

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION
Petitioner,

v.

APPLE INC.
Patent Owner.

Case No. IPR2023-00664
U.S. Patent No. 11,106,352

THIRD DECLARATION OF CRAIG S. ROSENBERG, PH.D.

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I. INTRODUCTION

1. I, Craig S. Rosenberg, Ph.D., am making this declaration at the request of Masimo Corporation (“Petitioner”). I understand that this declaration will be submitted as Exhibit 1056 in support of Petitioner’s Reply to Patent Owner’s Response.

2. I am being compensated for my work in this matter at my standard hourly rate for consulting services. My compensation in no way depends on the outcome of this proceeding.

3. The opinions set forth in this declaration are my independent opinions, formed after conducting significant analysis, over several days, related to whether the claims of the ’352 patent would have been obvious in view of the prior art discussed in this declaration.

4. In conducting the analysis and forming the opinions set forth in this declaration, I considered, in addition to my knowledge and expertise in the relevant field, at least the following written materials:

- The written materials identified in my first declaration (EX1003);
- The written materials identified in my second declaration (EX1054);
- Petition (Paper 1);
- Patent Owner’s Response (Paper 15);
- Declaration of Dr. Andrew Cockburn (APPLE-2003);

- Deposition of Dr. Andrew Cockburn (EX1057);
- Excerpts of the parties’ joint claim construction brief in *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.) (EX1058);
- My declaration in support of Masimo’s claim construction in *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.) (EX1059);
- Non-confidential excerpts of my rebuttal expert report in *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.) (EX1060);
- Non-confidential excerpts of my opening expert report in *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.) (EX1061);
- Non-confidential excerpts of the transcript of my deposition in *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.) (EX1062);
- Any other document referenced herein.

5. I understand that Petitioner will cite and rely on significant portions of my testimony and analysis set forth in this declaration in support of its Reply to Patent Owner’s Response. I have not been provided or reviewed the Reply or any drafts of the Reply, and, thus, the Reply or drafts of the Reply have not influenced my testimony or analysis set forth in this declaration.

II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS

6. My experience and qualifications were summarized in my first declaration submitted in this IPR (EX1003). A detailed record of my professional

qualifications, including a list of publications, awards, research grants, and professional activities, is set forth in my curriculum vitae. A list of my previous testimony by deposition and at trial is also included in my curriculum vitae. Exhibit 1004 is a true and correct copy of my curriculum vitae.

III. APPLICABLE LEGAL PRINCIPLES

7. I am not an expert in patent law. Therefore, the attorneys from Knobbe, Martens, Olson & Bear, LLP have provided me with guidance as to the applicable patent law in this matter. My first declaration expresses my understanding of the principles related to patent validity that I have applied to my analysis.

IV. BACKGROUND OF THE '352 PATENT AND THE PRIOR ART

8. The '352 patent claims a method of navigating between different user-interface screens (including wake, home, widget, and control panel screens) using movements directed to a touchscreen input device, such as swipes. Computers have long allowed users to navigate between different graphical-user-interface screens, including the claimed wake, home, widget, and control panel screens. Before the introduction of touchscreens, a different input device, such as a keyboard or mouse, allowed users to navigate between user-interface screens. For example, a keyboard could allow the user to navigate between user-interface screens by (1) pressing a key associated with a particular screen or (2) pressing arrow keys to move left, right, up, or down between screens. A mouse could allow the user to navigate between user-

interface screens by (1) moving the mouse in different directions to scroll between screens or (2) moving the mouse cursor to point to a graphical object (such as an icon or menu item) representing a desired screen and clicking a mouse button to navigate to the desired screen. Designing a particular interface to access each screen was a simple matter of associating inputs (such as key presses, mouse movements, or button clicks) with navigational actions (such as moving from one screen to another).

9. Touchscreens were ubiquitous in tablet computers and smartphones before the '352 patent. Prior-art touchscreens interpreted different touches or gestures—such as a tap on a particular location on the screen or a swipe in a particular direction—as input to the graphical user interface. The intended and obvious purpose of such touchscreen gestures was to replace inputs such as key presses and mouse movements and clicks that are not necessary on touchscreen devices. Thus, the claimed navigational method was an obvious substitution of prior-art touchscreen gestures for keyboard or mouse input to navigate between prior-art user-interface screens. Indeed, as I explained in my first declaration, the prior art discloses the exact navigational paths between the wake, home, and widget screens recited by the independent claims.

10. The prior art does not expressly disclose the exact navigational paths between certain user-interface screens of some dependent claims. However,

implementing a user interface to use a limited set of swipe directions (such as up, down, left, and right) to navigate between a limited set of wake, home, widget, and control panel screens would have been obvious. In my view, as I explained in my first declaration and not rebutted by Apple, the claims of the '352 patent recite obvious uses of prior-art touchscreen gestures to navigate between prior-art user-interface screens.

V. CLAIM CONSTRUCTION

11. I understand that Apple does not necessarily agree with the claim constructions set forth in my first declaration but asserts that no claim construction is necessary. POR at 6. I understand that the Board construed “input is directed to a portion of” the screen to mean the user input is directed to part of the screen (but not necessarily at a predefined location) rather than through another physical input device external to the screen.” Inst. Dec. at 9. I understand that the Board determined that no other claim term requires construction. *Id.* at 9-10.

12. It appears that no dispute turns on claim construction. Accordingly, I do not believe that the Board needs to expressly construe any additional claim terms beyond “input is directed to a portion of.” Nevertheless, I provide with this declaration certain information related to the district court litigation *Apple Inc. v. Masimo Corp. et al.*, C.A. No. 22-1378 (D. Del.), in case the Board considers the information to be relevant to claim construction.

13. Apple has asserted that Masimo infringes the '352 patent in the district court litigation. I understand that the parties have completed claim construction briefing but the court has not construed the claims. I understand that the parties sought construction of just one claim term, “application,” of the '352 patent. EX1058 at 76. I understand that Apple asserted that “application” requires no construction. *Id.* at 76, 80. I understand that Masimo proposed that “application” means “a program that, in response to user commands, performs a task beyond: (a) device control, (b) device status indication, or (c) another task related to the internal function of the device itself. *Id.* at 76; EX1059. In my view, the Board does not need to construe “application” to resolve any dispute in this IPR. In my view, the prior art discloses or makes obvious every claim limitation that recites “applications” under either Masimo’s district court claim construction or Apple’s position that no construction is required. Moreover, I do not believe that any of Apple’s patentability arguments rely on a particular construction of “application.”

14. Neither party requested construction of the “home screen user interface” limitation in the district court litigation. I opined that the Masimo W1 health watch that Apple accuses of infringement has a watch face screen that is a “home screen” but does not satisfy the “home screen user interface” limitation of the '352 patent. EX1060 ¶54. I also opined, in the alternative, under “Apple’s apparent interpretation of the claim,” that prior-art smartwatches called the Asus ZenWatch

and the LG Watch Style satisfy the “home screen user interface” limitation. EX1061 ¶¶156, 293. Apple deposed me with respect to these opinions. *See generally* EX1062.

15. I do not believe that the parties’ district court disputes about whether the Masimo W1 or the smartwatch prior art satisfy the “home screen user interface” limitation are relevant to any dispute in this IPR. The district court disputes relate to whether the “home screen” on a health watch or a smartwatch is limited to the watch face screen. Those disputes are not present in this IPR because I rely on prior art that discloses smartphones, not health watches or smartwatches. In my view, the prior art I rely on in this IPR discloses the “home screen user interface” limitation under any reasonable construction, regardless of whether the Masimo W1 or the smartwatch prior art presented in the district court satisfy the “home screen user interface” limitation. Moreover, I do not believe that any of Apple’s patentability arguments rely on a particular construction of “home screen user interface.”

VI. MOTIVATION TO COMBINE

A. A POSITA would have been motivated to combine Chae and Narendra.

16. Apple argues that combining Chae and Narendra would render Chae unsatisfactory for its intended purpose of using swipe gestures to navigate between user-interface screens associated with multiple SIM cards. POR at 10-13. I disagree for multiple reasons. First, the combination I proposed does not depend on Chae’s

specific teaching of using multiple SIM cards or Narendra's specific teaching of switching between password-protected and non-password-protected screens. I proposed using Chae's and Narendra's general concepts for navigating between user-interface screens using swipe gestures. Those general concepts have obvious uses beyond discriminating between screens with different SIM cards or levels of password protection. Dr. Cockburn admitted that those general concepts were well-known, and that Chae and Narendra teach them. EX1057, 44:11-15, 46:12-48:3, 61:19-62:14. Dr. Cockburn also agreed that a two-reference combination need not incorporate every teaching from both references. *Id.*, 83:9-13, 84:8-14, 85:2-19. A POSITA would have found it obvious to combine Chae's and Narendra's general concepts without requiring fulfillment of Chae's purpose of switching between SIM cards or Narendra's purpose of switching between password-protected and non-password-protected screens. Further, as I explained in my first declaration, in my opinion, it would have been obvious to implement navigation between screens using swipe gestures on either a multi-SIM-card device like Chae or a single-SIM-card device like Narendra because the concepts disclosed in Chae are equally useful for devices with one SIM card or multiple SIM cards.

17. Second, Narendra's teachings are compatible with Chae's multi-SIM-card architecture. Apple does not dispute that Chae and Narendra both teach the well-known concept of navigating between user-interface screens using swipe

gestures. EX1057, 44:11-15, 46:12-48:3, 61:19-62:14. Narendra more specifically teaches navigational concepts such as navigating in two dimensions using left and right swipes to move horizontally and up and down swipes to move vertically. *Id.*, 62:4-14, 75:9-13. A POSITA would have easily implemented the Narendra navigational concepts upon which I rely on a variety of hardware platforms, including Chae’s multi-SIM-card device. Such implementation on Chae’s multi-SIM-card device would improve navigation between screens associated with multiple SIM cards by allowing direct navigation from one screen associated with a SIM card to another screen associated with a different SIM card.

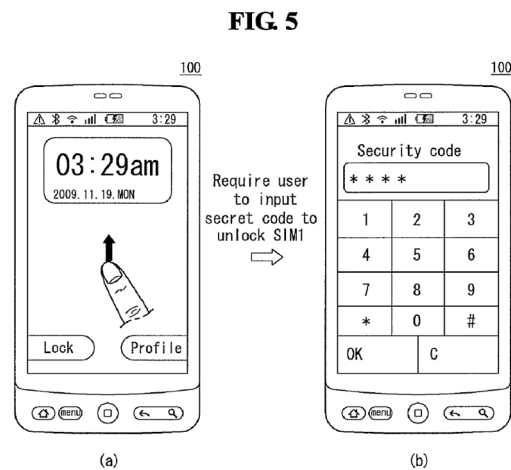
18. Apple argues that Narendra provides no guidance on operating a user interface with multiple SIM cards. POR at 11. But Chae provides that guidance, so Narendra does not need to. EX1057, 82:2-12. No changes to Chae’s multi-SIM-card architecture would have been needed to implement the Narendra navigational concepts that I rely on. Apple points to no technical barrier that would have prevented a POSITA from implementing Narendra’s concepts on Chae’s multi-SIM-card device. In my view, there was no such technical barrier.

19. Apple argues that, if Narendra’s teaching of navigating between password-protected and non-password-protected screens were implemented on Chae’s device, then a user “would not be able to navigate between the home screens of two different SIM cards.” POR at 11. Apple’s argument rests on the premise that

Chae's swipe gestures can only be used to switch between screens associated with multiple SIM cards while Narendra's swipes can only be used to switch between password-protected and non-password-protected screens. However, I have been informed that the required motivation to combine portions of the references to achieve the claimed invention does not require a motivation to incorporate all features that are disclosed in the references. I did not propose implementing Narendra's specific teaching of navigating between password-protected and non-password-protected screens in the combination. Rather, I relied on Narendra's general teaching of navigating among screens in two dimensions using swipe gestures. A POSITA would have understood that Narendra's general navigational system would have worked advantageously on a device that does not switch between password-protected screens and non-password-protected screens. Further, a POSITA would have understood how to implement Narendra's general navigational system on a device that does not switch between password-protected and non-password-protected screens.

20. Apple fails to establish that navigating between password-protected and non-password-protected screens is incompatible with navigating between screens associated with different SIM cards. POR at 11. Apple asserts incompatibility because Chae and Narendra allegedly use the same swipe gesture for different actions. *Id.* For example, Narendra uses an upward swipe to access a password-

protected screen, but Chae uses an upward swipe to access a screen associated with SIM1. *Id.* However, it would have been an obvious compatible combination to use an upward swipe to access a password-protected screen that is also associated with SIM1. Indeed, Chae Figure 5 expressly discloses that exact combination, depicting an upward swipe that allows the user to access a screen associated with SIM1 after inputting a secret code:



Chae also discloses using swipe gestures to access non-password-protected screens associated with a different SIM2: “the second SIM (SIM2) is a SIM that does not require a user to input a secret code to unlock.” EX1005 ¶106.

21. Even if there were some instances where Chae and Narendra use the same swipe direction for truly incompatible actions, Apple discounts the creativity of a POSITA too much by suggesting it would have been impossible for a POSITA to resolve the incompatibility. Pet. at 12; but see EX1057, 13:19-14:11 (GUI design requires creativity). A POSITA would have known that a user interface cannot use

the same directional swipe gesture to navigate from a common origin screen to two different destination screens. Thus, in combining Chae and Narendra, a POSITA would have resolved any trivial incompatibility by associating a unique directional swipe gesture with each destination screen reachable from a common origin screen. EX1057, 88:2-7. For example, in combining a teaching of using an upward swipe to navigate from the wake screen to the home screen with a teaching of using an upward swipe to navigate from the wake screen to the widget screen, a POSITA would have resolved the trivial incompatibility by substituting a downward, leftward, or rightward swipe for one of the upward swipes.

B. Masimo showed both generally and specifically that a POSITA would have been motivated to make each of the proposed combinations.

22. Apple argues the Petition’s general motivation-to-combine section is inadequate. POR at 13-17. I have reviewed the Petition to assess Apple’s criticism of it. I disagree with Apple’s criticism. The Petition does not rely solely on a general motivation. Pet. at 33. It explains that a POSITA would have been motivated generally to combine compatible, additive, and advantageous user-interface features from multiple references into a single smartphone to achieve the additive advantages of the combined features. *Id.* But it also explains that “a POSITA would also have been motivated to combine the prior art for specific reasons set forth in the analysis” in the Petition. *Id.*; *see also id.* at 45, 49, 62, 63, 69-70, 75-77, 79-80, 87-93. In my

view, Apple’s criticism of Masimo’s general motivation improperly ignores the specific motivations set forth in the Petition.

23. Apple argues that Masimo’s Shuttleworth combinations are an example of the Petition’s “problematic and generic explanation” of motivation to combine. POR at 16. I disagree because the Petition explains specifically and in detail that a POSITA would have been motivated to use Shuttleworth’s teaching of using a “unique directional swipe gesture that always navigates to the home screen” while using Narendra’s teaching of “swipe gestures to navigate between a spatial arrangement of numerous non-home screens.” Pet. at 31. The Petition further explains that this approach would provide the advantages of both systems:

A POSITA would have understood that such a combination would provide the advantages of both systems, allowing the user to easily navigate among a large number of screens without memorizing a unique directional swipe gesture for every screen while also easily navigating to the home screen from anywhere using a single unique directional swipe gesture.

Id. at 32. In addition, the Petition explains that “[u]sing a consistent directional swipe gesture to access the home screen ... would have been an obvious substitute for a physical or virtual home button” and “enhances ease of use, efficiency, and convenience.” *Id.* at 74-76. Further, the Petition explains in detail why the motivation to use Shuttleworth’s teaching of a consistent directional swipe gesture

for the home screen is consistent with the motivation to use Narendra’s navigational system for non-home screens. *Id.* at 77-80.

VII. RESPONSE TO APPLE’S ARGUMENTS ABOUT CLAIMS 1 AND 6

24. My first declaration explained why every claim of the ’352 patent would have been obvious in view of the prior art. In this declaration, I have addressed Apple’s Patent Owner Response arguments only. With respect to some claims, Apple did not make a substantive patentability argument unique to that claim, but merely relied on its patentability claims for another claim. For example, Apple does make a substantive patentability argument unique to dependent claim 2, but merely relies on its patentability arguments for claim 1. For each such claim for which Apple does not make a unique substantive patentability argument, but relies on its arguments for another claim, I have addressed only the claim for which Apple made a substantive argument. My response applies equally to, and I have the same opinion for, the other claims for which Apple relies on the substantive argument. Accordingly, the fact that I do not address every claim in this declaration does not mean that I have abandoned any of my opinions.

A. The prior art renders claim 1 obvious.

1. Chae discloses a “computer system that is in communication with a display generation component and one or more input devices.”

25. Apple alleges that the Petition “fails to address how Chae’s touchscreen is ‘in communication with’ a computer system.” POR at 18. I disagree because the

Petition establishes that Chae discloses a touchscreen that displays content and receives user input that causes the computer system to perform actions such as unlocking a SIM card and navigating to a home screen. It is readily apparent from Chae’s disclosure cited in the Petition that the computer system must be in communication with the touchscreen to provide the content that is displayed on the touchscreen and to perform actions in response to receiving user input from the touchscreen. EX1057, 91:3-6, 93:13-18, 94:18-95:9. Indeed, a POSITA would have understood that a touchscreen display and input device could not have functioned without being in communication with the computer system.

2. Chae discloses or renders obvious “the computer system is in a power saving state.”

26. Apple argues that Chae and Android do not expressly state that their devices are in a power-saving state when their displays are off. POR at 19-20. However, it is undisputable that a display consumes less power when it is off. I understand that Dr. Cockburn conceded that a display consumes less power when it is off. EX1057, 95:17-96:3. Dr. Cockburn and Apple speculate that Chae might not save power with its display off because its other components may consume more power. *Id.*; POR at 20. However, nothing in Chae supports that speculation. In my view, a POSITA would have understood Chae as teaching that the computer system uses less power when its display is off than when its display is on.

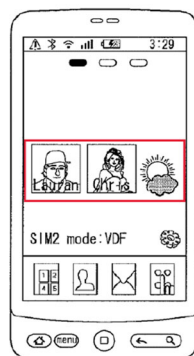
27. In addition, Apple does not address the Petition’s showing, which is supported by my analysis in my first declaration, that:

A POSITA would have understood Chae’s disclosure that the mobile terminal “wakes up” to refer to the typical wake-up process that was well-known and commonly implemented in smartphones. Specifically, a POSITA would have understood that the mobile terminal was in “a power saving state” prior to waking up.

Pet. at 38-39; POR at 19-20. Also, Apple does not address the Petition’s and my citation to a prior-art patent showing that smartphones routinely turned off their displays during periods of inactivity to save power. *Id.*; EX1019, 4:39-65; *but see* EX1057, 18:22-19:4. In view of this routine practice, a POSITA would have understood Chae as disclosing that its device is in a power-saving state when its display is off.

3. Chae discloses or renders obvious the “widget screen user interface” limitation.

28. Apple criticizes my reliance on the icons in the center of Figure 6(b) as the claimed “user interface objects” of the widget screen.



(b)

POR at 22 (citing EX1005, Fig. 6(b)). Specifically, Apple argues that Chae does not disclose that these icons display application content or cause display of applications when selected. POR at 22. I disagree with Apple’s argument. If Apple’s argument were true, then the icons would be images without any function. In my view, a POSITA would not have interpreted Chae so rigidly. Apple’s interpretation would deprive the Figure 6(b) icons of any function. In my opinion, a POSITA would have understood that the Figure 6(b) icons have at least basic application-icon functionality of launching corresponding applications when selected. EX1057, 31:20-32:1.

29. In my view, the claimed “user interface objects” are merely application icons with the added functionality of displaying application content without requiring execution of the application. The Figure 6(b) icons at least suggest that the images and names of “Lauran” and “Chris,” and the graphical depiction of weather conditions, are application content. Specifically, a POSITA would have understood that the images and names could be retrieved from a contact database or other application containing images and names of people and the graphical depiction could represent current weather conditions retrieved from a weather application. That a POSITA may have understood that the Figure 6(b) icons could be static graphics does not negate that the Figure 6(b) icons would have also suggested to a POSITA that the images, names, and graphical depictions are application content.

Moreover, Dr. Cockburn admitted that the capability of implementing the Figure 6(b) icons as the claimed “user interface objects” predates the ’352 patent. EX1057, 100:19-101:8.

30. Further, it would have been obvious to implement Figure 6(b)’s icons to display application content in view of Chae’s disclosure that its customized home screens can include “widgets.” EX1005 ¶100. Apple argues that “the only widgets” Chae describes relate “to the use state of the multiple SIM cards” and do not correspond to applications. POR at 22-23. I disagree for at least two reasons. First, Chae’s use-state widgets are non-limiting examples. Second, each use-state widget corresponds to an application that unlocks a SIM card and displays its customized home screen when the widget is selected. EX1005 ¶¶142, 152-153.

31. Apple does not dispute that prior art “widgets,” such as those disclosed in Hong and Android, display application content. POR at 22-23. Rather, Apple asserts that neither Hong nor Android “teach or suggest displaying the application when the widget is selected.” POR at 23. I disagree. Dr. Cockburn admitted that the application widgets disclosed in Hong are consistent with application icons that also show a preview of contents. EX1057, 119:17-21. Also, a POSITA would have understood that displaying a corresponding application upon selection is merely the basic functionality of any application icon, including a widget.

32. Moreover, both Hong and Android disclose or suggest displaying a corresponding application upon selection of the widget. Hong expressly discloses:

Recently, application widgets have been provided that enable a user to access contents provided in an application without executing the application, such as a clock, a calendar, a memo, search, a map, news, a real-time camera, and the like.

EX1010 ¶4. Hong further discloses that content displayed by a widget “functions as a preview of the information or the function without actually executing the application itself.” *Id.* ¶5. Apple interprets this disclosure to mean that widgets do not even allow execution of the corresponding application. In my view, Apple’s interpretation is implausible, for at least four reasons. First, Apple reads disclosure into Hong that is not there. Hong never says the user cannot execute the application. Second, Hong’s disclosure that a widget displays a “preview” of application content “without actually executing the application itself” suggests that selecting the widget will execute the application to display more content. Third, a POSITA would have understood that the widget applications Hong lists, such as a clock, calendar, map, or news, are the type of applications that can be executed to display more content. Fourth, a POSITA would have read Hong consistently with the basic GUI functionality that selecting an application icon launches an application.

33. With respect to Android, Apple ignores a portion of the video showing a device displaying an email application in response to the user selecting an email

widget. EX1007 at 2:08-2:14. The evidence, including Hong and Android, support my opinion that selecting a widget to display a corresponding application was “well-known functionality.” I understand that neither Apple nor Dr. Cockburn affirmatively deny that selecting a widget to display a corresponding application was well-known functionality. POR at 23-24; APPLE-2003 ¶48.

B. The prior art renders claim 6 obvious.

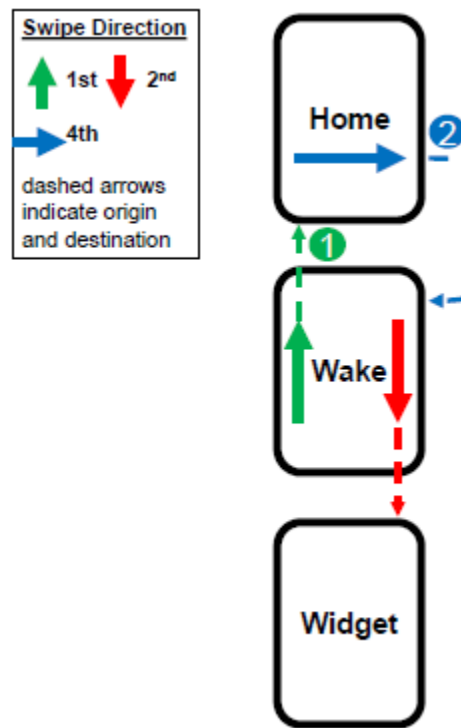
34. With respect to claim 6, Apple argues that it would not have been obvious to add a different directional swipe gesture to allow a user to return to the wake screen. POR at 25. Apple attempts to rebut the Petition’s showing that “choosing a particular navigational path for moving among the user-interface screens and associating a particular directional swipe gesture with each movement is a simple matter of choosing from a finite number of design choices” by asserting that “the universe of possible swipe directions may be limited” but the number of “combinations of these directions and the various possible user interface screens is vast.” POR at 25. Apple cites nothing but a conclusory opinion of Dr. Cockburn for that assertion. *Id.* (citing APPLE-2003 ¶50). No evidence supports Dr. Cockburn’s opinion that the number of combinations of possible swipe directions and user-interface screens is vast. A POSITA would have understood that useable swipe directions are practically limited to the handful that users can easily distinguish and execute, such as swipes along the cardinal directions up, down, left,

and right. Most users are unable to reliably execute more precise swipes, such as a swipe to the right and upward along a 30-degree angle.

35. Further, a POSITA would have recognized that wake, home, widget, and control panel screens were among a small set of common user-interface screens disclosed by the prior art. The Petition discusses Chae's and Android's disclosure of wake, home, and widget screens, and Karunamuni's disclosure of a control panel screen. Pet., 3-5, 8, 10-11, 39-41, 45-63, 83-87. Neither the prior art nor Dr. Cockburn identify a vast number of other screens. Moreover, even if other, less well-known screens existed, a POSITA would have focused on providing easy access to the small set of commonly used screens disclosed by the prior art to enhance ease of use for most users.

36. Therefore, my opinion and the Petition are correct that designing the navigational system of claim 6 based on the basic concepts disclosed by Chae and Narendra would have been a simple matter of choosing from a finite number of design choices.

37. Apple next argues that neither Chae nor Narendra expressly discloses the precise navigational path shown in the following graphic from the Petition:



POR at 25-26 (citing Pet. at 68). Apple misinterprets the graphic as showing that the “fourth direction” in claim 6 must be “*perpendicular* to the first and second directions.” POR at 25-26 (emphasis added). The Petition explains:

[T]he graphics illustrate *general* concepts, not a *precise* navigational map required by the claims. For example, the solid arrows in the graphic above are meant to illustrate that the first, second, and fourth directions are *different* from each other, *not* that they must be a bottom-to-top swipe, a top-to-bottom swipe, and a left-to-right swipe.

Pet. at 68 n.8. I provided the graphic shown above as a conceptual illustration of the scope of claim 6, not to precisely identify the sole navigational map required by claim 6. Indeed, such a precise identification would not be possible because neither claim 6 nor any other claim precisely defines a single navigational map. Rather,

claim 6 and the other claims recite characteristics that encompass multiple navigational maps. In my opinion, in view of Chae’s and Narendra’s disclosure of navigating from one screen to another using directional swipe gestures, it would have been obvious for a POSITA to design one or more navigational maps that embody claim 6.

38. Apple also argues that Chae cannot be modified to yield claim 6 because Chae already associates a pre-defined action for swipes in each of the four cardinal directions and “[a]ny new swipe in a cardinal direction added to Chae would already be in a direction that has a pre-defined action.” POR at 26-27. Apple misinterprets Chae. No “new swipe” incompatible with Chae’s disclosure is needed to yield claim 6. No “new swipe” at all is needed for the navigational paths of claim 1 because Chae discloses swipe gestures navigating from a wake screen to a home screen and from a wake screen to a widget screen. And Claim 6 does not recite any additional navigational path from the wake screen. Rather, it recites navigating *from the home screen* to the wake screen using a swipe direction different from those used to navigate from the wake screen to the home or widget screens. Chae does not associate any pre-defined actions with swipe gestures originating from the home screen. Therefore, adding claim 6’s “new swipe” to return to the wake screen from the home screen would not disturb Chae’s pre-existing swipe gestures.

39. Even for swipes originating from the wake screen, Chae does not associate pre-defined actions for swipes in all four cardinal directions, as Apple alleges. Chae discloses at least four alternative embodiments that use directional swipe gestures to unlock SIMs and display associated customized home screens including icons or widgets. None of the embodiments has pre-defined actions for swipes in all four cardinal directions. EX1057, 133:3-10.

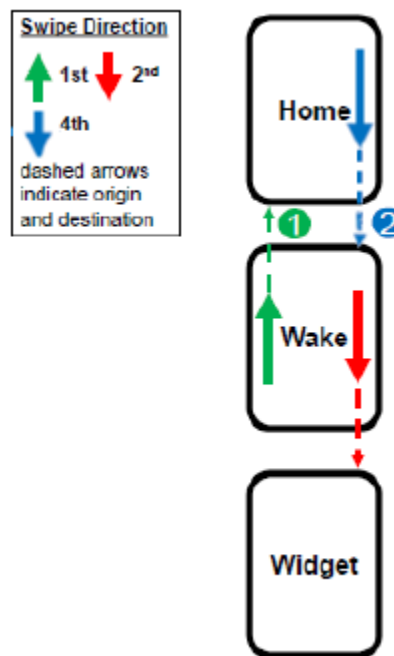
40. In one embodiment, Chae uses a bottom-to-top swipe to unlock SIM1 and display its associated customized home screen, a top-to-bottom swipe to unlock SIM2 and display its associated customized home screen, and a left-to-right swipe to unlock both SIM1 and SIM2 and display a combined customized home screen associated with both SIMs. EX1005 ¶¶103-104, 108-111. In a second embodiment, Chae uses a right-to-left swipe to unlock SIM1 and display its customized home screen and a left-to-right swipe to unlock SIM2 and display its customized home screen. EX1005 ¶¶142, 144, 148, Fig. 19. In third and fourth embodiments, Chae uses a bottom-to-top swipe to unlock SIM1 and display its customized home screen and a top-to-bottom swipe to unlock SIM2 and display its customized home screen. EX1005 ¶¶142, 144, 150-151, Figs. 20-21. In addition, Chae discloses that the manufacturer or user may change the swipe directions associated with unlocking each SIM and displaying its associated customized home screen. EX1005 ¶112.

41. My opinion that claim 6 would have been obvious does not rely on any express disclosure by Chae of a “new swipe” to navigate from the home screen to the wake screen. Rather, it would have been obvious to combine Chae’s and Narendra’s teaching of the concept of navigating between user-interface screens using directional swipe gestures to create a navigational system with the navigational paths recited by claim 6. As the Petition and my first declaration explained, it would have been obvious to allow the user to return to the wake screen to lock the smartphone. Pet. 69-70, EX1003 ¶109.

42. Apple argues, “with the numerous swipe gestures identified in Chae *because of its design to make multiple SIM cards accessible on the same device*, a POSITA would have understood that adding more swipe gestures for additional actions would have made the device in Chae less user friendly.” POR at 27 (emphasis added). To the extent Apple suggests that Chae’s “design to make multiple SIM cards accessible” is somehow incompatible with claim 6’s navigation among wake, home, and widget screens, I disagree. As I previously explained, Chae’s disclosure of using multiple SIM cards is irrelevant to the claims. Chae’s multi-SIM-card architecture does not detract from its disclosure of using directional swipe gestures to navigate among user-interface screens. Chae discloses the concept of using directional swipe gestures to navigate among user-interface screens on a multi-SIM-card device and Narendra discloses the same concept on a single-SIM-

card device. A POSITA would have found it obvious to implement claim 6 on either a multi-SIM-card or a single-SIM-card device.

43. Apple argues that the combination would not yield claim 6 because Narendra teaches returning to a previous screen using a *parallel and opposite* swipe direction, not the *perpendicular* swipe shown in the Petition’s conceptual graphic of claim 6. POR at 27-28. Apple then argues that the following hypothetical combination of Chae and Narendra does not embody claim 6:



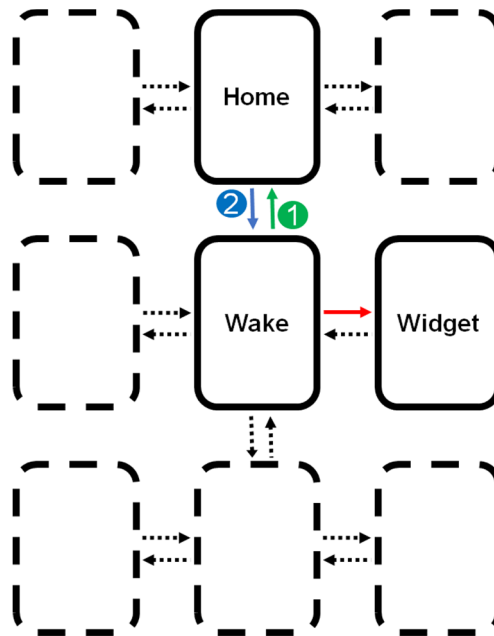
POR at 28-29. However, Apple’s identification of *one* hypothetical combination that does not embody claim 6 does not show that *no* combination embodies claim 6. Apple addresses a strawman hypothetical rather than my proposal to combine Chae and Narendra to embody claim 6 by using “a *different* directional swipe gesture for returning to the wake screen than used to access the home screen or widget screen,

to reduce the likelihood of user confusion of inadvertent access of the wake screen.”

EX1003 ¶109 (emphasis in original). Apple does not refute that a POSITA would have wanted to reduce inadvertent wake-screen access. Instead, Apple argues that a POSITA would have understood it to be “more user friendly” to require the user to press a button, rather than use a different swipe gesture, to return to the wake screen. POR at 29. Apple relies solely upon Dr. Cockburn’s conclusory opinion reaching the same user-friendliness judgment. APPLE-2003 ¶65. However, a POSITA would have also understood that swipe gestures were designed and considered to be acceptable substitutes for inputs such as button or key presses and mouse movements or clicks. In fact, some designs have purposely eliminated buttons in favor of gestures. Further, Dr. Cockburn offers a conclusory and subjective opinion on user-friendliness that he cannot quantify because he did not conduct surveys or user-interface evaluations. EX1057, 151:11-152:18, 153:18-154:9. While recognizing possible differences in users’ subjective opinions, a POSITA would not have been discouraged from using a different swipe gesture to return to a wake screen because some users may find it easier to press a button. Rather, a POSITA would have recognized a different swipe gesture to be one of a few suitable and obvious alternatives for returning to a wake screen. At most, Apple proposes an alternative that some users may prefer but does not negate that a POSITA would have been motivated to combine Chae and Narendra as the Petition proposes.

44. Apple also argues that “it would not have been obvious to a POSITA to navigate between two screens using directions that are not parallel *and opposite* directions.” POR at 30 (emphasis in original). Apple relies on my testimony explaining that Narendra’s system of navigating between two screens using parallel and opposite swipe directions would have been intuitive. *Id.* (citing EX1003 ¶¶150-151). However, Apple does not address my testimony explaining that a POSITA would have been motivated to exclude the wake screen from the normal navigational path and to use a different swipe gesture for returning to the wake screen from the home screen. EX1003 ¶109; Pet. at 69-70. Specifically, because the wake screen is generally less useful than other screens, a POSITA would have wanted to reduce inadvertent wake-screen access. *Id.*

45. In addition, Apple mischaracterizes the Petition’s conceptual graphic of claim 6 as requiring a perpendicular swipe gesture to return to the wake screen from the home screen. POR at 25, 27, 30. Claim 6 does not require such a perpendicular swipe. The Petition’s conceptual graphic is just one example of a finite set of navigational maps that embody claim 6. Another example, shown below, allows a user to return to the wake screen from the home screen using a parallel and opposite swipe gesture.



The graphic above depicts an implementation of Chae’s and Narendra’s fundamental concept of navigating between the wake, home, and widget screens using swipes and the two-dimensional navigational map of Narendra’s Figure 9. In the graphic above, the wake, home, and widget screens are represented as boxes with solid lines to indicate they are screens required by claim 6. The solid green, blue, and red arrows represent the claimed navigational paths from an origin screen to a destination screen in response to a swipe gesture in the direction of the arrow. Boxes and arrows with dashed lines represent optional screens and navigational paths that could be included in a combination of Chae and Narendra but are not required by claim 6. As shown, the navigational map satisfies claim 6 because: (1) a swipe in a first direction navigates from a wake screen to a home screen, (2) a swipe in a second direction navigates from a wake screen to a widget screen, and (3) a swipe in a fourth direction

that is different from the first and second directions navigates from the home screen back to the wake screen.

46. A POSITA would have understood that the navigational map illustrated above would achieve the advantage I identified of allowing a user to easily access commonly used screens from the home screen while reducing inadvertent wake-screen access. Specifically, the user could use left and right swipe gestures to access commonly used screens arranged in the same row as the home screen and use a different, downward gesture to access the less-frequently accessed wake screen.

47. In addition, while not required by claim 6, the navigational map illustrated above allows a user to return to the wake screen from the home screen by swiping in a direction parallel to and opposite of the direction used to navigate from the wake screen to the home screen. Therefore, Apple is incorrect to suggest that a combination of Chae and Narendra necessarily requires the fourth swipe direction for returning to the wake screen to be perpendicular to the first and second swipe directions for navigating from the wake screen to the home and widget screens.

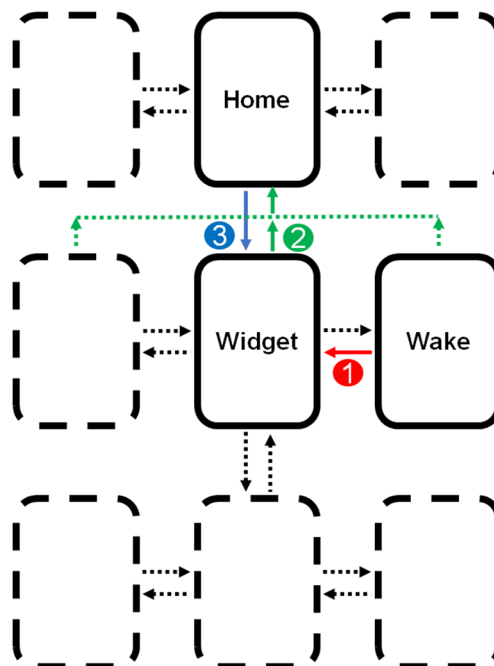
VIII. RESPONSE TO APPLE’S ARGUMENTS ABOUT CLAIMS 4, 5, 12, 13, 20, AND 21

A. The prior art renders claims 4, 12, and 20 obvious.

48. With respect to claims 4, 12, and 20, Apple repeats many of the same arguments it made for claim 6, including: (1) the number of combinations of swipe directions and user-interface screens is vast, (2) Chae already discloses pre-defined

actions for swipes in each of the four cardinal directions, (3) it would not have been obvious to return to a previous screen using a perpendicular, rather than a parallel and opposite, swipe direction, and (4) a hypothetical combination Apple proposes does not embody claim 4. POR at 35-40. I disagree with these arguments for the same reasons discussed above with respect to claim 6.

49. Apple mischaracterizes the Petition's conceptual graphic of claim 4 as requiring a perpendicular swipe gesture to return to the widget screen from the home screen. POR at 36, 38, 40-41. Claim 4 does not require such a perpendicular swipe. EX1057, 139:17-22. The Petition's conceptual graphic is just one example of a finite set of navigational maps that and embody claim 4. Another example, shown below, allows a user to return to the widget screen from the home screen using a parallel and opposite swipe gesture.



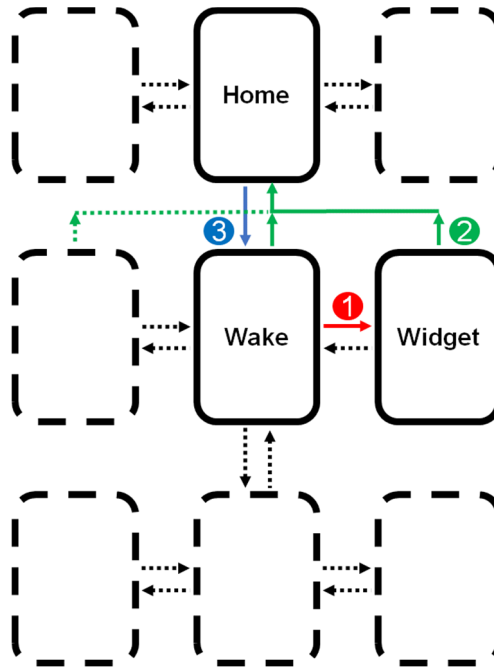
In the above diagram, the green lines and arrows represent Shuttleworth’s teaching of navigating to the home screen using a consistent swipe gesture (*e.g.*, an upward swipe gesture in this example).

50. Apple argues that “a POSITA would have also understood it to be much more user friendly to provide access to the widget screen using a consistent directional swipe gesture ... than to confuse a user with a different direction for returning to the widget screen.” POR at 41. Apple relies on my testimony that “providing the user a consistent mechanism to access the *home screen*, regardless of which screen the user is currently viewing, was a well-known and accepted user-interface design practice for enhancing the efficiency and ease of use of the user interface.” *Id.* at 40-41 (citing EX1003 ¶130) (emphasis added). But Apple ignores my further explanation that for *non-home screens* it was common to provide a context-sensitive navigational system, such as Narendra’s, in which the destination screen to which the user navigates in response to a particular directional swipe gesture depends on the origin screen. EX1003 ¶¶136. I further explained that a POSITA would have been motivated to use a dedicated directional swipe gesture to access the home screen but not non-home screens to achieve both: (1) the efficiency of providing direct access to the *home screen* using a dedicated directional swipe gesture and (2) the scalability of using a context-sensitive navigational system of Narendra for *non-home* screens. *Id.* ¶137.

B. The prior art renders claims 5, 13, and 21 obvious.

51. With respect to claims 5, 13, and 21, Apple repeats many of the same arguments it made for claim 6, including: (1) the number of combinations of swipe directions and user-interface screens is vast, (2) Chae already discloses pre-defined actions for swipes in each of the four cardinal directions, (3) it would not have been obvious to return to a previous screen using a perpendicular, rather than a parallel and opposite, swipe direction, (4) using a button for returning to the wake screen would have been more user friendly and less confusing than using a swipe gesture, and (5) a hypothetical combination Apple proposes does not embody claim 5. POR at 42-48. I disagree with these arguments for the same reasons discussed above with respect to claim 6.

52. Apple mischaracterizes the Petition's conceptual graphic of claim 5 as requiring a perpendicular swipe gesture to return to the wake screen from the home screen. POR at 43, 45, 48. Claim 5 does not require such a perpendicular swipe. The Petition's conceptual graphic is just one example of a finite set of navigational maps that embody claim 5. Another example, shown below, allows a user to return to the wake screen from the home screen using a parallel and opposite swipe gesture.



In the above diagram, the green lines and arrows represent Shuttleworth’s teaching of navigating to the home screen using a consistent swipe gesture (*e.g.*, an upward swipe gesture in this example).

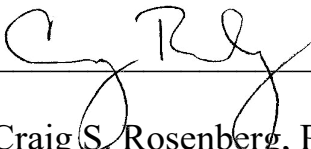
IX. SECONDARY CONSIDERATIONS

53. Apple cites no secondary considerations of non-obviousness.

X. CONCLUSION

54. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: March 13th, 2024

By: 
Craig S. Rosenberg, Ph.D.