

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Michael S. Smith
U.S. Patent No.: 10,671,212 Attorney Docket No. 50095-0169IP1
Issue Date: June 2, 2020
Appl. Serial No.: 16/558,028
Filing Date: August 30, 2019
Title: GESTURE-EQUIPPED TOUCH SCREEN SYSTEM,
METHOD, AND COMPUTER PROGRAM PRODUCT

SUPPLEMENTAL DECLARATION OF DR. ANDREW COCKBURN

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LISTING OF CHALLENGED CLAIMS

Claim 1	
[1.pre]	A non-transitory computer-readable media storing computer instructions that; when executed by at least one processor of a mobile device including a touch screen, a memory, and an actuator coupled to the at least one processor; cause the mobile device to:
[1.a]	display indicia associated with an application, utilizing the touch screen;
[1.b]	when a first duration of a touch being applied to the touch screen is detected as ceasing in connection with the indicia, perform an operation;
[1.c]	when a second duration of the touch, that is different than the first duration of the touch, being applied to the touch screen is detected in connection with the indicia after the first duration is detected without the ceasing, output feedback that is perceptible by touch, utilizing the actuator;
[1.d]	when the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, display at least one menu including a plurality of particular actions;
[1.e]	when a selection touch being applied to the touch screen is detected in connection with at least one of the particular actions of the at least one menu after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, perform the at least one particular action; and
[1.f]	when a slide or swipe gesture being applied to the touch screen is detected after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, change at least one aspect of the display of the at least one menu.

Claim 2	
[2]	The non-transitory computer-readable media of claim 1, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the particular actions are associated with the application.

Claim 9	
[9]	The non-transitory computer-readable media of claim 1, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that, when the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, the at least one menu is displayed along with the indicia or information associated therewith.

Claim 10	
[10]	The non-transitory computer-readable media of claim 9, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the at least one menu is displayed along with the indicia.

Claim 11	
[11]	The non-transitory computer-readable media of claim 9, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the at least one menu is displayed along with the information associated with the indicia.

Claim 13	
[13]	The non-transitory computer-readable media of claim 1, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the first duration and the second duration of the touch are detected as part of the same gesture.

Claim 14	
[14]	The non-transitory computer-readable media of claim 13, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the slide or swipe gesture is capable of being part of the same gesture.

Claim 15	
[15]	The non-transitory computer-readable media of claim 1, further including instructions that, when executed by the at least one processor, cause the mobile device to operate such that the at least one aspect of the display of the at least one menu is changed by ceasing display of the at least one menu.

Claim 16	
[16.pre]	A mobile device, comprising:
[16.a]	a touch screen;
[16.b]	an actuator;
[16.c]	at least one processor;
[16.d]	memory configured to store an application; and

[16.e]	one or more programs, wherein the one or more programs are stored in the memory and configured to be executed by the at least one processor, the one or more programs including instructions to:
[16.f]	display indicia, utilizing the touch screen;
[16.g]	when a first duration of a touch being applied to the touch screen is detected as ceasing in connection with the indicia, perform an operation;
[16.h]	when a second duration of the touch, that is different than the first duration of the touch, being applied to the touch screen is detected in connection with the indicia after the first duration is detected without the ceasing, output feedback that is perceptible by touch, utilizing the actuator;
[16.i]	when the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, display at least one menu including a plurality of particular actions;
[16.j]	when a selection touch being applied to the touch screen is detected in connection with at least one of the particular actions of the at least one menu after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, perform the at least one particular action; and
[16.k]	when a slide or swipe gesture being applied to the touch screen is detected after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, change at least one aspect of the display of the at least one menu.

Claim 56	
[56.pre]	The mobile device of claim 16,

[56.a]	wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is conditionally changed, based on whether a starting location of the slide or swipe gesture is at an edge of touch screen.
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Claim 57	
[57.pre]	The mobile device of claim 16,
[57.a]	wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is conditionally changed, based on whether a starting location of the slide or swipe gesture is at least adjacent an edge of touch screen.

Claim 58	
[58]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is conditionally changed, based on a direction of the slide or swipe gesture.

Claim 59	
[59]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is conditionally changed, based on a distance of the slide or swipe gesture.

Claim 60	
[60]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu includes a location of the at least one menu.

Claim 61	
[61]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu includes a visibility of the at least one menu.

Claim 62	
[62]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu includes a highlighting on the at least one menu.

Claim 63	
[63]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is changed by moving the at least one menu.

Claim 64	
[64]	The mobile device of claim 16, wherein the mobile device is configured such that the at least one aspect of the display of the at least one menu is changed by ceasing display of the at least one menu.

Claim 84	
[84.pre]	A method, comprising:
[84.a]	at a mobile device including a touch screen, an actuator, and memory in communication with at least one processor:
[84.b]	displaying indicia, utilizing the touch screen;
[84.c]	based on a first duration of a touch applied to the touch screen being detected as ceasing in connection with the indicia, performing [sic] an operation;
[84.d]	based on a second duration of the touch, that is different than the first duration of the touch, applied to the touch screen being detected in connection with the indicia after the first duration is detected without the ceasing, outputting feedback that is perceptible by touch, utilizing the actuator;
[84.e]	based on the second duration of the touch applied to the touch screen being detected in connection with the indicia after the first duration of the touch is detected without the ceasing, displaying at least one menu including a plurality of particular actions;
[84.f]	based on a selection touch applied to the touch screen being detected in connection with at least one of the particular actions of the at least one menu after the second duration of the touch is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, performing the at least one particular action; and
[84.g]	based on a slide or swipe gesture applied to the touch screen being detected after the second duration of the touch is detected in connection with the indicia after the first duration of the touch is detected without the ceasing changing at least one aspect of the display of the at least one menu.

I, Andrew Cockburn, PhD, declare as follows:

I. INTRODUCTION

1. I have been retained as a technical expert by counsel on behalf of Apple Inc. (“Apple”/“Petitioner”) in Case No. IPR2024-01089 with respect to U.S. Patent No. 10,671,212 (“the ’212 patent”) (EX1001).

2. I understand that this declaration (“Supplemental Declaration”) will be submitted in support of Petitioner’s Reply to Patent Owner’s Response to the Petition for *inter partes* review of the ’212 patent. This Supplemental Declaration supplements certain portions of my prior declaration in support of the Petition for this IPR Proceeding (EX1003, “Prior Declaration”). In my Prior Declaration, I address many topics, including (but not limited to) my background and qualifications, the level of skill in art, an overview of the ’212 patent, a POSITA’s background knowledge, certain legal standards explained to me by counsel, and a detailed analysis of the prior art against the claim elements of the ’212 patent.

3. I maintain all of my earlier analysis and continue to hold the opinions expressed in my Prior Declaration. This Supplemental Declaration does not replace my Prior Declaration. These declarations are complementary and should be read in tandem. Accordingly, this Supplemental Declaration does not cover every topic addressed in my Prior Declaration.

4. In forming this Supplemental Declaration, I have considered the following: the declaration of Patent Owner's expert Dr. Madisetti (EX2005), the Board's institution decision (Paper 7), my knowledge and experience in this field, including my research and work experience in the field, my experience working with others involved in the field, and the third-party documents cited throughout my analysis. *See* EX1003, ¶¶4–18 (discussing qualifications), ¶¶36–37 (discussing the level of skill for a "POSITA"), and ¶¶38–60 (discussing a POSITA's background knowledge and understanding).

5. Note that my citations to non-patent literature throughout this Supplemental Declaration reference the absolute page number added to the exhibit (as opposed to the original pagination of the document). For patent literature, I've used the column/line numbers or paragraph numbers. Also note that, unless I've indicated otherwise, all emphasis (bold/italics/underline) in any quoted text are ones I have added.

6. Although I cite and quote to selected portions of various references in this Supplemental Declaration, the reader should understand that these citations are representative examples. A POSITA would have viewed each reference in its entirety and in combination with other references. Accordingly, I intend the references identified in this Declaration to be viewed as incorporated in their entireties.

7. I am not, and never have been, an employee of Apple. I received no compensation for this Supplemental Declaration beyond my normal hourly compensation based on my time actually spent preparing this declaration. I will not receive any added compensation based on the outcome of any IPR or other proceeding involving the '212 patent.

II. LEGAL PRINCIPLES

8. In forming my analysis and conclusions expressed in this Declaration, I have applied the legal principles described in the following paragraphs, which were provided to me by counsel for the Petitioner.

A. Person of Ordinary Skill in the Art

9. I understand that the factors considered in determining the ordinary level of skill in a field of art include: the level of education and experience of persons working in the field; the types of problems encountered in the field; the teachings of the prior art regarding solutions to such problems; and the sophistication of the technology at the time of the alleged invention. I understand that a person of ordinary skill in the art ("POSITA") is not a specific real individual, but rather is a hypothetical individual having the qualities reflected by the factors above and knowledge of all relevant prior art references, including the references I cite below.

B. Obviousness

10. I have been informed that a patent claim is invalid as “obvious” in light of one or more prior art references if it would have been obvious to a POSITA at the time of the alleged invention, taking into account (1) the scope and content of the prior art, (2) the differences between the prior art and the claims, (3) the level of ordinary skill in the art, and (4) any so called “secondary considerations” of non-obviousness, which include: (i) “long-felt but unresolved need” for the claimed invention, (ii) commercial success attributable to the claimed invention, (iii) unexpected results of the claimed invention, and (iv) “copying” of the claimed invention by others.

11. While I do not know the exact date that the alleged invention of the ’212 patent was made, I do know that the ’212 patent’s earliest claimed priority date is August 5, 2011. For purposes of my obviousness analysis, I have applied a date of August 5, 2011 as the date of the alleged invention (“Critical Date”), although in many cases the same analysis would hold true even if the date of the alleged invention were earlier or later.¹

¹ Note, however, that I do not concede that the ’212 patent is entitled to its earliest claimed priority date.

12. I have been informed that a claim can be obvious in light of a single prior art reference or multiple prior art references. To be obvious in light of a single prior art reference or multiple prior art references, there must be a reason that would have prompted a POSITA to modify or supplement the single prior art reference, or to combine two or more references, in a manner that provides the elements of the claimed invention. This reason may come from a teaching, suggestion, or motivation to combine, or may come from the reference(s) themselves, the knowledge or “common sense” of a POSITA, or from the nature of the problem to be solved, and this reason may be explicit or implicit from the prior art as a whole. I have been informed that, under the law, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. I also understand it is improper to rely on hindsight in making the obviousness determination.

13. I understand that an obviousness determination also requires that a POSITA would have had a reasonable expectation of success. This concept has been explained to me as relating to the relative likelihood or predictability—from the perspective of a POSITA—of successfully modifying the prior art in a manner that would meet the claimed limitations of the patent being challenged (here the ’212 patent). I understand that the expectation of success need only be “reasonable” and,

thus, does not require the absolute certainty gleaned from physically creating the proposed prior art modification.

C. Claim Interpretation

14. I understand that, for purposes of my analysis in this *inter partes* review proceeding, the terms appearing in the patent claims should be interpreted according to their “ordinary and customary meaning.” In determining the ordinary and customary meaning, I understand that the words of a claim are first given their plain meaning that those words would have had to a person of ordinary skill in the art at the time of the alleged invention. I also understand that the structure of the claims, the specification and file history may be used to better construe a claim. Moreover, I understand that even treatises and dictionaries may be used, albeit under limited circumstances, to determine the meaning attributed by a person of ordinary skill in the art to a claim term.

III. ANALYSIS

15. The analysis and opinions expressed in my Prior Declaration fully explain why [1] each and every feature of the ’212 patent’s challenged claims is in the prior art; and [2] a POSITA would have been motivated to combine the known prior art elements in a manner that reaches the claimed invention. Patent Owner’s expert, Dr. Madisetti, has considered my opinions and offered his own, some of which are inconsistent with my view. I will address certain points of dispute below.

The fact that I have not addressed all of Dr. Madisetti's opinions should not be interpreted as agreement with any of them.

A. Hotelling Shows Pairing Tactile Feedback With a Long Duration Touch Was Known and Obvious (Elements [1.c], [16.h], [84.d])

16. I explained in my Prior Declaration (*see* EX1003, ¶33) that the '212 patent's independent claims 1, 16, and 84 outline two scenarios regarding a user's touch contact with an area of a mobile device touch screen that corresponds to an "indicia" of a user interface element. In a second scenario, where the user's touch is applied for a second duration—which may be longer than the first duration—the device outputs tactile feedback and displays a menu. The tactile feedback (i.e., *feedback that is perceptible by touch*) limitations are recited in Element [1.c], which reads:

when a second duration of the touch, that is different than the first duration of the touch, being applied to the touch screen is detected in connection with the indicia after the first duration is detected without the ceasing, output feedback that is perceptible by touch, utilizing the actuator;

17. My Prior Declaration explains in detail why a POSITA would have understood Hotelling to teach or, alternatively, render obvious the tactile feedback limitations of Element [1.c]. *See* EX1003, ¶¶121–130. Dr. Madisetti argues otherwise. *See* EX2005, ¶¶51–65. In doing so, however, Dr. Madisetti makes multiple factually incorrect statements and draws multiple unsupported inferences

about Hotelling and the understanding of a POSITA in 2011. I identify and explain certain critical errors in Dr. Madisetti's argument below.

1. Hotelling Teaches the Claimed Tactile Feedback Elements

18. As I explained in my Prior Declaration:

Hotelling further discloses *outputting* "tactile feedback" to the user. EX1004 (Hotelling), [0160–0163]. A POSITA would have known that tactile feedback refers to *feedback that is perceptible by touch*. E.g., EX1027, p.1 ("The tactile feedback...is perceived by the grasping hand or tapping finger-tip when the panel is tapped."); *see also generally* Section VI.B.3. Hotelling also discloses that this tactile feedback is provided utilizing the *actuator*, describing use of a "haptics mechanism" that "may include motors, vibrators, electromagnets, etc." to "alert a user that a user input has been made." EX1004 (Hotelling), [0160–0163]; *see also supra* Element [1.pre] (mapping Hotelling's "haptics mechanism" to the claimed *actuator*). For example, Hotelling explains that "tactile...feedback can be used in conjunction with an input event including touch events"—e.g., short and long (*second duration*) touches on "a virtual button." *Id.*; *see also* [0173]. Thus, a POSITA would have understood Hotelling to teach the claimed feature of *when a second duration of the touch being applied to the touch screen is detected in connection with the indicia, output feedback that is perceptible by touch, utilizing the actuator*.

EX1003, ¶125. Dr. Madisetti disagrees because, in his view, Hotelling describes providing tactile feedback only for two "specific purposes—'mak[ing] the virtual UI feel more like a physical UI' or 'work[s] similarly to the [alert] indicators.'" EX2005, ¶53 (quoting EX1004, [0160]–[0163] (original alterations)); *see also generally* ¶¶53–61.

19. A POSITA would not have the narrow view of Hotelling’s disclosure that Dr. Madisetti presents, especially not at the time of the ’212 patent’s earliest claimed priority date in 2011. By that time, as explained in my Prior Declaration, the concept of using tactile feedback in response to user input commands on a touch screen had been known for decades and was already a deeply explored subject in the specific context of touch screen mobile devices. *See* EX1003, ¶¶46–48.

20. One technical paper on this subject from the 2006–2007 timeframe that I reviewed in preparing my Prior Declaration is titled “*Snap-Crackle-Pop: Tactile Feedback for Mobile Touch Screens*.”² Consistent with my understanding of a POSITA’s background knowledge and understanding, this *Snap-Crackle-Pop* paper explains that, “[t]he small screens on mobile devices and the fact that they are used in dynamic mobile contexts mean that visual feedback alone is often insufficient.” EX1028, p.1. Accordingly, “[a]dding tactile feedback to touch screens has the potential to improve usability[.]” *Id.*

21. The authors of the *Snap-Crackle-Pop* paper learned from an earlier work, which I will discuss below, that “tactile feedback is most useful when used to

² Google Scholar has a publication date of “2006/7” for the *Snap-Crackle-Pop* paper (https://scholar.google.com/citations?view_op=view_citation&hl=en&user=itsuBisAAAAJ&citation_for_view=itsuBisAAAAJ:Wp0gIr-vW9MC), which is corroborated by a reference citation in a later technical paper. *See* EX1030, p.13 (noting reference [10] as “T. Kaaresoja, L.M. Brown, and J. Linjama, ‘Snap-Crackle-Pop: Tactile Feedback for Mobile Touch Screens,’ Proc. EuroHaptics ’06, 2006.”

enhance gestural interactions” beyond just “simple tapping.” EX1028, p.1. In one demonstration, the authors showed how gestures used for scrolling on mobile devices can be enhanced by tactile feedback. *Id.* As stated in the excerpt below, the authors used tactile feedback to signal to the user that they have successfully performed a press-and-hold gesture and entered the scrolling mode:

The user can enter the scrolling mode by pressing the stylus onto the centre of the screen and holding it still until tactile feedback is presented. This tactile feedback indicates that the user has entered the scrolling mode. The user can then scroll up and down through the document by moving the stylus up and down, respectively, while holding the stylus on the screen. The scrolling speed is proportional to the distance of the stylus from the initial point (Figure 3). As the user scrolls through the document tactile clicks are presented, with the frequency of occurrence of the clicks being proportional to the scrolling speed. The user can leave the scrolling mode by simply lifting the stylus off the screen.

EX1028, p.2. Similarly, as part of a drag-and-drop demonstration, the authors described that “the user can pick [the icon] up by holding the stylus on it for a while,” and the device responds with one of “[s]even different types of tactile feedback” “[w]hen the user picks up the...icon.” *Id.*

22. As mentioned, the 2006–2007 *Snap-Crackle-Pop* paper was building on an even earlier work. That work was a technical paper from 2003 titled “*Tactile Interfaces for Small Touch Screens*.” EX1060, p.1 The *Tactile Interfaces* paper similarly explains what a POSITA would have known: That “[w]ithout tactile feedback, the user can only rely on audio and visual senses, which have many

disadvantages.” *Id.* For example, “as displays become smaller, GUI widgets become less visible and are easily obstructed by a touching finger, making visual feedback less effective. A pen may help, but it would occupy the second hand, can be easily lost, and is inappropriate for many devices[.]” *Id.*, p.2. The *Tactile Interfaces* paper further explains how tactile feedback can be incorporated into gestures, such that “[e]ach component of the gesture can be augmented with a distinct tactile feeling to provide the user with a feedback at each step of the interaction.” *Id.*, p.3. As shown in the excerpt below, the authors specifically contemplated the idea of providing distinct tactile feedback on touch down, lift off, and during any holds or drags in between.

Therefore, we can classify all tactile feedback during touch screen interaction into five generic types: tactile feedback provided when the user starts, a gesture by *touching* a GUI element (T1), when the user then either *drags* (T2) or *holds* (T3) her pen/finger, and, finally, when the user *lifts* it off either inside (T4) or outside (T5) the GUI widget.

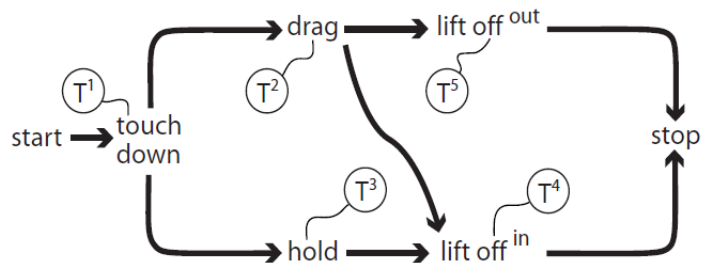


Figure 4: Structure of touch screen gesture

EX1060, p.3.

23. Another contemporaneous document consistent with my understanding of a POSITA’s knowledge in 2011 is US 9,760,241 (EX1036), a patent assigned to

Amazon and filed in 2010. Like the *Snap-Crackle-Pop* and *Tactile Interfaces* papers, this Amazon patent discloses the idea of providing distinct tactile feedback based on the parameters of the touch input—including “in response to detection of a time duration of [the] touch input.” EX1036, 13:44–14:4, Figure 9. As a basic example, “a first time duration T_1 ” results in “a first intensity level or type of localized tactile output,” and “a second, longer duration of time T_2 ” results in “a second different level or type of localized tactile output.” *Id.* Obviously, “[m]ultiple ranges may be provided for detecting multiple different durations of time and providing corresponding different levels or types of tactile output.” *Id.*

24. These three documents (and the others cited in my Prior Declaration) show that a POSITA would have firmly understood [i] that tactile feedback can and should be integrated with touch screen mobile device GUIs; and [ii] that tactile feedback should be associated with different types of touch input gestures and different stages of touch input gestures. This extensive background understanding would have guided a POSITA’s interpretation of Hotelling’s teachings in 2011, which I will discuss further below. Dr. Madisetti’s analysis does not address this aspect of the POSITA’s knowledge, and I believe his failure to consider it led to his misinterpretation of Hotelling.

25. Hotelling summarizes his disclosure as relating to “a multi-functional hand-held device” with “at most only a few physical buttons” and an emphasis on

touch input devices like “touch sensitive screens.” EX1004, Abstract. As discussed, by 2011, a POSITA would have been familiar with the fact that tactile feedback technology had already been integrated with touch screen mobile devices in a variety of different ways. So it would have come as no surprise that, in a section titled “Audio/Tactile Feedback devices,” Hotelling explains how “widely varied” haptics mechanisms can be used to produce different forms of tactile feedback that facilitate multiple user experiences, such as by providing an “indicator[]” or “alert,” “enhanc[ing] the feel of actuating a GUI element such as a...virtual button,” and occurring “simultaneously with onscreen actions.” EX1004, [0160]–[0163]; *see also* [0158] (discussing “indicators that provide user feedback or indicate events,” such as “signals, conditions or status of the device”), Claim 18 (the device “provides audio or tactile feedback to a user based on user inputs”).

26. Consistent with technical papers like *Snap-Crackle-Pop* and *Tactile Interfaces*, a POSITA in 2011 would have interpreted Hotelling to broadly teach that “tactile feedback may be used to alert a user that a user input has been made” and “can be used in conjunction with an input event including touch events.” EX1004, [0163]. This concept in Hotelling is exactly what the authors of those contemporaneous technical papers described—i.e., using tactile feedback at the beginning, end, and intermediate stages of a gesture to signal significant touch inputs and events.

27. Importantly, the POSITA would have already learned from earlier paragraphs in Hotelling that touch events include “long” touches on a virtual button. *See* EX1004, [0097] (“a controller...interprets the touch and thereafter performs an action based on the touch event”), [0135] (discussing gesture recognition), [0145]–[0151] (explaining “duration” and touch events that are “short” or “long”; explaining that “variables” like “duration of the touch” can be used to “form a variety of behaviors and user feedback”), Figures 26, 27A–E. Primed with the context of Hotelling’s earlier disclosure and their background knowledge regarding the advanced state-of-the-art, the POSITA would have understood Hotelling to teach the simple (and previously known) concept of providing tactile feedback to signal a successful “long” duration touch—i.e., ***when a second duration of the touch being applied to the touch screen is detected.***

28. The specific examples of tactile feedback that Dr. Madisetti focuses on from Hotelling, such as enhancing the feel of actuating a GUI element and providing global device alerts, are just that—examples. EX1004, [0161]–[0163]. They do not limit the scope of Hotelling’s disclosure or otherwise confine a POSITA’s understanding of what Hotelling teaches. Again, the simple fact is that Hotelling first teaches a duration-based touch event called a “long” touch gesture, (EX1004, [0145]–[0151]), and later explains that tactile feedback “can be used in conjunction with...touch events” “so that the user knows that they actually implemented an

input,” (EX1004, [0163]). From these related and compatible disclosures, the POSITA would have understood that Hotelling contemplates providing tactile feedback during an ongoing hold. This is how the user is informed that they have successfully executed a “long” touch, and that the device will begin to take the corresponding action. Just like the *Snap-Crackle-Pop* paper’s description of tactile feedback to confirm a press-and-hold touch input for entering a scrolling mode, (EX1028, p.2), the combination of Hotelling and Martyn’s teachings provides tactile feedback to confirm a “long” touch input for calling a contextual menu. This parallel would have been apparent to a POSITA.

29. Accordingly, I disagree with Dr. Madisetti that Hotelling fails to teach tactile feedback “when a time threshold of holding down a button is passed.” EX2005, ¶56. There is no basis for Dr. Madisetti’s assumption that Hotelling’s only goal is to “mimic physical buttons through haptic feedback.” EX2005, ¶57. Instead, a POSITA would have understood that mimicking physical buttons is just one of multiple beneficial uses for tactile feedback taught by Hotelling. Confirming a successful user input—like a “long” touch—is another.

30. This understanding that a POSITA would not have viewed Hotelling’s tactile feedback disclosure as limited to mimicking physical buttons is confirmed by a document that Hotelling lists as a “related” application and incorporates by reference (EX1004, [0002], [0135])—U.S. Patent Application Ser. No. 10/903,964,

which is now published as US 2006/0026521 (EX1010). The '964 patent application is not focused on touch inputs that resemble interactions with physical buttons. Rather, it provides a wide-ranging discussion of processing the kind of touch inputs that enable “advanced” “multipoint gestures” used as commands associated with “enlarging, floating controls, zooming targets, paging, inertia, keyboarding, wheeling, and/or the like.” EX1010, [0010], [0012], [0025]. Notably, the '964 patent application describes “[c]ontinuous gestures...performed in a single stroke” and explains how a gesture, action, and tactile feedback can all occur “concurrently.” EX1010, [0066], [0083]; *see also* [0065] (listing “viewing a menu” as an exemplary action), [0068] (“[T]he system is configured to immediately recognize gestures so that actions associated with gestures can be implemented at the same time as the gesture[.]”). In my opinion, a POSITA would have sought to fully understand Hotelling’s disclosure by considering the documents Hotelling incorporates by reference. Having done so, the POSITA would have appreciated the breadth of Hotelling’s discussion on “Audio/Tactile Feedback Devices.” EX1004, [0160]–[0163]. When Hotelling says tactile feedback “can be used in conjunction with an input event including touch events,” the POSITA would have understood that Hotelling means all of the different kinds of disclosed touch events, from simple short-duration taps, to longer duration holds, complex continuous gestures, and so on. EX1004, [0163].

2. Hotelling Also Renders Obvious the Claimed Tactile Feedback Elements

31. As an alternative basis to address Element [1.c]’s tactile feedback limitations, I explained in my Prior Declaration:

[A] POSITA would have found it obvious to *output feedback that is perceptible by touch*, as Hotelling teaches, in response to *detecting* a “long” (*second*) *duration of the touch*. For example, as I have explained, a POSITA would have recognized that Hotelling’s teaching to apply tactile feedback “in conjunction with...touch events” applies equally to the various types of “touch events” that are described throughout Hotelling, including a “long” touch identified in the table in Figures 27A-27B. EX1004 (Hotelling), [0163], [0149-0150], FIGs. 26, 27A-27B.

* * * *

A POSITA having extensive background knowledge regarding the well-known technique of using tactile feedback in response to a detected touch gesture would have been prompted by all of the design trends and market forces I discussed above to implement a similar solution in the Hotelling-Martyn-Cho combination. As I discussed above, one of the significant events in Hotelling occurs when the user’s “long” touch triggers a context-specific menu. EX1004 (Hotelling), [0151], Figures 27A-27B. The POSITA, appreciating that the user should be notified of this event and given a cue to interact with the menu, would have been motivated to use the widespread solution of responsive tactile feedback.

EX1003, ¶126–130. As should be apparent, my discussion above in Section III.A.1 regarding a POSITA’s knowledge and understanding of the advanced state-of-the-art on tactile feedback in the context of touch screen mobile devices applies equally to this alternative obviousness analysis.

32. As shown below, Dr. Madisetti acknowledges and criticizes the section of Apple's Petition that relies on my alternative obviousness analysis excerpted above. Oddly, though, Dr. Madisetti does not reference my Prior Declaration or any of the multiple corroborating documents that I cited to show the state-of-the-art on tactile feedback for touch screen mobile devices. *See generally* EX2005, ¶¶62–65.

In support of its POSITA-based theory, the Petition cites only Hotelling's disclosure that tactile feedback "can be used in conjunction with . . . touch events." Pet., 28. Without citing to any other references or objective evidence, the Petition essentially asserts that a POSITA would understand this single sentence to mean that any use of tactile feedback in conjunction with any of the touch events described in Hotelling or elsewhere are rendered obvious. Hotelling's teachings are either too general to support such an assertion, or specific examples that teach uses of haptic feedback different from those claimed in the '212 Patent. The Petition's remaining justifications of "a well-known solution to the longstanding problem" and "design trends and market forces" (Pet., 28-29) are also exceedingly general and fail to support the specific combination of logic claimed in the '212 Patent.

EX2005, ¶63.

33. I cannot speculate on why Dr. Madisetti did not address my analysis. Nevertheless, I disagree with his position that providing tactile feedback in response to detecting a "long" touch is at odds with Hotelling's disclosure. Hotelling fully embraces this simple and straightforward concept. And even if Hotelling gave no hint of it, the fact that Hotelling describes other examples of employing tactile feedback would not stop or inhibit a POSITA from pursuing the natural combination of tactile feedback with a "long" touch gesture. As I explained above, the *Snap-*

Crackle-Pop and *Tactile Interfaces* papers show that the POSITA would have known that tactile feedback is advantageous at each stage of a gesture—touch down, lift off, and any holds/drag in between.

34. Lastly, I note that Dr. Madisetti seems to suggest or imply that providing tactile feedback at more than the start and end of a touch contact might somehow “overwhelm or confuse the user.” EX2005, ¶51, ¶56. Dr. Madisetti cites no evidence for this proposition, and it does not reflect the knowledge and understanding of a POSITA. Using tactile feedback to indicate a successful touch input, such as a “long” touch, would not be confusing to the user. The point of providing this kind of feedback is to prevent user confusion. If the device takes an action or switches modes absent feedback, the user may lose track of what is going on, which contradicts well-known principles of user interface design. *See* EX1054, p.1 (“The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.”). As discussed, “[w]ithout tactile feedback, the user can only rely on audio and visual senses, which have many disadvantages.” EX1060, p.1.

B. The Combined Teachings of Hotelling and Martyn Show Calling a Contextual Menu With a Long Duration Touch Was Obvious (Elements [1.d], [16.i], [84.e])

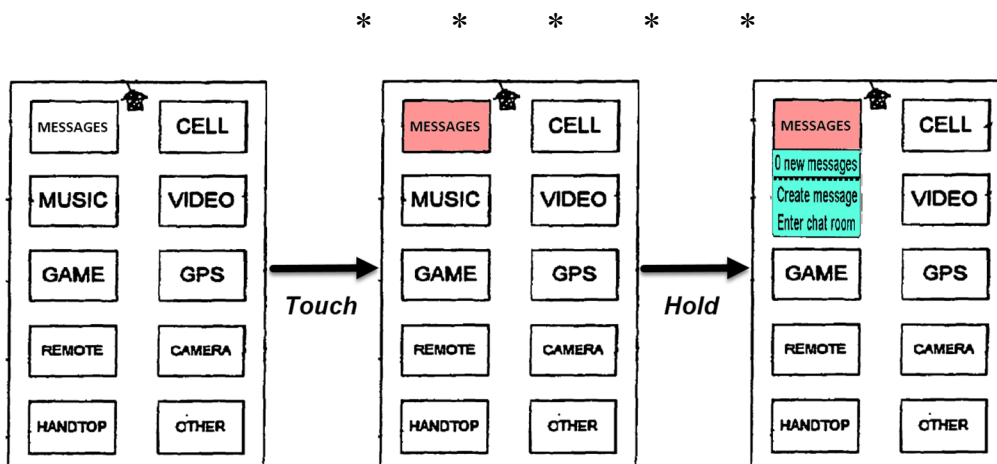
35. As my Prior Declaration explains, in addition to outputting tactile feedback, the second scenario of the ’212 patent’s independent claims 1, 16, and 84

further includes displaying a menu when the user's touch on the "indicia" is applied for a second duration. See EX1003, ¶33. These *menu* limitations are recited in Element [1.d], which reads:

when the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, display at least one menu including a plurality of particular actions;

36. My Prior Declaration relies on the combined teachings of Hotelling and Martyn to address Element [1.d]. First, I explained why and how a POSITA would have combined these references:

Hotelling provides clear and detailed disclosure of a touch screen mobile device that provides a main page GUI of application icons and Martyn provides a complementary teaching to provide a contextual shortcut menu in response to a press-and-hold input on an application icon. The predictable result of this Hotelling-Martyn combination is a mobile device that displays a contextual menu, such as Martyn discloses, in response to a "long" touch gesture applied by the user to one of the icons on Hotelling's main page GUI. Again, Hotelling describes this long-touch gesture as a command for calling a contextual menu like Martyn's.



EX1003, ¶¶75–76; see also ¶¶77–86 (providing multiple motivating reasons).

37. Later in my analysis, I explained why this Hotelling-Martyn combination satisfies Element [1.d]. See EX1003, ¶¶131–133 (cross referencing ¶¶121–124). The mapping is quite simple: The combination features a touch screen mobile device that displays a contextual *menu*, such as Martyn’s App Snapshot, in response to a “long” touch gesture (*second duration of the touch*) applied by the user to one of the icons on Hotelling’s main page GUI. *Id.*

38. Dr. Madisetti’s general position is that “Hotelling and Martyn do not teach this Limitation.” EX2005, ¶66. Notably, though, his analysis does not question whether a POSITA would have been motivated to integrate a contextual menu like the one Martyn teaches with Hotelling’s touch screen mobile device. See generally EX2005, ¶¶66–90. Instead, Dr. Madisetti seems concerned with whether the POSITA would have chosen to invoke such a menu using Hotelling’s “long” touch as a command gesture performed on the virtual button application icons of Hotelling’s main page GUI. *Id.*

39. Although Dr. Madisetti suggests I did not address this issue in my Prior Declaration, (EX2005, ¶67), the opposite is true. For example, noting that Martyn and Hotelling each describe a “main menu” for accessing the functionality of various applications, I pointed out in my Prior Declaration that “[a] POSITA would have found it beneficial and obvious” to apply Martyn’s teachings of an App Snapshot

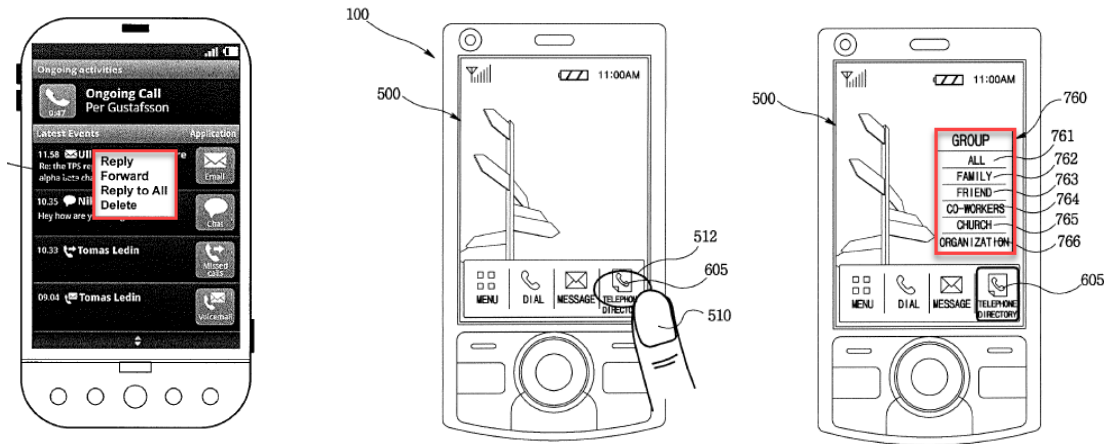
menu to Hotelling's main page GUI. EX1003, ¶79 (citing EX1005, [0015]; EX1004, [0084]–[0085], [0042]). To a POSITA in 2011, it would have been clear that:

integrating Martyn's teachings regarding a contextual menu would predictably improve Hotelling's touch screen mobile device from a usability standpoint. Martyn expressly states that such functionality "yields many advantages in ease and speed of navigation, particularly on small screen devices." EX1005 (Martyn), Abstract. As a result, the Hotelling-Martyn combination would provide a user experience that "is far faster and easier than conventional navigation approaches." *Id.*, [0015]. "Once the summary window [menu] is launched, core data/functionality is displayed and can be accessed in more detail [than] can typically be reached simply by selecting that data/functionality." *Id.* Accordingly, the application of Martyn's menu to Hotelling's touch screen mobile device would have led to a reduction in the number of steps needed to navigate to commonly used operations/actions. *Id.*

EX1003, ¶80; *see also* ¶¶81–82 (citing EX1038–1039). This discussion in my Prior Declaration provides clear reasoning for why a POSITA would have specifically applied Martyn's App Snapshot to the main page GUI of Hotelling. I do not see where Dr. Madisetti has specifically contested my analysis on this point.

40. I also explained in my Prior Declaration why a POSITA would have employed Hotelling's "long" touch gesture to invoke a contextual menu like Martyn's from the main page GUI of Hotelling. For example, in discussing a POSITA's background knowledge, I highlighted multiple examples of touch screen mobile devices where a "long press selection" reveals "additional functionality" in the form of "a pop up control that a user may then interact with"—e.g., "a pop up

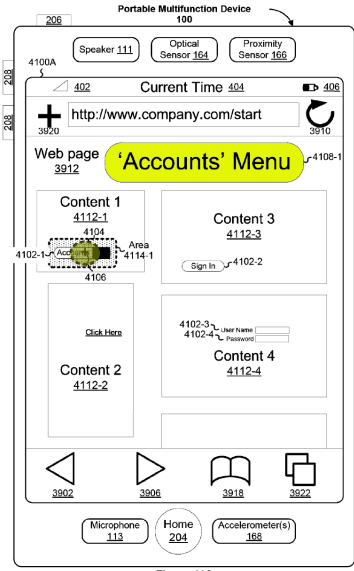
contextual menu that relates to an element in the display.” EX1024, 1:38-65; *see also id.*, 4:25-5:51, 8:66-9:19, Figure 1; EX1025, [0182]–[0183], Figures 12c-12d.

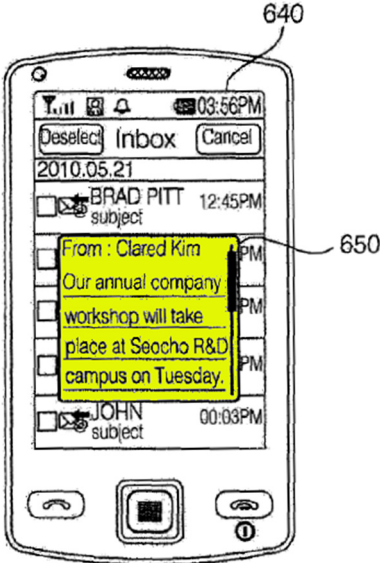


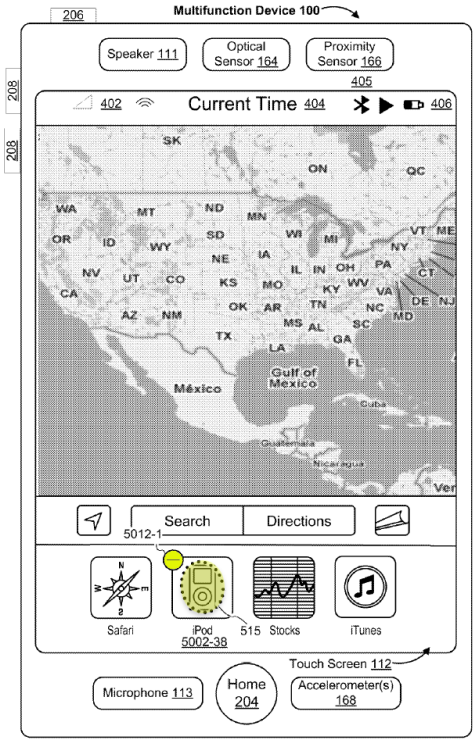
EX1024, Figure 1 (left, annotated); EX1025, Figures 12c-12d (right, annotated).

41. These examples, and several others from documents I considered when preparing my Prior Declaration (see table below), are consistent with my understanding that a POSITA in 2011 would have known that using a “long” touch gesture on virtual buttons and icons to invoke menus and control options was commonplace. Accordingly, when faced with the rudimentary design problem of assigning a touch gesture to invoke Martyn’s App Snapshot on Hotelling’s main page GUI, the POSITA would have pursued the conventional option of a “long” touch on the provided virtual buttons/application icons.

Document	Description
EX1023 US 7,479,949 Inventors: Jobs, <i>et al.</i> Filed: Apr. 11, 2008	72:38–42: <u>Information associated with the chosen user input element is displayed over the displayed content (e.g., Accounts Menu 4108-1, FIG. 41A).</u> In some embodiments, the displayed

Document	Description
	information associated with the chosen user input element comprises a description of the chosen user input element. 72:56–62: In some embodiments, <u>the information associated with the chosen user input element is displayed after the contact is maintained for at least a predetermined time.</u> In some embodiments, the displayed information associated with the chosen user input element is removed if the contact with the touch screen is maintained for greater than a predetermined time.  Figure 41A
EX1045 iPhone User Guide (OS 3.1 Software) Copyright 2009	Page 60: In Photos, choose a video, then <u>touch and hold the video until the Copy command appears.</u> Tap Copy. Go to Mail and create a new message. Tap to place an insertion point where you want the video, then tap the insertion point to display the edit commands and tap Paste. Page 62: <u>Touch and hold the link. The address is displayed, and you can choose to open the link</u> in Safari or copy the link address to the clipboard. Page 63: Save an attached video to your Camera Roll album: <u>Touch and hold the attachment, then tap Save Video.</u> If the

Document	Description
	video hasn't been downloaded yet, tap the download notice first. Page 88: Copy a photo or video: <u>Touch and hold the attachment, then tap Copy</u>. You can paste the photo or video to a[] Mail message or another MMS message.
EX1037 Android Developers User Interface > Creating Menus Archived: 2011	Page 1: Contact Menu A floating list of <u>menu items</u> that appears when the user performs a <u>long-press</u> on a View. Page 4: On Android, a <u>context menu</u> is displayed when the user performs a <u>"long press"</u> (press and hold) on an item.
EX1006 US 2011/0252362 Inventors: Cho, <i>et al.</i> Filed: Apr. 12, 2011	[0130]: Thereafter, if a short or <u>long touch</u> on the predefined email 643 is detected, <u>an information window 650 relevant to the predefined email 643 may be displayed</u>, as shown in FIG. 18(c).  (c)
EX1007 US 2011/0252380 Inventors: Chaudhri	[0303]: In some embodiments, in response to detecting the gesture in the predefined area, <u>when the gesture is a second gesture (e.g., tap-and-hold gesture 513 in FIG. 5G)</u> that is

Document	Description
Filed: Sep. 22, 2010	distinct from the first gesture, on a respective open application icon, <u>the device displays (1024) a close-application icon for closing a corresponding application</u> (e.g., an “X” icon or “-” icon 5002-38 in FIG. 5H on or proximate to the open application icon).  Figure 5H

42. Not only was the idea of using a “long” touch to invoke a contextual menu well known in 2011, but it is also the same kind of duration-based input that Martyn assigns to this functionality. As I explained in my Prior Declaration, “[t]his ‘summary window,’ which Martyn calls an ‘App Snapshot,’ is accessible directly from the device’s main page GUI by executing ‘a press and hold...when an application name (icon) is highlighted.’” EX1003, ¶69 (quoting EX1005, [0015]–

[0018]); *see also* ¶¶73, ¶75, ¶124. Naturally, the POSITA would have taken Martyn’s teaching of a “press and hold” input as a suggestion to use Hotelling’s “long” touch gesture when combining the teachings of these references.

43. Dr. Madisetti attempts to downplay Martyn’s “press and hold” teaching by suggesting that it is limited to only “a physical button.” EX2005, ¶87. But a POSITA would have understood that the scope of Martyn’s disclosure is not limited to non-touch screen devices with only physical buttons. Martyn explicitly states that his disclosure applies to “any kind of mobile device with communications capabilities,” including “smart phones [and] PDAs.” EX1005, [0002]. As my Prior Declaration explains, smartphones and PDAs with touch screens had been known for years prior to the ’212 patent’s earliest claimed priority date of 2011, and even before Martyn in the 2000–2001 timeframe. *See* EX1003, ¶¶36–37. For example, the Newton MessagePad—Apple’s touch screen PDA—was introduced in 1993, even earlier than Martyn. EX1020, p.1.

44. Additionally, even if Martyn were limited to a press-and-hold input applied to a physical button or a virtual representation of a physical button (which I merely assume as a hypothetical), that would not change the fact that a “long” touch gesture on a virtual button/application icon is an obvious analog that a POSITA would have been motivated to employ when integrating the App Snapshot into Hotelling’s main page GUI. As one example, I note that the online Android

Developer's guide in 2011 described an event listener called "onLongClick()" that applied equally to long duration inputs based on touch and physical key presses.

`onLongClick()`

From [View.OnLongClickListener](#). This is called when the user either touches and holds the item (when in touch mode), or focuses upon the item with the navigation-keys or trackball and presses and holds the suitable "enter" key or presses and holds down on the trackball (for one second).

EX1061, p.1.

45. As yet another reason a POSITA would have pursued the combination of Hotelling and Martyn, I explained in my Prior Declaration that:

a POSITA would have been prompted to pursue this combination based on the teachings and motivations evident from Hotelling itself. As I explained above at Section VIII.A, Hotelling sets forth the notion of displaying a "context sensitive menu pop-up" in response to a "long" touch by the user. EX1004 (Hotelling), [0151], Figures 27A-27B. Based on this disclosure of Hotelling, a POSITA would have been prompted to seek out references that provide additional details on how to beneficially implement such a context sensitive menu pop-up in response to a long touch by a user. Therefore, a POSITA would have been compelled to turn to Martyn, which provides such implementation details to achieve various benefits (including those that I mentioned above). A POSITA would have recognized that the details provided by Martyn describing a contextual menu are complementary to Hotelling's disclosure on this subject.

EX1003, ¶83; *see also* ¶¶131–133. In short, Hotelling already discloses the concept of using a "long" touch gesture on a virtual button to invoke a contextual menu, and it would have been exceedingly obvious to use that same gesture on the virtual buttons of Hotelling's main page GUI to invoke a contextual menu.

46. A POSITA would have known that it was a common technique to assign the same input command to achieve substantially similar functionality across different operating systems and applications because following consistent conventions promotes usability. As explained in a well-known article from the mid-2000s called “Ten Usability Heuristics,”

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

EX1054, p.1. Given the prevalent use of long-duration touch gestures to invoke menus and control elements (see above) and Hotelling’s consistent use of this approach, it would not have made sense for the POSITA to deviate from such a convention. Accordingly, the fact that Hotelling discloses a “long” touch gesture on a virtual button in the Figure 27 music player GUI for calling a contextual menu would have prompted the POSITA to use the same gesture for the similar function of invoking Martyn’s App Snapshot in the Figure 18 main page GUI, which likewise includes virtual buttons.

47. To the extent Dr. Madisetti argues that a POSITA would not have literally combined Hotelling’s Figure 27 GUI with the Figure 18 GUI of Hotelling, he is missing the point. *See, e.g.*, EX2005, ¶75. I did not propose such a literal combination of these two GUIs in my Prior Declaration. Instead, as discussed above, my analysis relies on Hotelling’s use of the “long” touch in the Figure 27 music

player GUI as evidence that a POSITA would have followed the same convention when invoking the same functionality—a contextual menu—from the main page GUI of Figure 18. And to be clear, this was just one of multiple reasons that I provided in my Prior Declaration for a why a POSITA would have employed Hotelling’s “long” touch in this predictable and obvious way.

C. The Hotelling-Martyn-Cho Combination Renders Obvious the Claimed Features of Using Slide/Swipe Gestures to Change the Menu (Elements [1.f], [16.k], [84.g])

48. In my Prior Declaration, I explained how the ’212 patent’s independent claims 1, 16, and 84 recite that when the user performs “a slide or swipe gesture” after the second duration, the device “change[s] at least one aspect” of the displayed menu. These *slide or swipe* limitations are recited in Element [1.f], which reads:

when a slide or swipe gesture being applied to the touch screen is detected after the second duration of the touch being applied to the touch screen is detected in connection with the indicia after the first duration of the touch is detected without the ceasing, change at least one aspect of the display of the at least one menu

49. When addressing the *slide or swipe* limitations, my Prior Declaration points to Martyn’s teachings as applied to Hotelling and Cho’s teachings as applied to Hotelling-Martyn. See generally EX1003, ¶¶137–152. Notably, I presented five independent mappings from these references to the ’212 patent’s Element [1.f]. Here, as before, Dr. Madisetti expresses a contrary view but focuses on Apple’s Petition rather than the analysis and evidence that I provided in my Prior Declaration.

See generally EX2005, ¶¶91–105. In any event, I have carefully reviewed Dr. Madisetti’s arguments and find them inconsistent with the knowledge of a POSITA in 2011. I maintain that the entirety of the analysis in my Prior Declaration is correct, and I have been asked by Petitioner Apple’s counsel to specifically address two of Dr. Madisetti’s responses below.

1. Dismissing the Menu, Per Hotelling-Martyn

50. The analysis in my Prior Declaration explains that [i] Martyn teaches the claimed feature of *changing an aspect of its display* via disclosures about dismissing the App Snapshot menu (EX1003, ¶143 (citing EX1005, [0020]–[0022])), and that [ii] Hotelling teaches the use of movement gestures like slides and swipes for GUI navigation maneuvers akin to “back[ing] out [of] a folder,” (EX1003, ¶144 (citing and quoting EX1004, [0151], Figures 27A–27B, [0087], [0148])). Next, the analysis explains how “[a] POSITA would have recognized that backing out of a folder is analogous to Martyn’s menu dismissal and therefore it would have been beneficial and obvious to use the *slide/swipe gesture* described by Hotelling...to dismiss (*change*) the App Snapshot *menu* in the resulting combination.” EX1003, ¶144.

51. Dr. Madisetti disputes my analysis, stating:

While this set of gestures makes sense in the folder context, it does not make sense to swipe left and right to navigate between layers of Martyn’s App Snapshot menu because Martyn’s App Snapshot has no

layers. There is only a single menu and it is displayed in one screen (i.e., screen sliding feedback is not applicable). EX1005, Figures 2-3. The menu is not hierarchical in nature and, therefore, the functionality enabled by the gestures in Figure 27A is simply not relevant to Martyn's App Snapshot.

EX2005, ¶97.

52. But Dr. Madisetti is again taking too narrow a view. First, he omits my analysis of the clear teachings of Martyn, which states that “[t]he App Snapshot may be dismissed” using a scroll function—“If scroll functions (e.g., right scroll) call the App Snapshot the opposite scroll functions removes the snapshot.” EX1005, [0020], [0022]. Therefore, as I stated in my Prior Declaration, a POSITA would have recognized that a such an action (i.e., a leftward scrolling input) would dismiss Martyn's menu. EX1003, ¶143.

53. Second, Dr. Madisetti seems entirely focused on whether the App Snapshot is hierarchical as a standalone element, which is unimportant. After all, a sub-folder is only hierarchical because of its relative position within the greater context of a complete folder structure. Similarly, when integrated with Hotelling's main page GUI, Martyn's App Snapshot is a hierarchical sub-menu. So just like backing out of a sub-folder reintroduces the contents of a main folder to the user, dismissing Martyn's App Snapshot sub-menu reintroduces Hotelling's main page GUI as the user's primary focus. A POSITA would have recognized this analogy,

and the parallel functionality would have prompted the POSITA to employ Hotelling's swipe/slide gesture as a command to dismiss the App Snapshot.

54. Third, and finally, Dr. Madesitti's contention that Martyn's App Snapshot menu "is not hierarchical in nature" (EX1005, [0097]) misconprehends Martyn's teachings. Specifically, Martyn is explicitly directed to providing App Snapshot menus, where each App Snapshot menu is populated with common functions and data for one of several applications in a "main menu." "The present invention offers, in one implementation, a snap-shot view which brings together, in one summary window, a limited list of common functions and commonly accessed stored data which itself can be reached directly from the main menu listing some or all applications." EX1005, [0015]. Martyn, therefore, discloses a main menu of applications, where each item within the main menu may offer an App Snapshot menu, which any POSITA would understand to constitute a hierarchical menu structure.

2. Scrolling the Menu, Per Hotelling-Martyn-Cho

55. As I explained in my Prior Declaration,

Cho also describes several different examples of *changing an aspect of the displayed menu* in response to a *slide/swipe gesture* (referred to as "touch-and-flick" and "touch-and-drag" in Cho). For example, Cho teaches that "[t]he contents of the information window 620 may be scrolled...in response to a flick [(*swipe*)] on the information window," thus *changing* the appearance (*aspect*) of the menu display. EX1006 (Cho), [0127]. In another example, Cho describes interpreting a touch-

and-flick (*swipe*) or touch-and-drag (*slide*) input on the touch screen as a “scroll command.” *Id.*, [0079], *see also* [0091], [0108], [0132].

EX1003, ¶148.

56. Dr. Madisetti responds by arguing that “[a] POSITA would not have been motivated to combine Cho’s particular scrolling with Martyn’s App Snapshot menu because the contents of Martyn’s App Snapshot are all visible when the App Snapshot is first displayed (i.e., there are no list items that must be brought into view via scrolling).” EX2005, ¶100. But Dr. Madisetti’s argument is shortsighted because it only applies to the non-limiting examples shown in Martyn’s Figures 2–3. Dr. Madisetti does not address Martyn’s additional disclosure that “the user...may define the kinds of functionality and/or stored data to be included in the App Snapshot for a given application.” EX1005, [0026].

57. Permitting the user to customize the App Snapshot means the interface must be able to accommodate more than just a handful of list items. While some users may be content with the “limited list of common functions and commonly accessed stored data” that Martyn prefers, (EX1005, [0015]), others may want to include numerous items in their custom App Snapshot.

58. In other words, a POSITA would have understood that when menus like Martyn’s are “customizable,” users will sometimes “add[so] many items” that the menu “becomes too long to fit on the screen,” (EX1022, p.138). When that scenario

occurs, the operating system of the mobile device should “automatically” provide scrolling functionality, so that the user can access items in the customized App Snapshot that are not initially visible. EX1022, p.138 (“Users can also scroll list picker[menu]s by dragging from the middle of the picker past the top or bottom of the picker.”). Even if, as Dr. Madisetti says, Martyn’s App Snapshot window can grow longer to accommodate some additional items, (EX2005, ¶101), the POSITA would have appreciated that the length of the window is limited by the relatively small screen size of a mobile device. The need for scrolling functionality would have, therefore, remained obvious and apparent. With all this background knowledge and understanding, the POSITA would have seen the swipe/slide-to-scroll functionality that Cho describes as a well-known technique that solves a well-known problem of making a long list of items in a menu like Martyn’s App Snapshot readily accessible.

IV. CONCLUSION

I declare that all statements made in this Declaration of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements are 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).

Executed this 29th day of July, 2025.

A handwritten signature in black ink, appearing to read 'Andrew Cockburn', is written above a horizontal line.

Andrew Cockburn