating [X,Y] coordinates in pixels at which [a] gesture begins and compar[es] the first of these coordinates to those pixels contained within each edge." EX1005, 4:65-5:2 (item numbering omitted); EX2004, ¶104.

Although 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," Nan's teaching regarding differentiating "edge gestures" from other touch inputs remain the same. EX1005, 4:35-47; EX2004, ¶105. That is, Nan teaches that an "edge gesture" is identified by determining whether the starting point of a user input is within an "edge." EX1005, 4:35-5:2; EX2004, ¶105. Thus, in embodiments where the "edge" is off-screen, it is treated the same as an on-screen "edge" for purposes of detecting an "edge gesture." EX1005, 4:35-5:2; EX2004, ¶105.

Incorporating Nan's edge gesture into Shiplacoff's device would render Shiplacoff's off-screen "gesture area" inoperable. As explained above in Section VI.B, Shiplacoff teaches that its device distinguishes between gestures and other touch inputs based on whether the touch input includes contact with this "gesture area," such as a "cross over" between the gesture area and the screen. *See supra* §VI.B; EX2004, ¶106. If Shiplacoff were modified to utilize Nan's "edge gesture" as proposed by Petitioner, on-screen and off-screen touch inputs would no longer be differentiated from one another. EX2004, ¶103. Rather, in accordance with Nan's teachings, whether a touch input occurs off-screen and on-screen would not be a basis for differentiation between inputs. *See* EX1005, 4:35-5:2; EX2004, ¶106. Instead, an "edge gesture" would be distinguished from other touch inputs based on

whether the touch input starts in an "edge," regardless of whether the "edge" is on-screen or off-screen. EX2004, ¶106.

A POSITA would ***not*** have been motivated to render Shiplacoff's "gesture area" inoperable for its intended purpose and thereby negate its associated benefits, such as "expand[ing] the available space and the vocabulary of gestures." *Plas-Pak Industries, Inc. v. Sulzer Mixpac AG*, 600 F. App'x. 755, 758 (Fed. Cir. Jan. 27, 2015) ("[C]ombinations that change the 'basic principles under which the [prior art] was designed to operate,' or that render the prior art 'inoperable for its intended purpose' may fail to support a conclusion of obviousness." (citations omitted) (quoting *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984))); EX2004, ¶107. *Compare* EX1005, 4:35-5:2, *with* EX2003, ¶[0072]. Indeed, Duarte-992—which Shiplacoff incorporates by reference—teaches away from using gestures such as Nan's "edge gesture." EX2004, ¶107. Duarte-992 teaches that, while an area comparable to Nan's "edge"—i.e., a "gap between [the] gesture area and screen"—may be present, the device will "simply ***ignore*** the gap when interpreting touch commands that cross over from gesture area 102 to touch-sensitive screen 101, and vice versa." EX2003, ¶[0060]; EX1005, 4:35-62; EX2004, ¶107. In light of these teachings, a POSITA would not have been motivated to modify Shiplacoff to utilize this "gap" or "edge" of Shiplacoff's

touchscreen for differentiating user inputs, and thus would have found Nan's "edge gesture" unsuitable for use in Shiplacoff's device. EX2004, ¶107.

Petitioner's attempt to "to stitch together an obviousness finding from discrete portions of prior art references" while failing to address this teaching away is improper. *See Enhanced Sec.*, 739 F.3d at 1355; *see also Panduit*, 810 F.2d at 1568 ("[A] prior patent must be considered in its entirety, i.e., as a ***whole*****,** including portions that would lead away from the invention in suit." (emphasis in original)); *InTouch Techs., Inc. v. VGo Commc'ns, Inc*., 751 F.3d 1327, 1349 (Fed. Cir. 2014) (noting impropriety of combining references "like separate pieces of a simple jigsaw puzzle" without "explain[ing] what reason or motivation one of ordinary skill in the art… would have had to place these pieces together"). Petitioner fails to articulate an adequate motivation to combine Shiplacoff and Nan given the teachings away from the proposed combination. Accordingly, Petitioner cannot legally establish obviousness under Ground 2. *KSR*, 550 U.S. at 418; *Virtek Vision Int'l v. Assembly Guidance Sys.,* 97 F.4th 882, 887 (Fed. Cir. 2024) ("*KSR* did not do away with the requirement that there must exist a motivation to combine various prior art references in order for a skilled artisan to make the claimed invention.").

IX. THE PETITION FAILS TO ESTABLISH OBVIOUSNESS OF ANY OF DEPENDENT CLAIMS 2-3, 16-17, AND 28-29

As explained in Section IV.C, Dependent Claims 2-3, 16-17, and 28-29 recite further constraints on "detecting ***the*** second input" of Limitations [1i]-[1k], [15e]-

[15g], and [27d]-[27f]. But Petitioner's mapping for Dependent Claims 2-3, 16-17, and 28-29 is inconsistent with its mapping for "the second input" of Limitations [1i]-[1k], [15e]-[15g], and [27d]-[27f].

For Dependent Claims 2, 16, and 28, Petitioner's contentions are limited to Shiplacoff's "swipe up" gesture and Nan's "edge gesture," which Petitioner maps alternatively (in both Grounds 1 and 2) to "the second input" recited of Limitations [1i]-[1j], [15e]-[15f], and [27d]-[27e]. Pet., 25-26 ("[I]t would have been obvious to a POSITA that, at least part of the 'swipe up' gesture (notably the part that starts at the edge of screen 101) would have included 'movement that starts at an edge of the display.'" (emphasis omitted)), 35, 40, 47, 49. 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, 16, and 28. *See id.* Thus, Petitioner's contentions for Claims 2, 16, and 28 are inconsistent with Petitioner's own obviousness theory, which is premised on mapping Shiplacoff's "tap or flick" input to "the second input." For this reason alone, Petitioner's obviousness theory for Claims 2, 16, and 28 fails.

Additionally, and as explained above, Petitioner fails to demonstrate that Shiplacoff's "tap or flick" input satisfies the requirements of any limitation of Claims 1, 15, and 27. *See supra* §VI.C. Had Petitioner attempted to map

Shiplacoff's "tap or flick" input to Dependent Claims 2, 16, and 28, such a mapping would also have failed because Shiplacoff does not teach or suggest that its "tap or flick" input "includes movement that starts at an edge of the display." EX2004, ¶110. Again, Shiplacoff's "flick" input is disclosed as being "performed ***on[-]screen***" for "***direct*** manipulation of" on-screen objects such as "cards." *See supra* §§VI.C.1-VI.C.2. The "flick" input thus starts "***on[-]screen***" and not "at an edge of the display" as claimed. EX2004, ¶110. Further, a "tap" input contains no "movement" and thus equally fails to meet the claimed "movement that starts at an edge of the display." *See supra* §VI.C.3; EX2004, ¶110.

Petitioner's mapping for Dependent Claims 3, 17, and 29 is similarly deficient. *See* Pet., 26-27. Petitioner's contentions for Claim 3 consist entirely of a cross-reference to Petitioner's contentions for Limitation [1i] and Dependent Claim 2, which again are limited to allegations that Shiplacoff's "swipe up" gesture and, alternatively, Nan's "edge gesture" satisfy those limitations. *Id.*; *see also id.*, 34, 40, 47, 49. Petitioner makes no allegation that Shiplacoff's "tap or flick" input satisfies the additional requirements of Dependent Claims 3, 17, and 29. Thus, as with Dependent Claims 2, 16, and 28, Petitioner's contentions for Dependent Claims 3, 17, and 29 are inconsistent with Petitioner's own obviousness theory.

X. CONCLUSION

For the foregoing reasons, Patent Owner respectfully asks that the challenged claims be upheld.

Dated: May 8, 2025

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(a)(i), the undersigned certifies that this Paper—exclusive of the table of contents, table of authorities, certificate of service, and this certificate of word count—includes 13,966 words. The undersigned relies upon the word count generated by Microsoft Word.

/Eagle H. Robinson/
Eagle H. Robinson, Reg. No. 61,361

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned certifies that on May 8, 2025, complete copies of foregoing PATENT OWNER RESPONSE and EX2003-EX2009 were served on Petitioner via email (by consent), at the following email address(s):

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