

In the Matter Of:

APPLE INC. vs

SMITH INTERFACE TECHNOLOGIES

LOREN TERVEEN, PH.D

September 11, 2025



UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC., :
Petitioner, : Case No.
v. : IPR2024-01083
SMITH INTERFACE TECHNOLOGIES, LLC, :
Patent Owner.:

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REMOTE STENOGRAPHIC DEPOSITION OF
LOREN TERVEEN, PhD
Thursday, September 11, 2025
9:00 a.m. Central

Job No.: 997815

Pages: 1 - 89

STENOGRAPHICALLY REPORTED BY:

GISELLE MITCHELL-MARGERUM, RPR, CRI, CCR, LCR, ACCR, CSR

CALIFORNIA CSR 14424

2 1 Deposition of LOREN TERVEEN, held 2 remotely, via videoconference at: 3 4 5 VIA VIDEOCONFERENCE 6 7 8 9 Pursuant to agreement, before Giselle 10 Mitchell-Margerum, Registered Professional Reporter, 11 Certified Reporting Instructor, Licensed Court 12 Reporter (TN), Certified Court Reporter (GA), 13 Certified Court Reporter (NJ), Certified Court 14 Reporter (WA), Certified Shorthand Reporter (OR), 15 Certified Shorthand Reporter (CA), Alabama Certified 16 Court Reporter (ACCR), Certified Court Reporter 17 (NM). 18 19 20 21 22 23 24 25	4 1 W I T N E S S I N D E X 2 3 Witness Page 4 5 LOREN TERVEEN (sworn) 5 6 7 Examination by CHAD WALLIS 5 8 9 Examination by DAVID HOLT 83 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
3 1 A P P E A R A N C E S 2 ON BEHALF OF PETITIONER: 3 DAVID HOLT, ESQ. 4 FISH & RICHARDSON 5 1000 Maine Avenue SW, Suite 1000 6 Washington, D.C. 20024 7 202.783.5070 8 9 ON BEHALF OF PATENT OWNER: 10 CHAD WALLIS, ESQ. 11 NORTON ROSE FULBRIGHT US LLP 12 98 San Jacinto Boulevard, Suite 1100 13 Austin, Texas 78701-4255 14 512.474.5201 15 16 17 ALSO PRESENT: 18 MANDY TISDALE, Lexitas Monitor 19 20 21 22 23 24 25	5 1 P R O C E E D I N G S 2 COURT REPORTER: Dr. Terveen, please raise 3 your right hand. 4 Do you swear to tell the truth, the whole 5 truth, and nothing but the truth? 6 THE WITNESS: I do. 7 COURT REPORTER: Okay. We can start. 8 LOREN TERVEEN 9 Having been duly sworn testified as follows: 10 EXAMINATION BY ATTORNEY WALLIS: 11 Q. Good morning, Dr. Terveen. Thank you for 12 being here. Before we start, can you just state 13 your full name for the record, please? 14 A. Loren Gilbert Terveen. 15 Q. And since you have been deposed a few 16 times, I'm not going to waste our time on the ground 17 rules. I just ask two things. One, can we agree to 18 not talk over each other? 19 A. Yes. 20 Q. Okay. 21 So if I ask a question, and you let me 22 finish, and you are finishing an answer, I'll let 23 you finish as well. Is that agreeable? 24 A. Yes. 25 Q. All right. And I'll try and take a break

6 1 about every hour or so. But if you need to take a 2 break before then, just let me know. The only thing 3 I ask is that you finish answering a question before 4 you decide to take a break. 5 Is that agreeable? 6 A. Yes. 7 Q. Okay. And this deposition involves 8 IPR2024-0163, which challenges the validity of U.S. 9 Patent No. 10,642,413. 10 Is that your understanding? 11 A. Yes. 12 Q. Okay. 13 And if I refer to this patent as the 14 '413 Patent, you understand what I'm referring to. 15 Correct? 16 A. Yes. 17 Q. Okay. 18 Is there any reason that you couldn't give 19 confident testimony today? So just medication or 20 anything like that? 21 A. No. 22 Q. Okay. And where are you located today? 23 A. In Minneapolis. 24 Q. Okay. And is anyone in the room with you 25 right now?	8 1 A. I really don't recall right offhand. Some 2 number of hours. 3 Q. All right. And then after you submitted 4 this declaration, did you, I guess, spend any other 5 time with counsel on this proceeding in this case? 6 Either preparing for this deposition, or anything 7 else? 8 A. Yes. I did spend more time with counsel. 9 Q. Okay. 10 And approximately how much time after you 11 submitted your declaration did you spend with 12 counsel? 13 A. Well, on this matter, particularly 14 regarding the '413 Patent, I don't know. Talking, 15 just speaking -- you know, video conferencing -- 16 four or five hours, I suppose. I don't really 17 recall. 18 Q. Okay. 19 And turning to page eight of your 20 declaration -- and I guess before or while you do 21 that, to clarify for the record, when I reference 22 your declaration, I know you have submitted two 23 declarations in this proceeding. 24 So any time I reference a declaration, and 25 I don't explicitly say "supplemental" or "original,"
7 1 A. No. 2 Q. Okay. 3 Do you have any documents or applications 4 open on your computer, or any paper copies in front 5 of you of anything? 6 A. No. 7 Q. All right. And with that, I think we can 8 get started. 9 I'm going to upload an exhibit for you to 10 look at. Okay. And I should have sent that in the 11 chat. It looks like it just went through? 12 A. Yes. 13 Q. Let me know if you can access that. 14 A. Okay. I have it and I've opened it up. 15 Q. Okay. And this is a copy of your 16 supplemental declaration that was submitted in this 17 proceeding? 18 Is that correct? 19 A. Yes. 20 Q. Okay. 21 And, for the record, this is referred to 22 as Exhibit 1023. Correct? 23 A. Yes. 24 Q. And how -- approximately how much time did 25 you spend preparing this declaration?	9 1 can we agree to refer to just "declaration" 2 generally as talking about your supplemental 3 declaration? 4 A. Yes. 5 Q. Okay. Great. So if we turn to page eight 6 of your declaration, it's discussing limitations 7 1.e.ii and 1.e.iii. 8 Is that correct? 9 A. Yes. And looking at it, the corresponding 10 limitations 101.e.ii and 101.e.iii. 11 Q. Okay. And these limitations relate to the 12 claimed limitations that are discussing a first 13 duration of contact. 14 Is that correct? 15 A. Those claimed -- those limitations do 16 refer to a first duration of contact. I don't have 17 the whole set of claims in front of me, so beyond 18 that, you know, I don't recall the details by 19 memory. 20 But yes. I do know they mention the first 21 duration of contact. 22 Q. Okay. 23 And I'll go ahead and add a copy of the 24 '413 Patent into the record so you can view it. 25 A. Okay. Okay. I've got that as well.

10 1 Q. And in your declaration, it looks like you 2 are treating the limitations regarding claim 1.e and 3 claim 101.e similarly. So is it fair to say that if 4 we are just discussing claim one today, that your 5 positions would also apply to the claim 101.e 6 limitations? 7 A. Well, as described right here in my 8 supplemental declaration, yes. My opinions there do 9 apply to both, I guess, 101.e and one -- excuse 10 me -- 1.e and 101.e. 11 Q. Okay. 12 And then referring just to claim one, 13 there is also a limitation which you have identified 14 as 1.e.i. And that is where a first duration of 15 contact is introduced. 16 Is that correct? 17 A. Let's see. I'm confident that's right. 18 But just to dot my I's and cross my T's, I'm just 19 going to verify that. 20 [Witness reviewed document.] 21 A. Yes. That's correct. 22 Q. Okay. 23 And just to be a little bit more generic, 24 there is essentially one limitation that introduces 25 a first duration of contact. And then two	12 1 separate menu item. Correct? 2 A. That's what I described in this paragraph. 3 Q. Okay. 4 And so, these two instances of contact on 5 two menu items, in your opinion, satisfy the 6 limitations 1.e that we were discussing earlier. 7 Correct? 8 A. Well, as I lay out in the subsequent 9 paragraph, starting with paragraph 12, I say that 10 one way that limitations 1.e -- 1.e.i, and 1.e.iii 11 could be satisfied is with what I described as a 12 first instance of contact and a second instance of 13 contact, as I then described in those paragraphs and 14 explained in those paragraphs. 15 Q. Okay. 16 And so, moving on to your paragraph 13, 17 this is referencing the first instance of contact 18 again. Correct? 19 A. Right. As I say in paragraph 13, 20 "Expanding on my above example, the first instance 21 of contact," and then I go on to explain. So yes. 22 I am talking about the example of the first instance 23 of contact in paragraph 13. 24 Q. Okay. 25 And you provide another example that this
11 1 subsequent limitations that have features that are 2 in response to the first duration of contact. 3 Correct? 4 A. That's correct. 5 Q. Okay. 6 And so, looking at paragraph 11 of your 7 declaration, it seems you are citing to the first 8 instance of contact on a first menu item, and then a 9 second instance of contact on a second separate menu 10 item, as meeting the limitations -- the subsequent 11 1.e limitations. 12 Is that correct? 13 A. Could you ask that question again, please? 14 Q. Yeah. So I guess first, let's refer to 15 your paragraph 11. And then this paragraph, you 16 discuss a first instance of contact and a second 17 instance of contact. 18 Is that correct? 19 A. I do mention, as I'm discussing this, that 20 there could be a first instance of contact and a 21 second instance of contact. Yes. 22 Q. Okay. 23 And so, in this paragraph, the first 24 instance of contact is on a first menu item, and 25 then the second instance of contact is on a second	13 1 first instance of contact would be akin to a user 2 tapping on a menu slot in Hinckley's bezel menus. 3 Correct? 4 A. Yes. I explain that this first duration 5 of contact would be, as I wrote, akin to a user 6 tapping on a menu slide in Hinckley's bezel menus. 7 Q. And I'm going to share Exhibit 1006, which 8 is the Hinckley patent, into the chat. 9 A. Okay. I have Hinckley as well. 10 Q. Perfect. And the menu slot that you 11 reference in paragraph 13, does that correspond to 12 the slots 612, 614, 616, 618, and 620, shown in 13 Hinckley's Figure 6? 14 A. Let me just look at that. 15 [Witness reviewed document.] 16 A. I don't recall whether I cited to Figure 6 17 particularly in either my -- either my supplemental 18 or my original declaration. I do recall the figures 19 of Hinckley I cited to for my opinion. 20 So without either refreshing my memory to 21 see if I refer to Figure 6, or looking at it in more 22 detail and reading about it, I'm not going to talk 23 about Figure 6. Because I just don't have a 24 recollection of it right offhand. 25 Q. It looks like at the end of the sentence

14 1 in your paragraph 13, you are making a citation to 2 Exhibit 1004, paragraph 74 and 77. Right? 3 A. Yes. 4 Q. Okay. 5 The Exhibit 1004 in this proceeding is 6 on -- is it safe to assume that this is a 7 typographical error and you meant to reference 8 figure -- or Exhibit 1006, which is Hinckley? 9 A. That seems likely. 10 Q. Okay. 11 And if we go to, I guess paragraph 74 of 12 Hinckley, would that, I guess, confirm that you 13 meant to cite Hinckley instead of Ahn? 14 A. Let me check that. 15 [Witness reviewed document.] 16 A. Yes. I -- that does make it clear that 17 when I cited Exhibit 1004, that was a typo. It 18 should have been Hinckley's Exhibit No. 1006. 19 Q. Continuing with that paragraph 74 of 20 Hinckley that's discussing slots 612, 614, 616, 618, 21 and 620 of Hinckley's Figure 6. Correct? 22 A. Yes. Paragraph 74 does discuss those 23 icons or slots as Hinckley describes them. 24 Q. Okay. 25 And so, is it fair to say that the menu	16 1 question. I think I got it, but could you just 2 repeat it, please? 3 Q. Sure. So I'm just trying to get an 4 understanding of the menu slots and what that 5 actually means when I reference Hinckley. 6 And so, looking at Figure 6, the menu 7 slots that are referred to in this figure are those 8 slots 612 through 620. Correct? 9 A. That is correct. 10 Q. Okay. 11 And then for paragraph 14 in your 12 declaration, where you reference the second instance 13 of contact, you say this second instance of contact 14 would be akin to a user tapping and holding on or 15 near a radial menu icon of a menu slot in Hinckley's 16 bezel menus. Correct? 17 A. Yes. 18 Q. And then I think there is the same issue 19 where you cited to Exhibit 1004, but it should be 20 Exhibit 1006. 21 Does that seem fair? 22 A. I'm sure that's accurate. Yes. 23 Q. And then if we turn to, I guess paragraph 24 106, which you cited there? 25 A. Uh-huh.
15 1 slot that you referenced in paragraph 13 would be 2 one of those slots 612 through 620, shown in 3 Figure 6 of Hinckley? 4 A. Well, if I look at the sentence -- the 5 last sentence in paragraph 12, it reads this would 6 be akin to a user tapping on a menu slot in 7 Hinckley's bezel menus, and Hinckley's device, 8 accessing the functionality associated with a menu 9 icon, where "any type of functionality can be 10 associated with the icons of slots." 11 And so, you know, Hinckley has various 12 examples of bezel menus with bezel slots. And so, 13 Figure 6 is one such example. But there's other 14 examples, again, that have, you know, menu slots -- 15 bezel menus with menu slots. 16 Q. Okay. And so, in this -- I guess this 17 particular example, just to kind of clarify, because 18 I think I understand what you just said. 19 But in this particular example in 20 Figure 6, the icons, you know, 612 through 620, or 21 actually, the slots 612 through 620, would 22 correspond to the menu slot as you use in paragraph 23 13 for this particular bezel menu in Hinckley. 24 Correct? 25 A. I apologize. I sort of lost track of your	17 1 Q. This is talking about a bezel menu 1710. 2 Correct? 3 A. Yes. In this case, paragraph 106 is 4 talking about a bezel menu 1710. That's correct. 5 Q. And that bezel menu is shown in Hinckley's 6 Figure 17. Correct? 7 A. Yes. 8 Q. Okay. 9 And so, looking at Figure 17's example, 10 the radial menu icon that you reference in your 11 paragraph 14 would correspond to the icon 1714 in 12 Hinckley's Figure 17. Correct? 13 A. Well, I'm -- I think that's not quite the 14 way I would put it. Again, if I look at the last 15 sentence in paragraph 14, where I say: 16 "This would be akin to a user tapping and 17 holding on or near a radial menu icon of a menu slot 18 in Hinckley's bezel menus." 19 So that's a general teaching of Hinckley. 20 The fact that a user can tap and hold on or near a 21 radial menu icon of a menu slot. And I gave a 22 particular example from Hinckley, in which I cited 23 to paragraphs 106 to 109. 24 Q. And in the example of Hinckley that you 25 cite, the radial menu icon corresponds to the icon

18 1 1714 that is shown in Figure 17 of Hinckley. 2 Is that correct? 3 A. In, I guess those paragraphs 106 to 109, 4 the radial -- radial menu icon that I referred to in 5 those paragraphs is denoted as radial menu icon 6 1714. 7 Q. And in this example, the menu slots are 8 identified as 1712. Correct? 9 A. In the paragraphs that I cited here, 10 paragraphs 106 to 109 of Hinckley, it is this 11 example of Hinckley uses 1712 to refer to the menu 12 slots. 13 Q. And so, reading your paragraphs 13 and 14, 14 is it fair to say that the first instance of contact 15 would occur somewhere on the icon 1712? Or the slot 16 1712? And that the second instance of contact would 17 occur on the icon 1714? 18 A. Well, I think I may be -- let's see. I 19 think what I say more clearly, or more specifically, 20 is the first duration of contact could appear -- I'm 21 sorry. Again, could I have you repeat that 22 question? I think it got a little complicated for 23 me. 24 Q. Sure. So your paragraphs 13 and 14 25 reference first instance of contact and a second	20 1 explanation that you are providing in paragraph 18? 2 A. No. 3 Q. So let's refer to paragraph 13. It's 4 talking about, in the first sentence, there is -- 5 the first instance of contact, and it's on the first 6 menu item. 7 Is that correct? 8 A. Yes. 9 Q. And we agreed that in the example of 10 Hinckley's Figure 17, that this would be a contact 11 on the slot 1712. Correct? 12 A. Yes. 13 Q. Okay. 14 And then, in paragraph 14, we are talking 15 about a second instance of contact that's on a 16 second menu item. Correct? 17 A. That's what I wrote in paragraph 14. 18 Q. And then the example of Hinckley's 19 Figure 17, that would be a contact on radial menu 20 icon 1714. Correct? 21 A. That's correct. 22 Q. And so, is it fair to say in those two 23 examples, that the icon 1712 would be one menu item 24 and the icon 1714 would be another menu item? 25 A. Well, what I'm -- let me sort of back up
19 1 instance of contact. 2 Is that correct? 3 A. That's correct. Yeah. 4 Q. And is it fair to say the first instance 5 of contact in these paragraphs would occur on the 6 slot 1712, and the second instance of contact would 7 occur on the radial menu icon 1714? 8 A. Well, more specifically, the first 9 instance of contact could appear in this example on 10 menu slot 1712. And the second instance of contact 11 could appear -- could occur, as I wrote in paragraph 12 14, on or near radial menu icon 1714. 13 Q. And in the example that you just 14 discussed, would it be fair to say that the icon 15 1712 is one menu item, and the icon 1714 is another 16 menu item? 17 A. Well, as -- that's not quite right. As I 18 discuss later in my declaration, I mean, starting at 19 paragraph, I guess 18, and with the heading above 20 that, that what I say there is that Hinckley's menu 21 icon, or radial menu icon 1714, is a constituent 22 part of menu slot 1712. And so, that these are not 23 two different icons. 24 Q. So is the explanation that you are 25 providing in paragraphs 13 and 14 different from the	21 1 to explain. So obviously, in this -- in my 2 supplemental declaration, I was replying to 3 Dr. Rosenberg's declaration. 4 And in this section that we've been 5 discussing, which I labeled as "A," and the heading 6 was, Dr. Rosenberg's arguments concern the scope of 7 limitations 1.e.ii, and 1.e.ii3, and the 8 corresponding 101 limitations. So I labeled that 9 and then I was addressing his arguments here. 10 And what we argued, as I say in paragraph 11 nine, is that these 1.e limitations, quote: 12 "Describe logical function or steps to 13 process instances of user input on a touch screen 14 that begins from a common starting point. The start 15 of a 'first duration of contact.'" 16 And then I say I disagree. 17 And so, in that part A of my declaration, 18 I was explaining that the claim limitation did not 19 require -- did not require the first duration of 20 contact to only happen on, as Dr. Rosenberg said, a 21 common starting point. 22 Okay. So that was -- that was the point 23 of it. And then, in the rest of my argument for 24 this -- my response to Dr. Rosenberg, I was positing 25 that if you wanted to consider menu icon -- excuse

22 1 me -- menu slot 1712 and radial menu icon 1714 as 2 separate items, which actually, Dr. Rosenberg did, 3 then -- then they would still satisfy the claim -- 4 the claim limitations 1.e, as we were discussing. 5 So, really, in this -- what we have been 6 discussing, I was replying to one of Dr. Rosenberg's 7 arguments. And then later on, including in 8 paragraph 18, which you referenced, I was referring 9 to a different one of his arguments. 10 So -- so that's why I structured my 11 declaration as I did. It was a response to 12 Dr. Rosenberg's different arguments. 13 Q. And in the response to Dr. Rosenberg's 14 argument in your Section A, that includes these 15 paragraphs 13 and 14 that we have been talking 16 about, is this position the same position that you 17 advanced in your first declaration? 18 A. In paragraphs 13 and 14? 19 Q. And I can put that in the chat if you need 20 that. 21 A. Let me think for a minute and then I -- I 22 may ask to look at that, my original declaration. 23 [Witness reviewed document.] 24 A. I can't recall if I made that argument in 25 my original declaration. As I said, this was a	24 1 Q. Okay. And so, in your paragraphs 13 and 2 14 of your subsequent declaration, that is 3 consistent with the sentence I just read from your 4 original declaration on page 74. 5 Is that right? 6 A. Well, in paragraphs 13 and 14 of my -- of 7 my reply declaration, I was making a different 8 point. 9 So I want to emphasize, as I wrote in my 10 reply declaration, starting in paragraph 18, I -- as 11 I wrote in paragraph 18, I disagree that Hinckley's 12 description of the menu slot 1712 is, quote, 13 "including a radial menu icon 1714 indicates that 14 there are two distinct user interface objects, as 15 Dr. Rosenberg is using that term." 16 So, that paragraph 18 in my declaration is 17 making the exact same point that I made in paragraph 18 107 on page 74 of my original declaration. But as I 19 said in paragraphs 13 and 14, I was simply making a 20 different point in addressing one of Dr. Rosenberg's 21 arguments from his declaration. 22 So I was making a different point. So it 23 wasn't inconsistent. It was simply making a 24 different point. 25 Q. So you are saying that paragraphs 13 and
23 1 reply declaration where I was responding to 2 Dr. Rosenberg's opinions. 3 So, of course, that might have led me to 4 have to make a response to something that I had not 5 covered in my original declaration. I can't recall 6 if this was one thing that I had made explicit in my 7 original declaration or not. 8 ATTORNEY WALLIS: And I will upload your 9 original declaration into the chat. 10 THE WITNESS: Okay. I have it. 11 BY ATTORNEY WALLIS: 12 Q. And if we could go to page 74? 13 A. Okay. 14 Q. And there is the sentence -- it's actually 15 the first sentence of page 74. It says: 16 "From at least these teachings, a POSITA 17 would have understood and found obvious that, in at 18 least one implementation of Hinckley's menus and 19 gestures, tapping the icon 1712 would have triggered 20 one action, while a tap-and-hold gesture on the 21 radial menu icon 1714 portion of icon 1712 would 22 have triggered a different action." 23 Is that correct? 24 A. That is -- that is a correct reading of 25 the sentence. Yes.	25 1 14 of your reply declaration are different than the 2 sentence we were talking about in paragraph 107 of 3 your original declaration? 4 A. Well, they were making a different point. 5 Not that there is -- in paragraph 107 of my original 6 declaration, I quote Hinckley. And as part of that 7 quote, I refer to the radial menu icon 17 portion of 8 icon 1712, which is -- I agree with that. I'm 9 consistent with that between my original and my 10 reply declaration. 11 In paragraphs 13 and 14 of my reply 12 declaration, I was replying to an opinion of 13 Dr. Rosenberg. And in this case where he -- I was 14 making the point that limitations -- the 1.e 15 limitations do not require instances of user input 16 on a touch screen that, quote, "begin from a common 17 starting point." 18 And in order to do that, I talked about 19 the meaning of the claim limitations, how they were 20 written, and then I gave an example from Hinckley, 21 where Dr. Rosenberg sort of referred to the -- how 22 should I put it -- the menu slot and the radial menu 23 icon as being different things. 24 No. I don't agree with that, as I went on 25 to write in -- starting in paragraph 18, but under

26 1 his interpretation, I'm saying that the claim 2 limitations 1.e would still be met, because the 3 first contact does not have to begin from a common 4 starting point. 5 So, yeah. I simply was responding to his 6 argument in paragraphs 13 and 14, and in Part A of 7 my supplemental declaration. Because that was a new 8 argument that I had to respond to. 9 So it was a new thing I had to do in my 10 reply declaration, that I had not had to do in my 11 original declaration. 12 Q. So in paragraph 13 of your supplemental 13 declaration, and paragraph 107 of your original 14 declaration, the first instance of contact is 15 tapping the icon 1712 for both of those positions. 16 Correct? 17 A. Yes. For example. That was the example I 18 gave from Hinckley. A tap on the menu -- on the 19 icon or slot 1712. 20 Q. And so, for paragraph 14 of your 21 supplemental declaration, and paragraph 107 of your 22 original declaration, the second instance of contact 23 is tapping and holding on radial menu icon 1714. 24 Correct? 25 A. It's tapping or holding on or near radial	28 1 '413 Patent. Correct? 2 A. Yes. 3 Q. Okay. And in this example, there's five 4 menu items. Correct? 5 A. Yes. 6 Q. Okay. 7 And so, in this example, there is a first 8 menu item that would be associated with the first 9 operation, and then a second menu item that would be 10 associated with a second operation. 11 Is that correct? 12 A. Well, each -- let's see. 13 [Witness reviewed document.] 14 A. Well, if you go through -- I need to give 15 another detail. Because like if you go through the 16 annotated flowcharts, first, the touch location was 17 determined, and then the properties of the gesture 18 had to be determined. 19 So was it a short gesture -- short 20 duration gesture or a longer duration gesture? And 21 then based on those things, both of those things -- 22 then an operation is determined. 23 So both the -- where the item occurred in 24 this case, and then the property -- excuse me -- 25 where the gesture occurred and then the properties
27 1 menu icon 1714. And again, as I write it in that 2 last paragraph, the -- or, excuse me, in the last 3 sentence of paragraph 14, this would be akin to a 4 user tapping or holding on or near a radial menu 5 icon of a menu slot in Hinckley's bezel menus. 6 So, this would be -- so, for example, 7 referring to Figure 17, and using the numbers from 8 that, it would be akin to a user tapping and holding 9 on or near a radial menu icon 1714 of a menu slot 10 1712 in Hinckley's bezel menu. 11 So, that is essentially what I wrote in 12 paragraph 107 of page 74 of my original declaration. 13 Q. Does page 74 of your original declaration 14 say "or near?" 15 A. Let's see. That does not say that. I 16 know that I say -- I give the full quote from 17 Hinckley, other places in my original declaration 18 and in my reply declaration, which does include the 19 language of a tap and hold on or near the radial 20 icon 1714. 21 Q. So, it's referring now to your paragraph 22 16 of your reply declaration. You have provided a 23 figure that's an annotated -- 24 A. Yes. 25 Q. -- version of Figure 18 of the	29 1 of the gesture, particularly its duration, are used 2 to determine what operation is done by the system. 3 Q. And so, for each of these five menu items 4 that the corresponding touch location, as you said, 5 would be different for each of them? 6 Is that correct? 7 A. Well, I'm -- let's see. I think what -- 8 the best way to answer that question is just to go 9 back to the previous paragraph, paragraph 15, in my 10 declaration, and it's a sentence in the middle of 11 that paragraph, where I write: 12 "While the process of Figure 18 includes 13 determining attributes of the touched event -- 14 'touch event,' (for example, duration or location), 15 the process of Figure 18 does not require that 16 multiple instances of contact have, quote, a 'common 17 starting point.'" 18 And so, that's what I'm illustrating in my 19 annotated version of Figure 18, which is included in 20 paragraph 16. And so, I'm showing a first item and 21 a second item that, in this example, do not have to 22 have a common starting point on the screen. 23 Q. And in this example that you have 24 illustrated in paragraph 16 of your supplemental 25 declaration, you highlight a first item and a second

30 1 item. Correct? 2 A. That's correct. 3 Q. And these -- I guess the first item would 4 be associated with one operation and the second item 5 would be associated with another separate operation. 6 Is that correct? 7 A. Well, it isn't simply that the items are 8 associated with a particular operation. It's a 9 particular -- it's a particular type of gesture on a 10 particular item. 11 And so, as I just -- as I showed in this 12 annotated figure, simply with reference to the flow 13 chart in Figure 18 of the '413 Patent, what I 14 illustrated is a short duration contact on a first 15 item leads to one operation, and a long duration 16 contact on a second item leads to another operation. 17 And this is consistent with the language 18 of the 1.e limitations that we have been discussing. 19 Q. And so, I guess for the example on the 20 left, the first operation would be associated with a 21 tap on the first item. 22 Is that fair? 23 A. That is the example I gave here. So if 24 you look sort of at what I labeled as, I used the 25 numbering two in my annotations, I say -- and this	32 1 A. Well, I'm not exactly sure what you are 2 asking. So I want to go back to the opinion that 3 I'm explaining here in this part of my declaration. 4 My reply declaration. Namely, the part that I gave 5 the label "A" to. 6 And I guess, just to be clear for the 7 record, it's -- yeah; V(a), or Roman numeral V(a). 8 What I'm saying is that when you look at the 9 language of claim one, particularly the parts E that 10 we have talked about, and I'm actually just going to 11 look at the language so I am not being fuzzy here. 12 So claim one talks about a first duration 13 of contact on at least one of the -- one or more 14 first menu items. Okay. 15 So what I've been talking about -- excuse 16 me. So that's 1.e.i. And then, 1.e.ii talks about 17 the first duration of contact not surpassing a 18 threshold. And 1.e.iii talks about the first 19 duration of contact surpassing the threshold. 20 And so, what Dr. Rosenberg said, 1.e.ii 21 and 1.e.iii required the contact in both cases to be 22 on a common starting point. And that is what I 23 disagreed, and what I was talking about. Okay? 24 So it's not required that they -- that 25 both of those limitations are satisfied by a contact
31 1 is referring to a gesture on the first item -- I say 2 the duration is short so the gesture is a tap. 3 So that's what I said in this example. 4 Q. And so, in this example, if the user 5 contacts the first item and continues to hold, would 6 the same first operation be performed? 7 A. Well, that's -- no. That would be 8 inconsistent with this example. Because this 9 example is literally illustrating two things. One, 10 going -- and both of them know directly from the 1.e 11 claim limitations. Namely, that as I write, that -- 12 trying to think of the best language I have here. 13 That limitations 1.e.ii and 1.e.iii could 14 be satisfied with contacts on different items. 15 Okay? And then, 1.e.ii requires a duration of 16 contact that's less than a threshold and 1.e.iii 17 requires a duration of contact that's greater than a 18 threshold. 19 So literally, that is what I'm 20 illustrating. So that's what this example does. 21 Q. So I think I understand what you are 22 saying, but just to clarify, you are testifying that 23 a tap on the first item would perform a first 24 operation, but if you hold the first item, then that 25 first operation would not be performed. Correct?	33 1 on the same starting point, the same item. But they 2 could be satisfied by a contact on the same items. 3 Just not required that they -- the contact be on the 4 same item. 5 And then, of course, when you read again, 6 on to 1.e.ii and 1.e.iii, you see that in the first 7 case, the duration of the contact does not surpass a 8 threshold. And in the second case, the duration of 9 the contact does surpass a threshold. 10 So that's what I was explaining in this 11 part of my reply declaration, including with the 12 examples I gave, and including with my annotated 13 version of Figure 18 from the patent. 14 Q. Okay. 15 ATTORNEY WALLIS: I think we have been 16 going for about an hour. Do you want to take five 17 minutes and meet back here at 10:05 Central Time? 18 THE WITNESS: Sure. Sounds good. 19 (Short break.) 20 BY ATTORNEY WALLIS: 21 Q. Welcome back, Dr. Terveen. Did you talk 22 to anyone while we were on break? 23 A. No. 24 Q. I'm going to have you look at the Hinckley 25 reference that I had previously put in the chat. If

34 1 you could pull that up? 2 A. Okay. Yup. I've got it. 3 Q. In this reference, Hinckley discloses the 4 use of bezel gestures to allow for expanded 5 functionality. 6 Is that correct? 7 A. It discloses it describes the use of bezel 8 gestures. Certainly, I don't recall right offhand 9 if it used the term, "expanded functionality," but 10 it does definitely describe the use of bezel -- 11 bezel menu gestures. Yes. 12 Q. And could you just describe what a bezel 13 gesture is for me? 14 A. Yeah. I'm going to -- I think to be 15 careful, I'm going to look at my declaration and see 16 how I described it there, since that's obviously 17 what -- you know, what's important to my opinion. 18 So, I mean, a bezel gesture, at the most 19 basic level, is a touch gesture like a -- using your 20 finger, or stylus, or pen, or whatever, that begins 21 at the bezel, and then moves -- it can move 22 inward -- and then it moves from the bezel on to the 23 rest of the screen. 24 Q. Okay. And so, for these bezel gestures, 25 the -- I guess the device would be receiving an	36 1 Q. And it describes tapping as a bezel input. 2 Correct? 3 A. Yes. 4 Q. And it also describes holding as an input. 5 Correct? 6 A. Let's see. I think so. I'm just looking 7 at them. 8 [Witness reviewed document.] 9 A. Yes. 10 Q. And Hinckley teaches that these inputs 11 could be received on any side of the bezel and be 12 associated with a functionality that is, I guess 13 mapped to a specific side? 14 Is that correct? 15 A. I mean, Hinckley talks about input 16 received on the right side of the bezel, and input 17 received on the left side of the bezel, and so on. 18 So, yeah. Hinckley contemplates that the input 19 could come from different sides. 20 Q. And Hinckley also contemplates that one of 21 those sides or regions could be mapped to no 22 functionality? 23 Is that correct? 24 A. Are you referring to something 25 specifically in figure -- in paragraph 61?
35 1 input on the bezel of the device? 2 Is that fair? 3 A. Well, I think that I want to be careful, 4 because I want to check my recollection of exactly 5 how Hinckley describes them. So I am going to take 6 a look at Hinckley to refresh my memory. 7 Q. And I guess more specifically, if we look 8 at paragraphs -- looks like starting at 59, "Use of 9 bezel as input mechanism?" And it continues? 10 A. Yes. I see that. 11 Q. And so, I guess at least in Hinckley's 12 paragraph 60, it's saying the bezel of a device can 13 be utilized as an input mechanism, and you would 14 understand that to be consistent with describing 15 these bezel gestures? 16 Is that fair? 17 A. As that paragraph says, in one or more 18 embodiments, the bezel of a device can be utilized 19 as an input mechanism. 20 Q. And so, in paragraph 61, it discloses 21 specific examples of such input that is received on 22 the bezel. 23 Is that correct? 24 A. Paragraph 61 includes examples of inputs 25 on the bezel.	37 1 Q. Sure. So it seemed like you were reading, 2 I guess the sentence, "Input received on the left 3 side of the bezel and then right side of the bezel," 4 and so on. And then that next sentence starts with 5 "furthermore." 6 It seems to be saying that it might be 7 that one of the sides has been mapped or associated 8 with no functionality at all. Is my understanding 9 correct? 10 A. Well, yeah. That sentence that I think -- 11 the sentence that I believe you are referring to 12 reads: 13 "Furthermore, input received in different 14 regions of a bezel side might be mapped to different 15 functionality or to no functionality at all." 16 And then it goes on. But that does 17 suggest that some -- or Hinckley there is describing 18 that inputs in some regions might not be mapped -- 19 might be mapped to no functionality at all. 20 Q. And then following, the next sentence 21 says: 22 "Some bezel edges may be left 23 unassigned or may be insensitive to touch-and-hold, 24 so that inadvertent operations will not be 25 triggered."

38 1 Is that correct? 2 A. Yeah. Hinckley describes that as one 3 possibility. That, you know, within the scope of 4 what Hinckley is describing, some bezel edges may be 5 left unassigned or may be insensitive to touch or 6 hold. 7 So that's one option that Hinckley would 8 describe -- that Hinckley does describe. 9 Q. So, I guess it's saying that some regions 10 or sides could just not be assigned or could be 11 insensitive to certain gestures, and that would help 12 prevent user errors or inadvertent operations? 13 A. That's what that sentence says. Some 14 bezel edges may be left unassigned or may be 15 insensitive to touch or hold, so that inadvertent 16 operations will not be triggered. 17 So what Hinckley is saying there is that a 18 designer -- being guided by Hinckley's teaching, in 19 certain context, you might decide not to assign, or 20 to make particular parts of a bezel in this case 21 insensitive to any gestures, to particular gestures. 22 Q. And so, one such functionality associated 23 with the bezel gestures would be the -- I guess the 24 deployment of a bezel menu? 25 Is that correct?	40 1 gestures to reveal the bezel menu 610, in this case, 2 the user can lift their finger, whereupon the bezel 3 menu can remain open for a configurable interval (or 4 indefinitely)." 5 So in this case, they have used a gesture 6 to open the menu, and then the user can tap on a 7 desired menu item associated with one of the icons 8 or slots, 612, et cetera. 9 Q. And that tap on the desired menu icon 10 accesses the functionality associated with that 11 particular icon. And then at least in the example 12 in paragraph 77, that would be creating an object on 13 the canvas. 14 Is that fair? 15 A. What paragraph 77 says: 16 "For example, tapping on a particular icon 17 or slot may cause an object to be created on the 18 canvas." 19 So, in this example, a tap on a particular 20 icon or slot may cause an object to be created on 21 the canvas. 22 Q. And then it says in the following 23 sentence, that: 24 "This tap will cause the object to be 25 created or appear in a default location on the
39 1 A. A bezel gesture can be used to bring up or 2 deploy a bezel menu. That's correct. 3 Q. And so, I know you had previously -- or we 4 had previously discussed the paragraph 74, which was 5 referencing Figure 6 of Hinckley. 6 A. Yes. 7 Q. And Figure 6 shows an example of bezel 8 menu. Correct? 9 A. Let's see. Yes. 10 Q. And so, this bezel menu can be operated in 11 both a novice mode and an expert mode? Is that 12 correct? 13 A. Yes. Hinckley describes both novice and 14 expert modes for its bezel menus. 15 Q. And so, in the novice mode, the user -- 16 referencing Figure 6, I guess, the user can tap one 17 of the icons, you know, 612 through 620, to create 18 an object. 19 Is that correct? 20 A. Are you sort of referring to a particular 21 part of Hinckley here? 22 Q. Yeah. So I'm looking at paragraph 77. 23 A. Okay. Yes. That's -- paragraph 77 24 describes that -- describes that: 25 "In the novice mode, after the user	41 1 canvas." 2 Right? 3 A. Well, to be clear about all the caveats or 4 the context, it says: 5 "In at least some embodiments in the 6 novice mode, objects that are accessed from the 7 bezel menu appear in default locations on the 8 canvas." 9 Q. Hinckley also describes creating an object 10 via the expert mode, following that example that is 11 used to create an object in the novice mode. 12 Is that correct? 13 A. Hinckley -- yes. Hinckley also describes 14 the use of the expert mode in the subsequent 15 paragraphs as well. 16 Q. And then paragraph 78, it's using the 17 expert mode to perform the same function. Is that 18 right? 19 A. Let's see. Well, to be clear, the 20 function that is described in 78, in the first 21 sentence, it says: 22 "In the expert mode, once the user is 23 familiar with the location of commonly used items 24 accessible from the bezel menu, the user can perform 25 a continuous finger-drag that crosses through the

42 1 slot or icon and onto the canvas to create and drag 2 an associated object (or tool, or interface mode) to 3 a specific desired position or path, in a single 4 transaction." 5 So, this -- in the expert mode, again, 6 they are describing the creation of an object, as 7 was described in the novice mode example as well. 8 Q. And so, both the novice and expert mode 9 result in the creation of the object, but as 10 described in paragraph 78, I guess the expert 11 mode -- I guess provides additional functionality 12 that enables, I guess, the positioning or placement 13 of the object in the same gesture? 14 Is that right? 15 A. I think -- yeah. I think the way to put 16 it is Hinckley is teaching different possibilities. 17 And the part of paragraph 78 that I just read 18 describes the possibility of creating and then 19 dragging the object to position it. 20 While in the description of the novice 21 mode, Hinckley says that at least in some 22 embodiments in the novice mode, objects that are 23 accessed from the bezel menu appear in default 24 locations on the canvas. 25 So, you know, Hinckley is talking about	44 1 Figure 7. 2 Q. And then this example in Figure 7, the 3 menu would already be open once you -- when you are 4 performing this drag or this gesture, sorry. 5 Correct? 6 A. Are you -- are you asking -- let's see, 7 referring to Figure 7 -- are you asking whether the 8 menu 610 would have already been exposed? 9 Q. Yes. 10 A. No. I don't think that's the case, 11 necessarily. I think, you know, I think what 12 Hinckley is teaching that as the -- that the -- I 13 think Hinckley's teachings include the case, at 14 least, where the bezel menu is not exposed, and you 15 make the -- you make the gesture. 16 And what we see in Figure 7 is, as you 17 make the gesture, the menu 610 gets exposed, and 18 immediately, the action associated with -- with -- 19 in the example in Figure 7, the gesture 20 associated -- or excuse me, the operation associated 21 with menu slot 614 is performed as you continue the 22 motion through that area of the bezel menu. 23 So, I think that's what's being described, 24 if you -- in that first sentence of paragraph 78, 25 where it says:
43 1 different possibilities here. Yeah. I think 2 without limiting it -- you know, without limiting it 3 to just those possibilities. 4 Q. So looking at, I guess Figure 7 of 5 Hinckley, this is showing the expert mode of this 6 object creation example? 7 A. Let me get to Figure 7 and look at that. 8 So I see Figure 7, and I am just going to -- excuse 9 me. I've got a lot of windows here -- look at 10 the -- look at the description of that. Let's see. 11 [Witness reviewed document.] 12 A. Yes. That's correct. This is an example 13 of Figure 7 in -- or excuse me, example -- Figure 7 14 is showing an example of this -- of how expert mode 15 would work. 16 Q. And I guess consistent with the first 17 sentence in paragraph 78, and following the arrow in 18 Figure 7, you would, I guess, start on the bezel and 19 then bring your finger down and cross through the 20 slot into the canvas. 21 So the gesture would start on the bezel, 22 go through the slot, and then on to the rest of the 23 screen. Correct? 24 A. In this example, yes. That's right. In 25 the example -- excuse me, in the example of	45 1 "In the expert mode, once the user is 2 familiar with the location of commonly used items 3 accessible from the bezel menu, the user can perform 4 a continuous -- a continuous finger-drag that 5 crosses through the slot or icon and onto the 6 canvas." 7 So, yeah. I think that's the idea of 8 exposing the -- of the menu in this case, 610, not 9 being exposed, and then it exposes as the user moves 10 their finger as they do that gesture, that's 11 certainly consistent with Hinckley's teachings. 12 Q. So if the menu is not exposed when you 13 started this gesture, would your finger cross 14 through the slot? So I guess in this example in 15 Figure 7, 614, and the first sentence at paragraph 16 78, it says "a continuous finger drag that crosses 17 through the slot." 18 A. Well, my understanding is that it would 19 cross through the slot. Because as you're literally 20 making that gesture that's shown in figure 610 with 21 that arrow -- as you are making that gesture, you 22 are revealing the menu 610. 23 So, literally, it's being revealed and 24 your finger is crossing through slot 614 as it's 25 being revealed.

46 1 So I think that is certainly one -- one, 2 how should you say -- one embodiment or 3 interpretation of what Hinckley is teaching, as 4 opposed to other embodiments like in paragraph 79, 5 where the bezel menu is not necessarily revealed at 6 all. 7 Q. And so, paragraph, I guess 79, which looks 8 to be discussing Figure 8, I guess, is it your 9 opinion that in paragraph 79, as shown in Figure 8 10 of Hinckley, that the bezel is not shown at all, and 11 you perform this -- the same gesture to create the 12 object, but in paragraph 78, it's a different 13 embodiment where, I guess, the menu is shown when 14 you perform that gesture? 15 A. Yeah. Yes. And I describe that in my -- 16 in my reply declaration. I guess it's paragraph 37, 17 where I describe that as well. Yeah. 18 Q. And I guess, how -- taking a step back, 19 how is the bezel menu 610 opened or exposed in these 20 examples? 21 A. Well, it's exposed -- let's look at 22 paragraph 73. It says: 23 "In one or more embodiments, the bezel 24 menu can be accessed through a bezel gesture, in 25 which a finger of user's hand 606 touches the bezel	48 1 explained with respect to Figure 7, which 2 illustrates, I guess one example or embodiment of 3 the expert mode, again, you have a gesture that can 4 reveal the menu and then you keep going. 5 It's a continuous gesture. That's the key 6 difference from the novice mode, that the user 7 didn't pause and lift their finger and sort of wave. 8 Instead, there is a continuous gesture. The menu is 9 revealed, and you have continued through a 10 particular menu slot to access the functionality 11 with it. 12 But yeah. It would be at least for the 13 beginning of the gestures, whether you are a novice 14 of expert mode, it would be the same gesture, and 15 then in expert mode, you would continue -- you 16 wouldn't pause. 17 You would continue on through the menu 18 slot. And then to access the operation or the 19 default operation associated with it. 20 Q. And when you say "pause," do you mean, I 21 guess temporal pause or a distance pause? 22 A. Let's see. 23 [Witness reviewed document.] 24 A. I think the way I should be careful. So 25 at paragraphs 77 says:
47 1 and then moves across the bezel and onto the display 2 device 608 in the direction of the illustrated 3 arrow. 4 This can allow bezel menu 610 to be 5 dropped down at which time it can become fully 6 opaque." 7 So the menu -- the bezel menu is exposed 8 through a gesture. 9 Q. Is that the same gesture that's used in 10 the expert mode? 11 A. Well, I think so, for multiple reasons. 12 If you look at Figures 7 and 8, and Hinckley -- 13 let's see. Excuse me. Let me -- it gets kind of 14 complicated. I want to just be -- be clear as I 15 look at these things. 16 [Witness reviewed document.] 17 A. So the way that -- what Hinckley is 18 teaching here is a gesture -- a bezel gesture that 19 we know when Hinckley describes the novice mode, the 20 user has made a gesture to reveal the bezel menu. 21 And the way Hinckley describes that, and 22 we read this part, the user gestures to reveal the 23 bezel menu, and the user can lift their finger. So 24 that gesture had to come down and reveal the menu. 25 Now, we -- as we described in -- as I	49 1 "In the novice mode after the user 2 gestures to reveal the bezel menu, the user can lift 3 their finger." 4 So the way I think about that is they have 5 made the gesture. The menu is revealed. And then 6 they lift their finger. So that's what actually 7 happened, as opposed to them continuing on through 8 it, which is the way things would happen in the -- 9 in the expert mode. 10 Q. So looking at Figure 6, this is depicting 11 an example of opening the bezel menu. Correct? 12 A. Yes. 13 Q. Okay. 14 And if the user touches the bezel, moves 15 through, I guess the 604 shown in the top 16 illustration of Figure 6, and then goes down and 17 lifts their finger, then the bezel menu will be 18 revealed. Correct? 19 A. Yes. Right. I think just what it says in 20 paragraph 73: 21 "The bezel menu can be accessed through a 22 bezel gesture in which a finger of user's hand 606 23 touches the bezel and then moves across the bezel 24 and onto the display device 608 in the direction of 25 the illustrated arrow. This can allow bezel menu

50 1 610 to be dropped down..." 2 Yeah. So that's what's described there. 3 Q. The gesture opening the bezel menu, is 4 that limited by distance in any way? And I'll give 5 you an example to try and make this more clear. 6 If I start at the bezel, and go down 7 half-way through the screen, as shown in the -- in 8 Figure 6, would that open the bezel menu? 9 A. Are you referring to Figure 6 10 specifically? I'm not sure I understood your 11 question. 12 Q. Yeah. Sorry. I'll try to rephrase it. 13 To be more clear. 14 Figure 6 shows the bezel menu exposed. 15 Correct? 16 A. Yes. 17 Q. And when the bezel menu is exposed, the 18 slots probably extend down 25 percent of the height 19 of the screen? 20 Is that fair? 21 A. Some -- some fraction of the display 22 screen. I don't know if it's 25 percent. 23 30 percent. Something. 24 Q. Okay. 25 A. I don't know. Somewhere in there, maybe.	52 1 downward, I guess will that -- what will occur? 2 A. Well, I think, you know, Hinckley is 3 talking about various embodiments of -- various 4 embodiments of its invention. And in paragraph 76, 5 it says: 6 "In at least some embodiments, different 7 gesture modes can be utilized to access 8 functionality associated with the bezel menu 6." 9 So, for example, one gesture mode can be a 10 novice mode and another gesture mode can be an 11 expert mode. And then in paragraph 77, what 12 Hinckley says there: 13 "In the novice mode, after the user 14 gestures to reveal the bezel menu 610, the user can 15 lift their finger, whereupon the bezel menu can 16 remain open for an interval -- a configurable 17 interval (or indefinitely)." 18 And so, I think all Hinckley is saying is 19 that in novice mode, there is a bezel gesture, 20 starts on the bezel and then moves down through the 21 visual affordance, which it also refers to. 22 And that reveals the bezel menu. And at 23 some point, it literally -- it says, after the user 24 gestures to reveal the bezel menu, the user can lift 25 their finger.
51 1 Q. Can we agree it's less than half? That -- 2 A. So that -- 3 Q. -- seventy-five percent? 4 A. At least as shown in that -- in the bottom 5 half of Figure 6, the bezel menu takes up less than 6 half of the display screen 608 in that example. 7 Q. And continuing with that illustration, if 8 I start a gesture on the bezel screen and move my 9 finger down to where it ends, probably half-way down 10 the display screen 608, will the bezel menu be 11 displayed? Will that gesture result in the bezel 12 menu being displayed? 13 A. And I -- there is not what -- I'm not 14 quite sure if you are asking -- are you asking if 15 the -- if there was -- if the user -- I mean right 16 now, as shown in figure -- as illustrated in the 17 bottom part of Figure 6, the tip of the user's 18 finger is at the bottom of one of the menu slots. 19 Are you saying if the user's finger 20 were -- fingertip were lower on the display? I'm 21 trying to understand what you are asking. 22 Q. Right. So if you are referring to 23 Figure 6, there is an arrow that illustrates, you 24 know, where the gesture starts, and then there is 25 the finger. If the finger continues sliding	53 1 So, I think all Hinckley is saying, 2 that -- is that after the menu is revealed, if the 3 user lifts their finger, then the bezel menu remains 4 open. And that's -- Hinckley is not saying that the 5 user has to lift their finger only precisely after 6 they have revealed it and they can't move their 7 finger anymore. 8 I think Hinckley just doesn't say that. 9 All it says is that the user lifts -- lifts finger 10 and then the bezel menu remains open. So that's all 11 Hinckley says. 12 Q. So I guess referring to the last sentence 13 in paragraph 78, which is discussing the expert 14 mode? 15 A. Yes. 16 Q. The user can also lift a finger and then 17 at least in some embodiments, the bezel menu can 18 remain open in the expert mode. 19 Is that correct? 20 A. Yes. Paragraph 78 is referring to the 21 expert mode, and describing a gesture that happens 22 in the expert mode. And then as you said, it's 23 saying that, at this point, the user can lift a 24 finger, go on and do some annotations. 25 And then:

54 1 "In at least some embodiments, the bezel 2 menu 610 may or may not remain fully open after a 3 particular functionality has been accessed." 4 So Hinckley, I guess, contemplates or 5 teaches both possibilities, that the bezel menu can 6 remain open, or cannot -- may or may not remain 7 open. 8 Q. And the bezel menus that we have been 9 talking about, in I guess Figures 6 through 8, they 10 don't depict a radial menu icon. Correct? 11 A. None of these examples show a radial menu 12 icon in Figures 6 through 8. 13 Q. And so, is it fair to say that the novice 14 and the expert modes of the bezel menu are 15 independent of the inclusion of any radial menu or 16 radial menu icon? 17 A. Well, I -- if by "independent," you mean 18 novice and expert mode could be used with bezel 19 menus that had radial menu icons, and, therefore, 20 radial menu submenus, and bezel menus that did not 21 have radial menu icons, I would agree. 22 I think the novice and expert mode could 23 be used in either of those situations. 24 Q. And then, there are bezel menus that do 25 include these radial menu icons, like that shown in	56 1 it could be whatever functionality the system 2 designer wanted to associate with it. 3 Q. And so, a user can also access 4 functionality that's associated with the radial menu 5 icon, or I guess the radial menu, by, I guess 6 manipulating or selecting the radial menu icon 1714. 7 Is that correct? 8 A. Yes. Hinckley -- I mean, Hinckley 9 described that, I think pretty clearly, that a user 10 can -- you know, a user can access a radial menu 11 through a -- is able to do it through a tap and hold 12 on the radial menu icon 1714. 13 And I think it says that that's -- the 14 radial menu icon 1714 portion of icon or slot 1712. 15 Q. And the icon -- the radial menu icon 1714 16 is smaller in size than the icon 1712. Right? 17 A. Yes. It's a -- it's only a part of -- 18 well, it's only a portion of the whole display -- I 19 guess the part of the display screen that is menu 20 slot 1712. 21 Q. Would you say it's a relatively small 22 portion? 23 A. Well, my -- I mean, as illustrated in 24 Figure 17, radial menu icon 1714 is -- I mean, 25 certainly takes up less than half of the area of
55 1 Figure 17. Correct? 2 A. Yes. 3 Q. And I guess referring to the paragraph 4 discussing radial menus, it looks like it starts at 5 paragraph 104, with the heading, "Radial Menus." 6 A. Yes. 7 Q. I guess referring to Figure 17, it shows a 8 version -- a top version without a radial menu, and 9 then a bottom version with the radial menu exposed. 10 Is that fair? 11 A. Yes. 12 Q. And so, in the -- I guess starting at the 13 top example without the radial menu exposed, a user 14 can access the functionality of one of the slots 15 1712 by tapping on that slot. 16 Is that correct? 17 A. Let's see. Yes. Tapping on the -- I just 18 want to make sure I have the exact language that -- 19 excuse me -- that Hinckley uses here. 20 [Witness reviewed document.] 21 A. Excuse me, I'm -- oh. I see the problem. 22 Yeah. You -- I think I know what you asked. But 23 basically, Hinckley says that tapping on the bezel 24 menu slot will access some functionality. 25 And I think Hinckley goes on to say that	57 1 1712. 2 I don't think Hinckley necessarily 3 specifies how big or small, or restricts how big or 4 small 1714 -- radial menu icon 1714 must be. But as 5 I said in the illustrated examples, it is, you know, 6 certainly less than half of the whole area of menu 7 slot 1712. 8 Q. And I guess as a general principle, is it 9 easier to select objects that are larger, as 10 compared to objects that are smaller? You know, all 11 things being equal, other than the size? 12 A. Yes. It's well-known, and really obvious, 13 in a user interface, it's easier -- one of the 14 factors that affects how easy it is to select an 15 object or how quickly you can select an object is 16 its size. 17 Q. And so, you would agree that a user 18 specifically trying to touch the radial menu icon 19 1714, as it's depicted in Hinckley's Figure 17, 20 would have a higher risk of error than a user trying 21 to just select the portion of slot or icon 1712? 22 Or -- 23 A. Well, all things being equal, it's easier 24 to select a larger area than a smaller area. Again, 25 I think Hinckley teaches a couple things that I

58 1 think are important to keep in mind. 2 That Hinckley, you know, talks about a tap 3 and hold on or near the radial menu icon 1714. So 4 it's talking about a tap and hold on or near that 5 radial menu icon. And then it's talking about a tap 6 on the whole menu slot 1712. 7 So it's talking -- it's giving examples of 8 two different gestures. A tap and a tap and a hold. 9 And it's also saying that the tap and hold with 10 respect to radial menu icon 1714 doesn't have to be 11 only just precisely on it, but it also can be near 12 it. 13 Q. And so, there is a sentence at the end of 14 paragraph 107 that says: 15 "In some embodiments, tapping on the 16 radial menu icon triggers a default action which may 17 or may not be different than the action associated 18 with tapping on the bezel menu slot." 19 Do you see that? 20 A. Yes. 21 Q. So is this describing, I guess, two 22 alternative embodiments? Or can you provide me with 23 what your understanding of -- what that sentence is 24 saying? 25 A. I think my understanding is simply based	60 1 Q. And are those alternative embodiments? Or 2 alternative ways, you said? I mean, I guess what 3 I'm getting at here is there is -- there is this 4 "may or may not." 5 And so, I guess in your testimony, is it 6 your understanding that there is a kind of one way 7 to build it, or it's the same, and then another way 8 to build it or it's different? 9 A. Well, let me try to explain again and I 10 think it will answer your question. And I'm going 11 to give the -- I'm going to first start with a 12 perspective of the user of the system. 13 So, if I tap on somewhere on menu slot 14 1712, something will happen. Something could 15 happen. I suppose you could design a system so that 16 nothing happened, but that's not very interesting. 17 Not very useful. 18 So something will happen if you tap on a 19 menu slot. And that includes that something will 20 happen if you tap on the portion of the menu slot 21 covered by the radial menu icon. Something will 22 happen. 23 And in a user's perspective, either it 24 will be when I tap on an area of the menu slot that 25 is the radial menu icon portion -- either that
59 1 on the -- just the plain language. And I'll read it 2 again. And then I guess just explain it. 3 "In some embodiments, tapping on the 4 radial menu icon triggers a default action which may 5 or may not be different than the action associated 6 with tapping on the bezel menu slot." 7 So, what Hinckley is saying is remember, 8 before we were talking about a tap on the radial 9 menu -- or, excuse me, a tap on the menu slot 1712 10 and a tap and hold on the radial menu icon 1714. 11 Now, Hinckley is just talking about one 12 gesture -- a tap -- and saying that a tap on the 13 radial menu icon could trigger a default action 14 which may or may not be different than the action 15 associated with tap on the bezel menu slots. 16 So Hinckley is saying, look, consistent 17 with my teachings, somebody who's designing a system 18 could design it so that the tap on the radial menu 19 icon portion of the menu slot has a different action 20 than the default action from tapping on the rest of 21 menu slot 1712, or it could be the same action. 22 So, that's -- that's what that sentence is 23 saying. Hinckley is saying you could -- "if you are 24 building a system, you could do it both ways, 25 according to my teachings."	61 1 action will be the same thing that happens if I tap 2 on another portion of the menu slot, or it will be 3 different. 4 Literally, there is no other logical 5 possibilities. It's got to be one or the other. 6 And so, as a system designer, you are going to 7 design it, one way or the other. 8 So then, to answer your question, I think 9 Hinckley is saying, I mean, maybe the language is a 10 little inartful the way it's written, but Hinckley 11 says: 12 "In some embodiments, tapping on the 13 radial menu icon triggers a default action which may 14 or may not be different than the action associated 15 with tapping on the bezel menu slots." 16 It's got to be one or the other. It may 17 or may not be different. It's almost just a logical 18 requirement. It has to be the same or it has to be 19 different. There is no other possibility. 20 Q. Okay. I think I understand you. So like 21 you said, from a systems designer, you basically can 22 do implementation A, that may be different, and then 23 you can do implementation B, that may not be 24 different. 25 Is that a fair characterization?

62 1 A. I think that's what a person of ordinary 2 skill in the art would understand Hinckley to be 3 saying. Yes. 4 Q. Okay. And I guess referring to your 5 paragraph 21 of your reply declaration? 6 A. Okay. I'm there. 7 Q. The first sentence, you kind of quote this 8 language, and you have a dot, dot, dot, that 9 eliminates the possibility that it may be different. 10 And so, am I correct in interpreting that 11 as you are relying on, I guess the implementation or 12 the tapping on the icon 1714 may not be different, 13 i.e., the same, as the tap on the other portion of 14 the slot 1712? 15 Is that correct? 16 A. Well, here, for the -- let's see. I want 17 to just look at that paragraph and see where I am in 18 my report. Yeah. 19 [Witness reviewed document.] 20 A. Right. So again, in my report, I'm 21 replying to Dr. Rosenberg's opinions. And as part 22 of my reply here, I'm talking about the -- I guess, 23 if you will, I'm talking about the teaching of 24 Hinckley, that tapping on the default menu icon 25 triggers a default action, which may not be	64 1 tapping anywhere inside menu slot 1712, including 2 the radial menu icon 1714, would activate a default 3 operation. 4 Is that fair? 5 A. In these first several sentences of 6 paragraph 21 of my declaration, I am -- as part of 7 my reply to Dr. Rosenberg, I am referring to the 8 case where -- as Hinckley taught, the case where 9 tapping on the radial menu icon triggers a default 10 action which may not be different than the action 11 associated with tapping on the bezel menu slot. 12 So, yes. This is a case where I'm talking 13 about the possibility that Hinckley related where 14 tapping anywhere on the menu slot 1712, including 15 the radial menu icon 1714, would lead to the same 16 action. 17 Q. So moving to paragraph 108 of Hinckley, 18 this is discussing performing or accessing 19 functionalities of radial menu 1715 after it is 20 open. Correct? 21 A. Yes. 22 Q. And so, we had been discussing, I guess 23 that you can do a tap and hold on the icon 1714 to 24 open or expose this radial menu 1715. Correct? 25 A. Yes.
63 1 different. Which may not be different than the 2 action associated with tapping on the bezel menu 3 slot. 4 So that was one of the possibilities that 5 Hinckley contemplated. And here in my reply to, you 6 know, Dr. Rosenberg, I'm talking about that 7 possibility. And I think maybe just the next 8 sentence there is probably useful. 9 "In other words, tapping anywhere inside 10 menu slot 1712, including the radial menu icon 1714, 11 would activate a default operation (e.g., launching 12 an application), whereas tapping and holding on or 13 near the radial menu icon 1714 of menu slot 1712 14 opens the radial menu 1715." 15 So, I'm just talking about that teaching 16 of Hinckley here as part of my reply or my response 17 to Dr. Rosenberg. 18 Q. And so, this interpretation, I guess 19 only -- well scratch that. Let me start again. 20 The last sentence of Hinckley's paragraph 21 107 has kind of embodiment A and embodiment B, are 22 two different embodiments, and then your paragraph 23 21, you are relying on one of those, in which the 24 default action may not be different. 25 And then that embodiment, as you said,	65 1 Q. And so, in that scenario, if you tap and 2 hold, the radial menu 1715 will appear, and then you 3 can lift your finger up. And then according to the 4 first sentence of paragraph 108, you have to touch 5 back down and then stroke in a particular direction 6 to access kind of the various functionalities. 7 Is that correct? 8 A. Yes. I think you just paraphrased that 9 first sentence, and I would agree with that first 10 sentence. I mean, that's what Hinckley says. 11 Once the radial menu 1715 is exposed, the 12 user can access various functionalities or commands 13 by touching down on or near the radial menu icon and 14 stroking in a particular direction. 15 So, since that says the user can access 16 functionality by touching down and then stroking, 17 that implies that the user -- that the user's finger 18 was not the contact before, because it says you have 19 to -- the user is now touching down. Yeah. 20 Q. And so, when a user touches down and 21 strokes their finger in a direction that's 22 associated with one of the five, I guess 23 cross-hatched squares that are shown in Figure 17, 24 that would result in the action that was associated 25 with the slot being replaced by the functionality

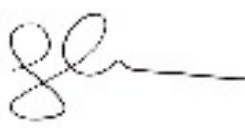
66 1 associated with the cross hatch square? 2 Is that consistent with your 3 understanding? 4 A. I think -- I think you are referring to 5 the last sentence of paragraph 108, or last two 6 sentences of paragraph 108. 7 "In at least some embodiments, each icon 8 or slot 1712 has a default functionality or command. 9 By selecting a particular radial menu functionality 10 or command, the default functionality or command may 11 be replaced by the selected functionality or 12 command." 13 Yeah. The -- yeah. I think, so what 14 Hinckley is talking about here is a way through 15 using the radial menu to change the default 16 functionality of the menu slot that the radial menu 17 is associated with. 18 Q. Okay. And I guess -- just as an example, 19 I guess to help me illustrate things or clarify 20 things in my own head. 21 Let's say you start -- you know, you get 22 this thing out of the box. First time operating it. 23 You pull out the menu. You know, the slot 1712 will 24 have a default action that's associated with, you 25 know, one function.	68 1 action, and another time, depending on how it's 2 configured, where a user could tap 1712 and it would 3 perform a second distinct action. Correct? 4 A. Because Hinckley talks about -- again, 5 this is all in certain embodiments, but because 6 Hinckley talks about a menu slot having a default 7 action that can be triggered by tapping, and because 8 Hinckley says the default action can be changed 9 through this particular means, then that means -- 10 then that implies that at different points in time, 11 tapping on a menu slot would lead to different 12 actions because the default action has been changed. 13 Q. Okay. I'm going to drop Exhibit 1004 into 14 the chat that references the Ahn reference. 15 THE WITNESS: Since we are shifting and we 16 have been going over an hour, I'd actually like a 17 break at this point. 18 ATTORNEY WALLIS: Sure. Is five minutes 19 all right? 20 THE WITNESS: Yeah. Yeah. There's fine. 21 ATTORNEY WALLIS: Okay. Good. 22 (Short break.) 23 BY ATTORNEY WALLIS: 24 Q. All right, Dr. Terveen. Now turning to 25 the Ahn reference that I put in the chat for you, I
67 1 You can then use the radial menu, via the 2 radial menu icon, to select a different 3 functionality, and then you can tap on the slot 4 after that and it will be essentially a second 5 function instead of the default function. 6 Is that correct? 7 A. That seems like a correct description 8 of -- as Hinckley said, how its invention could 9 operate in at least some embodiments. Yeah. In at 10 least some embodiments, an icon or slot 1712 has a 11 default functionality. 12 And then in at least these embodiments, 13 you could change that default functionality by 14 selecting a particular functionality through a 15 radial menu. 16 Q. Okay. 17 And so, I guess depending on what the user 18 had done in the past, you know, whenever you click 19 on the slot 1712, it could result in different 20 actions being performed, depending on kind of how 21 it's configured or set up. Right? 22 A. Could you ask that question again? 23 Q. So, under the interpretation we have been 24 discussing in Hinckley's paragraph 108, there could 25 be a time where a user taps 1712 and it performs one	69 1 think you said you were able to get that open. 2 Right? 3 A. Yes. I've got it open. 4 Q. Okay. 5 And Ahn -- if we'll go to Figure 18? 6 Well, let's backtrack just a bit. Ahn describes a 7 way of opening its menus via a, I guess, directional 8 pattern or via directional keys. Correct? 9 A. That's one thing Ahn describes. 10 Q. And in opening a menu via these 11 directional keys, a user would hit a prospective 12 key, and then thereafter, a menu would appear on a 13 side of the screen that was associated with that 14 respective key. 15 Is that correct? 16 A. Yeah. That's one teaching of Ahn. 17 Q. And then Ahn teaches opening the same 18 menus via touch gestures. Correct? 19 A. Yes. That's another teaching of Ahn. 20 Q. And referring to Figure 15 of Ahn, a user 21 can swipe to open one of these menus, and in the 22 example in Figure 15, it's menu 1500. 23 That's correct? 24 A. Let's see. I think -- I think Ahn 25 illustrated opening -- or one -- Ahn illustrated

70 1 opening menus with a touch gesture, with respect to 2 Figure 15's menu. That's correct. 3 Q. And Figure 18, and corresponding 4 paragraphs 118 and 119 describe opening the same 5 menu 1500. Correct? 6 A. Correct. Paragraphs 118 and 119 describe 7 ways to open a menu. And they are referring 8 specifically to the example of opening the menu 9 shown in Figure 15. 10 Q. The Figure 18, I guess, has two 11 illustrations. An A and a B. Is that correct? 12 A. Yes. 13 Q. Are these two different embodiments? Or 14 are these -- I guess, so let's restart that. So 15 strike that. 16 Are these two different operations? Or 17 are these two different portions of the same 18 operation? 19 A. I believe a person of ordinary skill in 20 the art, reading these paragraphs 118 and 119, and 21 looking at Figure 18(a) and (b), would think of 22 these as being two different operations or gestures. 23 Q. Okay. 24 So I guess let's start with the first 25 operation. And that would be illustrated in	72 1 let's just talk about paragraph 118, which refers 2 mostly to Figure 18(a). 3 It's that shaded -- shaded area in 4 figure -- in the Figure 18 that is referred to with 5 a number 1800. 6 So then, what Figure 18 -- excuse me -- 7 what paragraph 118 goes on to say is that Figure 18 8 illustrates an example of a screen for displaying a 9 graphical display for notifying a start position of 10 a touch and drag operation to a user. 11 So it's -- for example, referring to 12 Figure 18(a), if the user drags in a right direction 13 after touching the screen, a graphical shadow 1800 14 is displayed in the display 40, and the menu list 15 1500 shown in Figure 15(b) can be displayed in the 16 display 40. 17 In this case, as the user drags the 18 graphic shadow 1800, the menu list 1500 can be 19 displayed along the dragged graphic 1800. 20 So I am going to explain that maybe in a 21 little simpler language. Figure 18(a) is showing a 22 case where the user is dragging in a right 23 direction. So starting on the left edge of the 24 screen. Because that graphical shadow 1800 shows -- 25 it notifies the start position of the touch and drag
71 1 Figure 18(a). Correct? 2 A. Yes. 3 Q. And that would be described in paragraph 4 118. Correct? 5 A. Yes. 6 Q. Can you just describe, I guess, how this 7 works? 8 A. Yes. I may be going back -- I'll start 9 with paragraph 117, because this is sort of setting 10 up -- it's setting up both paragraphs 118 and 119. 11 So paragraph 117, it says: 12 "In the above-described implementations, 13 if the touch and drag operation of a specific 14 direction is performed in the touch input device 10, 15 an identifier for notifying the user that an item 16 list matched to the specific direction is displayed 17 in the display can be displayed in the display 18 40 --" 19 The language got kind of involved there. 20 "The identifier may be graphical in form, 21 such as an icon. For example, the identifier may be 22 a specific icon for notifying a start position of 23 the touch and drag operation." 24 So the icon or identifier, then -- that is 25 referred to in paragraph 117, in paragraph -- well	73 1 operation. 2 And then, as the user drags the graphic 3 shadow rightward, the menu list can be displayed 4 along the dragged graphic. So the menu is being 5 dragged in as the user is -- as the user is 6 dragging -- as the user is doing a drag gesture. 7 So, that's maybe complicated language, but 8 basically, Figure 18(a) is describing a case 9 where -- or is illustrating a case where the user 10 can drag in a menu from the left side of the screen, 11 using a rightward drag -- rightward drag or swipe of 12 their figure. 13 Q. Does the user -- or I guess, is graphic 14 shadow 1800 always shown? Or does the user have to 15 bring it out by dragging in a right direction? 16 A. Well, I think here, you have to -- I think 17 a person of ordinary skill has to read the paragraph 18 117 to understand the purpose of the graphical 19 shadow 1800. 20 So the graphical shadow 1800 is -- its 21 purpose is to notify a start position of a touch and 22 drag operation to a user. That's what it says in 23 paragraph 118. It said the same thing in paragraph 24 117. The identifier may be a specific icon for 25 notifying a start position of the touch and drag

74 1 operation. 2 So when you read that, you see that the 3 icon or indicator, which an example of that is the 4 graphical shadow 1800, needs to be visible. Because 5 its purpose is to indicate to the user the start 6 position of a touch and drag operation. 7 Q. So read, I guess, the first sentence -- 8 actually, let's read the second sentence of 9 paragraph 118. 10 "For example, referring to Figure 18(a), 11 if the user drags in a right direction after 12 touching the screen, a graphical shadow 1800 is 13 displayed in the display." 14 Is that describing me dragging, and then 15 the graphical shadow appearing? Or are you saying 16 the graphical shadow is already there? 17 A. I think the graphical shadow is already 18 there. I think, again, when a person of ordinary 19 skill in the art reads these paragraphs and 20 understands what the purpose of the graphical shadow 21 is, it would have to be displayed in order to serve 22 that purpose. Namely, to notify the user of the 23 start position of the touch and drag operation. 24 So, I think maybe that language is a 25 little funny. But that's -- the language you just	76 1 the user is trying to do. They are trying to drag a 2 menu -- get a menu on to the screen. 3 And the graphical shadow's purpose is to 4 show that that's -- that something is available for 5 them to do, and that the start position of the 6 gesture is, well somewhere on the -- in this case, 7 the left edge of the screen. 8 Q. And so, I guess your interpretation, or 9 your understanding is that a POSITA would not read, 10 you know, paragraph 117 or 118 literally, as kind of 11 if/then operations, but they would understand that 12 the device, or the graphical shadow 1800 is there to 13 begin with? 14 Is that correct? 15 A. I said that is a certainly -- yes. A 16 POSITA would understand it that way. Because of the 17 purpose of the graphical shadow. 18 And if we just sort of think about the 19 second sentence in paragraph 118: 20 "For example, referring to Figure 18(a), 21 if the user drags in a right direction after 22 touching the screen, a graphical shadow 1800 is 23 displayed in the display 40." 24 And I think what's again a consistent 25 interpretation of that, in light of the teachings
75 1 read might be a little funny, but I think that's 2 what a person of ordinary skill in the art would 3 understand it to mean. Because of the purpose of 4 the graphical shadow. 5 Q. And so, I guess reading the first 6 paragraph of -- or first sentence of paragraph 117, 7 if the touch and drag operation of a specific 8 direction is performed in the touch input device, an 9 identifier for notifying the user that an item was 10 matched to the specific direction is displayed in 11 the display. 12 It's your understanding that this is not a 13 kind of if/then functionality? Where if the touch 14 and drag operation is performed, an identifier for 15 notifying the user is displayed? 16 A. I think the way a person of ordinary skill 17 in the art would interpret that language, especially 18 in light of Figure 18, which shows that the 19 graphical shadow is displayed -- I think that would 20 indicate that at least one implementation that's 21 consistent with that is that the graphical shadow is 22 displayed in order to notify the user of the start 23 position for touching and dragging a menu on to the 24 screen. 25 Because, you know, that's -- that's what	77 1 here in these paragraphs, is that it is displayed, 2 but it doesn't mean it wasn't displayed before the 3 user started dragging in a right direction. That's 4 not -- that's not required, that it was not 5 displayed before the user started dragging. 6 And furthermore, if it wouldn't be 7 displayed, then how would it serve the purpose of 8 notifying the user of where you needed to drag in 9 order to bring out the menu? 10 Q. But that paragraph 118 uses, I guess a 11 different description for the menu, where it says it 12 can be displayed. Is that right? Whereas the 13 graphical shadow is displayed. 14 A. Well, you are referring to the sort of 15 last part of the second sentence of that paragraph. 16 But if we go to the third and final sentence, it 17 reads: 18 "In this case, as the user drags the 19 graphic shadow 1800, the menu list 1500 can be 20 displayed along the dragged graphic 1800." 21 So that's certainly teaching a case where 22 as you are dragging the menu -- as you are dragging 23 the graphic shadow, you are also -- the system is 24 also displaying the menu list alongside it. 25 Yeah. That's just what that language

78 1 would -- that's how a person of ordinary skill in 2 the art would understand that language, when it says 3 the menu list can be displayed along the dragged 4 graphic 1800. 5 That would have to mean it's being 6 displayed while the user is doing the dragging. 7 Q. And I know we had briefly discussed kind 8 of Figure 15 before. And in Figure 15, this 9 graphical shadow is not depicted. Correct? 10 A. That's correct. I mean, I -- Ahn shows, I 11 think Figure 15 shows what that menu 1500 would look 12 like. 13 And then in Figure 18, in these paragraphs 14 that we have been discussing, it shows a way that -- 15 or -- yeah -- a way that you could actually bring 16 out or -- what would you call it, reveal the menu in 17 Figure 15. 18 Q. So is it fair that Figure 15 and Figure 18 19 are both illustrating ways to reveal menu 1500, but 20 that Figure 18 has the graphical shadow displayed? 21 Whereas Figure 15 does not? 22 A. Let's see. I think, you know, Ahn 23 describes different menus and different 24 techniques -- different types of menus. Different 25 techniques. We discussed already that menus can be	80 1 Q. And so, I guess Figure 15 and Figure 18 2 are alternative embodiments, since that graphical 3 shadow is not shown in Figure 15? 4 A. Let's see, if I -- I should probably check 5 the exact description of Figure 15. I see when I'm 6 glancing at Figure 15, that it may show the finger 7 moving without any graphical shadow. 8 So it could be that that's a different -- 9 it's just a different technique, but I do want to 10 look at what it says about Figure 15, just to be 11 clear that I'm not being too restrictive. 12 [Witness reviewed document.] 13 A. I mean, when I look at paragraph 104, it 14 seems to me unless I'm not searching -- I'm not 15 finding everything when I search, all it says about 16 Figure 15(b) is a menu list matched to a right 17 direction is set to be displayed at the left side of 18 the display 40, Figure 15(b). 19 Yeah. So I mean, when it talks about 20 Figure 15 there, it's certainly not showing any use 21 of a graphical shadow. So I certainly -- Figure 15, 22 in its description in paragraph 104 doesn't talk 23 about the use of a graphical shadow. 24 Q. And so, revert back to paragraph 118. 25 That first sentence. It says:
79 1 revealed through pressing a key or from gestures. 2 And then Ahn also teaches through its 3 Figure 18, and through these paragraphs we have been 4 discussing, the use of an indicator like the 5 graphical shadow, for giving a user a clue that as 6 to the start position of -- of a gesture that would 7 let you reveal a menu. 8 So, Ahn discloses various things. And 9 here in these paragraphs, and in Figure 18, it's 10 showing one particular way of revealing a menu, 11 which is aided through the use of this graphical 12 shadow technique. 13 Q. And in Figure 18, the graphical shadow 14 would always be on a display? 15 A. Well, we have discussed that a person of 16 ordinary skill in the art would understand it to be 17 visible as an aid to the -- to the -- to knowing 18 where to start the gesture to reveal the menu. 19 I mean, I -- so it certainly is -- it 20 certainly is displayed here, as we've been 21 discussing. I mean, I suppose that you could have a 22 different mode of the interface where you choose not 23 to display it, but certainly, I'm talking about, or 24 these paragraphs are talking about a case where it 25 is displayed.	81 1 "Figure 18 illustrates an example of a 2 screen for displaying a graphical display." 3 Would that be, I guess, more clear, if it 4 said Figure 18 illustrates an example of a screen, I 5 guess, where graphical shadow is displayed? Because 6 it seems to me, I guess what I'm getting at is for 7 displaying at least, in my reading, seems not clear 8 that it's already displayed. 9 A. Yeah. I think I'll simply say again, when 10 a person of ordinary skill in the art reads these 11 paragraphs, and understands what they are clearly 12 saying the purpose of the graphical display is, 13 namely, for notifying a start position of a touch 14 and drag operation, literally, if the graphical 15 shadow or -- is not displayed, then it doesn't serve 16 the purpose of notifying the user of the start 17 position of a touch and drag operation. 18 So I think, could you have come up, or 19 could the people who wrote this, which I guess were 20 all -- the people who wrote this patent, or Koreans 21 who work for LG, could they have written clearer 22 English? 23 Maybe like just saying Figure 18 24 illustrates an example of a screen that displays a 25 graphical display for notifying a start position of

82 1 a touch and drag operation? Yes. 2 I think the language could have been -- 3 the language in certain places could have been 4 clearer. 5 But when you read these paragraphs as a 6 whole, which do clearly outline the purpose of the 7 graphical display, I think you realize it's hard to 8 see how it could serve -- the graphical shadow 1800 9 could serve that purpose without it being displayed. 10 Q. So paragraph 118 discloses, I guess a 11 right swipe, and then paragraph 119 discloses a 12 different operation that's a left swipe. Correct? 13 A. I believe so. So paragraph 119 starts: 14 "Further, for example, referring to 15 Figure 18(b), if the user touch drags to the 16 left..." 17 And then it goes on to explain -- explain 18 that example. 19 Q. And so, in that example, in the operation, 20 you would, I guess start off of the shadow and then 21 move on to it. And as you get to the shadow, the 22 menu would appear. 23 Is that correct? 24 A. Well, I think what it says is you would 25 start -- it says the user touch drags to the left.	84 1 works with respect to the bezel. 2 If you wouldn't mind for me, please 3 reading paragraph 45? And then I'll hone you in on 4 a sentence to ask a question, if that's okay? 5 A. Sure. Sure. Let me do that. Okay. 6 [Witness reviewed document.] 7 A. Okay. I've read that. 8 Q. Okay. There is a sentence maybe about, I 9 don't know, two thirds of the way down that 10 paragraph that says: 11 "Any suitable technology can be utilized 12 to sense an input on or adjacent bezel 103." 13 Do you see that? 14 A. Yes. 15 Q. Okay. 16 What would a POSITA have understood that 17 sentence, and maybe particularly in context of this 18 overall paragraph, to mean with respect to how a 19 bezel gesture would be detected? 20 A. Well, it says -- so, that sentence reads: 21 "Any suitable technology can be utilized 22 to sense an input on or adjacent bezel 103." 23 It goes on to say, in the next paragraph: 24 "For example, in at least some 25 embodiments, the digitizer or sensing elements
83 1 And so, it would have to be possible for the user to 2 touch drag to the left so their finger can't be at 3 the extreme left side of the screen. 4 So maybe -- maybe you start your finger at 5 the right edge of the graphical shadow, or a little 6 further -- or further inward on the screen? I think 7 that detail is not clearly specified here. It 8 simply says you are swiping left. Or it describes 9 that you are swiping or touch dragging to the left. 10 Q. Okay. 11 ATTORNEY WALLIS: I think that's all the 12 questions that I have, David. I can pass the 13 witness. 14 ATTORNEY HOLT: All right. I think I only 15 have maybe one question. Or one, I guess, maybe 16 issue on which to touch. 17 EXAMINATION BY ATTORNEY HOLT: 18 Q. Dr. Terveen, could you please open up 19 Exhibit 1006? The Hinckley reference? 20 A. Yes. Okay. I've got it. 21 Q. Okay. Can you go to paragraph 45, please? 22 A. Yes. 23 Q. I'd ask that you have a look at paragraph 24 45. We were previously talking about bezel gestures 25 and where the bezel is, and how a bezel gesture	85 1 associated with display device 108 can extend 2 underneath bezel 103." 3 And so, I think in this case, it's talking 4 about technologies that sends a -- they are able to 5 sense a gesture that starts on the bezel and moves 6 on to the screen. 7 But it also, because the sentence you 8 asked me to read says "any suitable technology can 9 be utilized to sense an input on or adjacent bezel 10 103," suggests that it's talking about recognizing 11 an input that is adjacent to the bezel. Namely, or 12 for example, starting at the edge of the display 13 screen, right adjacent to the bezel at the edge of 14 the display screen. 15 Q. Okay. 16 So how would that then implicate the 17 description of the bezel gestures through the 18 remainder of the document? 19 A. Well, I think what that means is, so 20 again, what I said is that this is describing a case 21 where the so-called bezel gesture is recognized from 22 the edge of the display screen. 23 It means that in the rest of the 24 document -- in the rest of Hinckley, when it's 25 describing the use of bezel gestures, that does not

86 1 only refer to cases where they -- those gestures 2 started on a bezel outside of the display screen 3 area. 4 Q. Okay. Thank you. I have no further 5 questions. 6 ATTORNEY WALLIS: No questions for me. We 7 can go off the record. 8 COURT REPORTER: Mr. Holt, can I get your 9 order please, for the transcript? 10 ATTORNEY HOLT: We'll just take a standard 11 delivery of the final transcript. No rush. No 12 rough. 13 COURT REPORTER: Okay. Thank you. That's 14 it. Thank you. 15 (Whereupon, the deposition adjourned at 16 11:59 a.m.) 17 18 19 20 21 22 23 24 25	88 1 2 CERTIFICATE OF DEPONENT 3 4 I, LOREN TERVEEN, hereby certify that I have read 5 the foregoing pages, numbered 1 through 86, of my 6 deposition of testimony taken in these proceedings on 7 Thursday, September 11, 2025 and, with the exception of 8 the changes listed on the next page and/or corrections, 9 if any, find them to be a true and accurate 10 transcription thereof. 11 12 Signed: 13 Name: LOREN TERVEEN 14 Date: 15 16 17 18 19 20 21 22 23 24 25																																																			
87 1 REPORTER'S CERTIFICATE 2 3 I, GISELLE MITCHELL-MARGERUM, the undersigned, a 4 Registered Professional Reporter, Certified Reporting 5 Instructor, Licensed Court Reporter, and Certified Court 6 Reporter, do hereby certify: 7 8 That the witness, LOREN TERVEEN, before examination 9 was remotely duly sworn to testify to the truth, the 10 whole truth, and nothing but the truth. 11 12 That the foregoing deposition was taken remotely 13 stenographically by me on Thursday, September 11, 2025, 14 and thereafter was transcribed by me, and that the 15 deposition is a full, true, and complete transcript of 16 the testimony, including questions and answers, and 17 objections, motions and exceptions made by counsel. 18 That reading and signing was not requested; and 19 that I am neither attorney nor counsel for, nor related 20 to or employed by, any of the parties to the action in 21 which this deposition was taken; and that I have no 22 interest, financial or otherwise, in this case. 23 24 IN WITNESS WHEREOF, I have hereunto set my 25 hand this 17th day of September, 2025. 17  22 GISELLE MITCHELL-MARGERUM, RPR, CRI, CCR, LCR, ACCR, CSR 23 CALIFORNIA CSR 14424 24 25	89 1 ERRATA SHEET 2 Case Name: Apple Inc. v. Smith Interface 3 Technologies, LLC 4 Witness Name: LOREN TERVEEN 5 Date: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Page/Line</th> <th style="width: 35%;">From</th> <th style="width: 35%;">To</th> </tr> </thead> <tbody> <tr><td>5</td><td>___/___</td><td>_____</td></tr> <tr><td>6</td><td>___/___</td><td>_____</td></tr> <tr><td>7</td><td>___/___</td><td>_____</td></tr> <tr><td>8</td><td>___/___</td><td>_____</td></tr> <tr><td>9</td><td>___/___</td><td>_____</td></tr> <tr><td>10</td><td>___/___</td><td>_____</td></tr> <tr><td>11</td><td>___/___</td><td>_____</td></tr> <tr><td>12</td><td>___/___</td><td>_____</td></tr> <tr><td>13</td><td>___/___</td><td>_____</td></tr> <tr><td>14</td><td>___/___</td><td>_____</td></tr> <tr><td>15</td><td>___/___</td><td>_____</td></tr> <tr><td>16</td><td>___/___</td><td>_____</td></tr> <tr><td>17</td><td>___/___</td><td>_____</td></tr> <tr><td>18</td><td>___/___</td><td>_____</td></tr> <tr><td>19</td><td>___/___</td><td>_____</td></tr> <tr><td>20</td><td>___/___</td><td>_____</td></tr> </tbody> </table> 21 Subscribed and sworn to before 22 me this date day of month , 2025. 23 _____ 24 LOREN TERVEEN 25	Page/Line	From	To	5	___/___	_____	6	___/___	_____	7	___/___	_____	8	___/___	_____	9	___/___	_____	10	___/___	_____	11	___/___	_____	12	___/___	_____	13	___/___	_____	14	___/___	_____	15	___/___	_____	16	___/___	_____	17	___/___	_____	18	___/___	_____	19	___/___	_____	20	___/___	_____
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